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CITY OF WAKEFIELD.

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REPORT ON THE PUBLIC HEALTH

AND

SANITARY STATE

OF THE

CITY OF WAKEFIELD.

FOR THE YEAR 1903,

BY

THOMAS GIBSON, M.D. (Edin.), D.P.H. (London),

MEDICAL OFFICER OF HEALTH AND

MEDICAL SUPERINTENDENT INFECTIOUS DISEASES HOSPITAL,

WAKEFIELD.

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By the Order of the Local Government Board dated March 23, 1891, Section 14, it is prescribed that the Medical Officer of Health shall “prepare an Annual Report, to be made to the end of December in each “year, comprising a summary of the action taken during the year for “preventing the spread of disease, and an account of the sanitary state “of his district generally at the end of the year. The report shall also “contain an account of the enquiries which he has made as to conditions “injurious to health existing in his district, and of proceedings in which “he has taken part or advised under the Public Health Act, 1875, so far “as such proceedings relate to those conditions; and also an account “of the supervision exercised by him or on his advice for sanitary pur- “poses over places and houses that Sanitary Authorities have power to “regulate, with the nature and results of any proceedings which may “have been so required and taken in respect of the same during the “year. It shall also record the action taken by him or on his advice “during the year in regard to offensive trades and to factories and work- “shops. The report shall also contain tabular statements (on forms to “be supplied by the Local Government Board, or to the like effect) of “the sickness and mortality within the district classified according to “diseases, ages, and localities.”





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HEALTH DEPARTMENT,

TOWN HALL, WAKEFIELD.

*To The Mayor, Aldermen, and Councillors of the City  
of Wakefield.*

MR. MAYOR AND GENTLEMEN,—

I have the honour to submit for your consideration a Report on the Public Health and Sanitary State of the City of Wakefield during the year 1903. I did not enter upon the duties of my office until the 15th of July, 1903, but I have utilised the records kept by my predecessor, Dr. Wade, for the purpose of the statistical tables which apply to the whole year.

It is satisfactory to find that the death-rate compares favourably with former years, and that it is but slightly in excess of that for the whole of England and Wales, which, furthermore, is the lowest death-rate ever recorded for the whole country. The birth-rate is not so satisfactory, but the birth-rate for the whole of England and Wales is also the lowest ever recorded. There are probably many factors conspiring to produce a general declining birth-rate, and it is a matter worthy of serious consideration, both from a public health and a national point of view. The particulars of the vital statistics will be found in the tables at the end of the Report.

The principal feature affecting the Public Health during the year has been an epidemic of Smallpox, but we had every reason to suppose that by the end of the year the outbreak had come to an end. Still, as long as the disease exists in the vicinity, the City can never be considered safe from invasion. There has been no excessive prevalence of other infectious diseases, with the exception of Measles, which in the last two months of the year assumed epidemic form amongst young children.

With regard to sanitation in general, much has been done during the year to remedy unhealthy conditions, but it must also be admitted that a very great deal yet requires to be done before the sanitary condition of the City can be considered satisfactory.

I would particularly direct your attention to the questions of Housing of the Poor, Prevention of Tuberculosis, Purity of the Milk Supply, and the Organisation of the Sanitary Department.

In conclusion, I have to thank my official colleagues for information supplied for the purposes of this Report, and for the assistance and courtesy they have at all times extended to me.

I am,

Mr. Mayor and Gentlemen,

Your obedient Servant,

24 February, 1904.

THOMAS GIBSON.



## STATISTICAL SUMMARY.

Acreage	...	...	...	...	2,438
Population (estimated 1st July, 1903)	...	...	...	...	42,066
Number of Persons per Acre	...	...	...	...	17
Number of Inhabited Houses (Census 1901)	...	...	...	...	8,274
Number of Persons per House	...	...	...	...	5
Births	...	...	...	...	1,069
Birth-rate	...	...	...	26.3 per 1,000 living	
Natural Increase of Population	...	...	...	...	399
Deaths (Residents)	...	...	...	...	670
Death-rate	...	...	...	15.9 per 1,000 living	
Deaths (Non-residents)	...	...	...	...	281
Infantile Death-rate	...	...	...	130.9 per 1,000 births	
Phthisis Death-rate	...	...	...	1.3 per 1,000 living	
Zymotic Death-rate	...	...	...	1.1	„
Measles Death-rate	...	...	...	0.45	„
Whooping Cough Death-rate	...	...	...	0.3	„
Zymotic Diarrhœa Death-rate	...	...	...	0.28	„
Enteric Fever Death-rate	...	...	...	0.14	„
Smallpox Death-rate	...	...	...	0.09	„
Scarlet Fever Death-rate	...	...	...	0.04	„
Diphtheria Death-rate	...	...	...	0.02	„

## POPULATION.

The population of Wakefield at the middle of 1903 is estimated by the Registrar-General to be 42,066. This only exceeds the Census population of 1901 by 653, whereas the natural increase or excess of births over deaths has in the interval been about 800. Owing to the fact that populated areas were added to the City between the Census periods of 1891 and 1901, it is impossible to calculate the present population on the annual increase that obtained during that time, and though I consider that it is probably an under-estimate, I have adopted the Registrar-General's figures as the basis of my calculations.

In former reports the population is given exclusive of the Asylum, but in this report the population stated includes that of the Asylum, which at the middle of the year amounted to 1,976.

The following table gives the population and other particulars at the time of the Census in March, 1901, in the several Wards of the City :

WARD.	Inhabit- ed Houses.	Uninhabited Houses.			Population.		
		In Occupation.	Not in Occupation.	Building	Persons.	Males.	Females
St. John's... ..	1000	59	22	9	4674	1990	2684
Northgate ... ..	1912	56	20	7	10806	5332	5424
Primrose Hill ...	1065	9	17	1	5369	2717	2652
N. Westgate ... ..	804	8	16	32	4306	2321	1985
S. Westgate ... ..	701	4	8	8	3509	1822	1687
Kirkgate ... ..	1090	7	23	6	5001	2469	2532
Calder... ..	889	17	7	5	4048	1997	2051
Alverthorpe ... ..	813	20	11	3	3700	1814	1886
Total ... ..	8274	180	124	71	41413	20512	20901

#### MARRIAGES.

The number of marriages celebrated in Wakefield during 1903 was 451. The annual rate of persons married is 21.4 per 1,000 of population.

#### BIRTHS.

There were 1,107 births registered in Wakefield during 1903.

#### BIRTHS IN REGISTRATION DISTRICTS.

Wakefield Registration District ... ..	603
Wakefield part of Stanley Registration District ...	124
Wakefield part of Alverthorpe Registration District ...	380
	<hr/>
	1,107

Males... ..	544
Females ... ..	563

The birth-rate is 26.3 per 1,000 of population, and is the lowest recorded during the past 10 years, when the average was 29.3. The natural increase of the population (excess of births over deaths) is 399.



## DEATHS.

There were 950 deaths registered in Wakefield during 1903, but of these 281 were non-residents belonging to districts outside Wakefield. One Wakefield resident died in another locality. Excluding the non-residents dying in Wakefield and including the resident dying outside Wakefield, we find that 670 deaths are to be properly credited to the City, which give an annual death-rate of 15.9 per 1,000 living. It will be seen from Table I. at the end of the Report that this is a lower death-rate than any recorded during the last 10 years, when the average was 19.3 per 1,000 living. It is, however, to be noted that in previous reports the West Riding Lunatic Asylum (which came within the City boundary in 1895) has been kept statistically entirely separate from the City, whilst the deaths of non-residents in other public institutions were included with the deaths of residents. The death-rate given above for 1903 is calculated on to the total population of the City (including the Asylum), but all non-resident deaths are excluded.

## DEATHS IN REGISTRATION DISTRICTS.

	Total Deaths.	Deaths of Residents.
Wakefield Registration District ... ..	419	372
Wakefield Part of Stanley Registration District ..	367	133
Wakefield Part of Alverthorpe Registration District ... ..	165	165
	951	670

## DEATHS IN PUBLIC INSTITUTIONS.

	Total.	Residents.	Non-Residents.
Asylum ... ..	224	13	211
Workhouse ... ..	95	69	26
Clayton Hospital...	55	24	31
Fever Hospital ... ..	8	4	4
Prison ... ..	8	0	8
Total ... ..	390	110	280*

\* A non-resident who died in a factory in the City is to be added to this, giving 281 non-resident deaths.

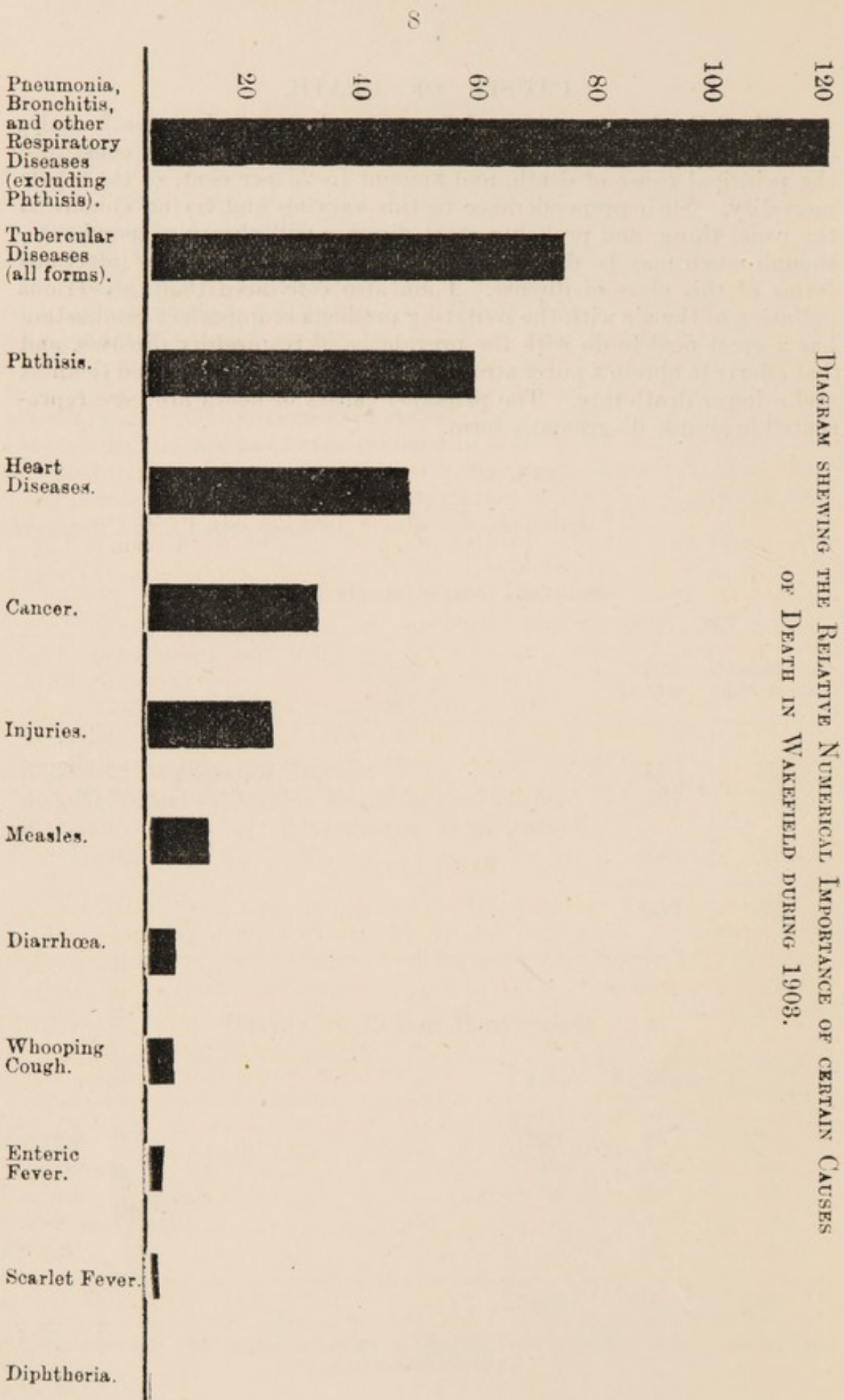
## CAUSES OF DEATH.

The following remarks and figures apply to resident deaths only, unless stated otherwise. Respiratory diseases of all kinds constitute the principal cause of death, and amount to 25 per cent. of the whole mortality. Such preponderance in this varying and trying climate is the usual thing, and probably chest diseases will always preponderate, though much may be done to reduce the mortality from the infectious forms of this class of disease. I am also convinced that the serious pollution of the air with the irritating products of imperfect combustion has a great deal to do with the prevalence of respiratory diseases, and that efforts to obtain a purer atmosphere would result in lessened sickness and a lower death-rate. The principal causes of death are here represented in simple diagrammatic form.



Deaths.

DIAGRAM SHOWING THE RELATIVE NUMERICAL IMPORTANCE OF CERTAIN CAUSES  
OF DEATH IN WAKEFIELD DURING 1903.



## INFANTILE MORTALITY.

This term refers to the number of deaths of infants under one year of age, and, for comparative purposes, it is estimated by calculating the number of deaths under one year per 1,000 births. The number of infantile deaths were 145, and the infantile mortality is 130.9 per 1,000 births. This is lower than any recorded during the preceding ten years, when the average was 172.5 per thousand births. The infantile mortality is generally to be regarded as an index of the sanitary state of any locality, and the lowering of this mortality in Wakefield is so far satisfactory. Probably, however, much more credit is due to the meteorological conditions prevailing than to improved sanitary conditions.

## ZYMOTIC DISEASES.

The zymotic death-rate means the number of deaths from the seven principal zymotic diseases per 1,000 of the population. These zymotic diseases are Smallpox, Scarlet Fever, Diphtheria, Typhoid Fever, Measles, Whooping Cough, and Diarrhœa. The number of deaths from these diseases is 49, and the rate is 1.1 per 1,000. The corresponding rate last year was 2.3 per 1,000, and the average number of deaths during the past ten years was 85. Our zymotic death-rate is therefore most satisfactory compared with past years, though one must remember that it is apt to be of a fluctuating character. Thus, in 1894 there were only 30 deaths from zymotic diseases, though in the previous year there were 100, and in the succeeding year 80.

## SMALLPOX.

The Smallpox epidemic, which had commenced early in December, 1902, continued throughout nearly the whole of 1903, and during that year 101 cases occurred. The severity of the epidemic was limited to the first four months of the year, during which time 70 per cent. of the cases were notified, but fresh cases continued to arise until the end of November. In November there was a slight recrudescence, owing to a mild and unrecognised case going about with the disease for a fortnight, during which time he infected 4 others. December was the only month of the year entirely free from notifications, but on the last day of the year there still remained 5 cases in hospital.

The number of cases notified monthly were as follows:—

January ...	...	11 cases,	July ...	...	3 cases.
February ...	...	22 „	August ...	...	2 „
March ...	...	20 „	September ...	...	3 „
April ...	...	17 „	October ...	...	4 „
May ...	...	7 „	November ...	...	7 „
June ...	...	5 „	December ...	...	0 „



There were 8 deaths, giving a case mortality of 7.9 per cent.

The cases were located as follows:—

Common Lodging Houses	...	...	...	...	24
Casual Wards of Workhouse	...	...	...	...	13
H. M. Prison	...	...	...	...	10
Private Dwelling Houses	...	...	...	...	54

The distribution of the cases in Wards will be seen on Table IV. at end of the Report.

The cases were dealt with in the following manner:—

Removed to Corporation Fever Hospital	...	...	95 cases.
Removed to Carrgate Fever Hospital	...	...	2 „
Isolated at home	...	...	1 „
Isolated in the Prison	...	...	3 „

The two cases removed to Carrgate Hospital were from Alverthorpe Ward; the three cases treated in the Prison were prisoners with unexpired sentences; the remaining case was able to have adequate isolation in his own home.

#### CASES IN WAKEFIELD FEVER HOSPITAL.

No. of Cases in Hospital, 31st Dec., 1902.	No. of Cases Admitted in 1903.	No. of Cases Discharged in 1903.	No. of Cases Dying in 1903.	No. of Cases Remaining, 31st Dec., 1903
4	96*	87	8	5

\* Including one case from Wakefield Rural District.

#### AGES OF CASES ADMITTED TO HOSPITAL.

Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.
1	4	10	10	68	3

The youngest patient was 9 months, and the oldest 84 years of age. It is to be noted that 74 per cent. of these cases are over 25. In pre-vaccination days, it was children that suffered most.

The average length of stay in Hospital was 32 days.



## DEATHS.

All the deaths (8) occurred in Wakefield Fever Hospital.

Sex.	Age	Condition as to Vaccination.
Male	50	Vaccinated in infancy. Poor scars. Never revaccinated
Male	33	Never vaccinated
Male	60	Vaccinated in infancy doubtful. Never revaccinated
Female	58	Vaccinated in infancy. Poor scars. Never revaccinated
Male	44	Vaccinated in infancy. Poor scars. Never revaccinated
Male	53	Never vaccinated
Male	48	Vaccinated in infancy. Two good scars. Never re-vaccinated
Male	50	Never vaccinated

It is to be noted that 3 out of the 8 fatal cases had never been vaccinated. The 5 other cases had never been re-vaccinated, whilst the youngest was 33 years of age.

## REMARKS ON THE EPIDEMIC.

All the cases were promptly isolated, the rooms, bedding, etc., exposed to infection disinfected, and such contacts as would submit to the operation were re-vaccinated. The contacts were also kept under medical observation until the incubation period of the disease was well over. The unremitting efforts of the Sanitary Department to stay the epidemic were rewarded by a remarkably small number of secondary cases, and there can be little doubt that the epidemic would have been short-lived had not fresh cases been imported into the City from time to time. The vagrant class of the community that frequent common lodging houses and the casual wards of the Workhouse are responsible not only for starting the epidemic (the first case, in December, 1902, was an inmate of a common lodging house), but also for maintaining by fresh introductions the prevalence of the disease during 1903. The great influx of navvies attracted by the new railway and other works in and around Wakefield further increased the danger, for the navvy, as a means of spreading Smallpox, is hardly less innocent than the tramp proper. He is often hardly less migratory than the tramp, and generally seeks the same resting place, the common lodging house or the casual ward. When we consider that in Wakefield there are 25 registered common lodging houses, with a combined population, when full, of nearly 800 persons (and they often exceed this number), and that through these houses there is a constant stream of the lowest, most unclean, and most regardless class of human beings, the only surprising thing is that Smallpox was not more frequently introduced into our midst than it was. The disease was also carried out of Wake-



field by the same class into other localities, and doubtless on many more occasions than we know of. When a case of Smallpox occurs in a common lodging house, several of the inmates, often the closest contacts, nearly always disappear forthwith, probably alarmed lest they should be submitted to the indignity of a bath or have their movements restrained in any way. Nothing more is heard of them till they in some other district sicken with the disease, and in turn start off a fresh batch of infected individuals. It has been the practice in Wakefield for the Sanitary Authority to pay to each contact in lodging houses the cost of his lodging (usually 4d. a night) for 14 or 16 nights, on condition that he reported himself to the Medical Officer every day during that period. In order to make this method of retaining contacts under observation more effectual, the money was not paid until the expiry of the stated period. This method was fairly successful, and by it we were able to isolate some cases at the very commencement of the illness. Still, notwithstanding this inducement to stay, a large number of contacts moved on, and were lost sight of.

The part played by the tramp and the navy in the Smallpox epidemic will be best illustrated by the following figures :—

Out of the 101 cases of Smallpox occurring in 1903, 47 or 46.5 per cent. occurred in common lodging houses, the casual ward of the Workhouse, and in the Prison, and the most of these cases were vagrants or persons associating with vagrants.

The disease was introduced afresh into the City by the same class on at least 27 different occasions.

The same thing has happened in Wakefield during previous epidemics. In the annual report of the Medical Officer of Health for 1893, Dr. Wade, commenting on the epidemic of that period, writes: "I have several times been upon the point of reporting the City to be clear, but fresh cases have been imported from other districts by tramps." In his reports for the years 1888 and 1885, Dr. Wade also alludes to the agency of the tramp in spreading Smallpox. In view of the serious danger to the community from the spread of Smallpox by these nomads, not to speak of the expense incurred in grappling with an outbreak, the powers of sanitary authorities for dealing with them ought to be materially increased. In the event of a case of Smallpox occurring in a common lodging house, casual ward, or similar place, the Sanitary Authority ought to be endowed with statutory power to detain and keep under observation all contacts until the incubation period is well over, as well as to provide for thorough disinfection of their clothes and persons. I am also of opinion that re-vaccination of these contacts should be made compulsory. No common lodging house should be registered unless it is of the model type, is provided with a bath-room and an isolation room, and is also under efficient management. The management is an important point, for even with



strong legal powers it would be very difficult to enforce them in the low class lodging house, where the keeper seldom gives the Sanitary Authority any active assistance.

I have remarked on the comparatively few secondary cases that have occurred during the epidemic. This, I believe, is due to the fact that in common lodging houses a very considerable proportion of the inmates have at one time or other been in Prison or the Workhouse, where re-vaccination is compulsory, or have been in the Army, where also re-vaccination is enforced.

Then, again, Wakefield is to be considered a well-vaccinated town, as will be seen from the vaccination table at the end of the report, and during the epidemic re-vaccination was carried out extensively. It is, however, highly desirable that re-vaccination at the age of 12 years should be made compulsory, for it is now recognised that the protective power of vaccination diminishes in time unless reinforced by re-vaccination. With systematic vaccination and re-vaccination, Smallpox could practically be abolished from our country, and an endless amount of suffering, mortality, and expense saved us.

### SCARLET FEVER.

108 cases were notified during the year, with the following monthly distribution :—

January ... ..	4 cases.	July ... ..	10 cases.
February ... ..	6 „	August ... ..	15 „
March ... ..	2 „	September ... ..	15 „
April ... ..	9 „	October ... ..	12 „
May ... ..	4 „	November ... ..	13 „
June ... ..	2 „	December ... ..	16 „

The attack rate is 2.5 per 1,000 living, and the case mortality (2 deaths) is 1.8 per cent. The average number of cases notified during the past ten years is 145.

Notwithstanding the fact that only 4 cases (3.5 per cent.) were isolated in hospital, both the prevalence and mortality of disease are comparatively low. The prevalence would be still more reduced if we could get hold of the mild and unrecognised cases that go about spreading the disease. The disease seems of late years to be losing its virulence, and mild cases, often undistinguishable from a cold to the eyes of the mother, are getting more and more common. These children continue to go to school and play with their fellows, and though apparently well or but slightly indisposed themselves, they may give rise to severe attacks in others. Frequent inspection of scholars, particularly of sick absentees unattended by a doctor, will often discover such cases, and provide for their proper treatment and isolation.



## DIPHTHERIA.

19 cases were notified in the year, with the following monthly distribution :—

January ... ..	2 cases.	July ... ..	0 cases.
February ... ..	0 „	August ... ..	5 „
March ... ..	1 „	September ... ..	0 „
April ... ..	4 „	October ... ..	0 „
May ... ..	0 „	November ... ..	1 „
June ... ..	2 „	December ... ..	4 „

The attack rate is .45 per 1,000 living, and the case mortality (1 death) is 5.2 per cent. The average number of cases notified during the last 10 years is 23

I would like here to point out the value of Diphtheria Antitoxin, both in the treatment of the disease and as a prophylactic. It often happens that medical men are unable to administer this remedy owing to the poverty of their patients, and many Corporations now gratuitously provide medical men with Antitoxin for use in such cases. Apart from curative benefits the timely administration of the Antitoxin to all the members of a family where a case of Diphtheria has occurred will often protect them from the disease.

## ENTERIC FEVER.

30 cases of Enteric or Typhoid Fever were notified during the year. The attack rate is .7 per 1,000 living, and the case mortality (8 deaths) is 26.6 per cent.

The average number of cases notified during the past ten years is 48.

The monthly distribution is as follows :—

January ... ..	4 cases.	July ... ..	5 cases.
February ... ..	6 „	August ... ..	2 „
March ... ..	0 „	September ... ..	3 „
April ... ..	2 „	October ... ..	2 „
May ... ..	1 „	November ... ..	1 „
June ... ..	5 „	December ... ..	4 „

The cases occurred in the following localities :—

Asylum (11 cases).  
 Workhouse (2 cases).  
 Carlton Street.  
 Bethel Place, Thornes Lane.  
 Church Street (2 cases).  
 Pilkington Street.  
 Stanley Road  
 Eastmoor Road.  
 Smith's Buildings, Eastmoor.  
 Wynn Street, Eastmoor.  
 Northgate.  
 Providence Street.  
 Cheapside.  
 West Riding Court House (2 cases).  
 Westfield Grove.

The well-known connection between Enteric Fever and conditions of defective drainage has been well illustrated in some of these cases. In the house where one case occurred the following state of affairs was found :—The sink pipe, situated in a deep cellar-kitchen, was untrapped and not disconnected from the drain, which, entirely unventilated, ran under the kitchen floor to join an unventilated sewer. Sewer air could be distinctly smelt in the kitchen. Further, when the drains were taken up, the pipes were found to be clay-jointed, and quite pervious to sewage. The rain conductor was also directly connected to the drain, and acting as an outlet for the foul air of the drain and sewer had an open joint immediately under the bedroom of the house. A similar state of affairs was found in other houses in the same block, and, needless to say, the drainage here has since been put into good sanitary condition.

A good deal of attention has recently been paid to shellfish as carriers of typhoid infection. From inquiries made amongst fishmongers in the City, I understand that no shellfish from known polluted layings are being sold here, and I have not been able to trace any cases of typhoid fever to this source. At present, however, shellfish of all kinds should be regarded with suspicion.

#### MEASLES.

Measles caused 19 deaths during the year. The death-rate is .45 per 1,000 living. The average number of deaths during the past ten years is 14. In the latter months of the year it assumed epidemic form amongst young children.

The deaths occurred in the following months :—

August	...	...	...	...	1
September	...	...	...	...	0
October	...	...	...	...	1
November	...	...	...	...	9
December	...	...	...	...	8
					—
					19
					—

4 of the deaths were under one year, and 15 between 1 and 5 years. The deaths occurred in the following localities :—

Piccadilly.  
 Barratt's Yard, Northgate (2 deaths).  
 New Street.  
 Warrengate.  
 Parker's Yard, Pincheon Street.  
 Spurr Hill, Pincheon Street.  
 Providence Street.  
 Dispensary Yard, Northgate.  
 Denby Dale Road.  
 Nelson Street (2 deaths).  
 Hudson's Yard, Savile Street.



Volunteer Yard, Kirkgate.  
 Land's Yard, Northgate.  
 Scarborough Street, New Scarborough.  
 Basford Street, Dewsbury Road.  
 Old Crown Yard, Northgate.  
 Avison's Yard, Kirkgate.

Measles is not a notifiable infectious disease, and the health department is mainly informed of its prevalence by the death returns or by inquiries at schools. Practically nothing is done by the Sanitary Authority to stay the spread of the disease or to diminish the mortality, although it now proves to be a much more fatal disease than Scarlet Fever, over the control of which so much trouble and money is spent. In former times, Scarlet Fever was similarly neglected, and the number of deaths from this disease was enormous, far exceeding that of Measles. Since Scarlet Fever came under sanitary control, the death-rate has steadily fallen, whereas that of Measles has remained unabated. This is clearly demonstrated in the following table:—

TABLE SHEWING FOR ENGLAND AND WALES THE ANNUAL RATES OF MORTALITY PER 1,000 PERSONS LIVING AT ALL AGES IN GROUPS OF YEARS FROM 1851 TO 1900, FROM SEVEN ZYMOTIC DISEASES.

	1851-60	1861-70	1871-80	1881-90	1891-1900
Smallpox ... ..	0.22	0.16	0.23	0.04	0.00
*Measles ... ..	0.41	0.44	0.38	0.44	0.41
Scarlet Fever ... ..	0.88	0.97	0.72	0.33	0.16
Diphtheria ... ..	0.11	0.18	0.12	0.16	0.26
*Whooping Cough ... ..	0.50	0.53	0.51	0.45	0.38
"Fever" ... ..	0.91	0.88	0.48	0.23	0.17
*Diarrhœa ... ..	1.08	1.08	0.93	0.67	0.71

\* Notification, isolation, and disinfection not general for these diseases.

There can be no question of the advisability of the Sanitary Authority dealing more actively with this disease. Measles is a malady common to all classes of the community, but it is seldom fatal, except in the homes of the poor, where ignorance and neglect on the part of the parents is associated with insanitary surroundings. This is obvious on referring to the list of localities given above. The pernicious belief that every child must have Measles at some time or other must be eradicated from the minds of these people. They must be taught that unless the patient is properly treated and cared for, Measles is a serious and highly fatal disease, and that the child must be kept away as much as possible from the other unaffected children. The apathy with which these people regard Measles is astounding, and the way they often neglect and expose their children suffering from the disease is not far removed from the criminal. Often they do not call in a doctor till serious symptoms develop, and even then his instructions are frequently



ignored. I was told recently by a medical man of a case he had been attending. The child was suffering from Measles, and threatened with pulmonary complications. He gave explicit directions as to the nursing, and emphasised the importance of chills being avoided. What did the mother do? She took the child with her to the Market on a cold Saturday night, and, needless to say, in a few days' time the child was dead.

I would therefore strongly recommend that the Sanitary Authority take measures to deal with this disease. I do not advise that it be made a compulsory notifiable disease, but arrangements might be made with the Education Authority whereby all absentees from schools on the plea of Measles would be notified immediately to the Health Department, and in this way the bulk of the cases would be brought under our notice. Visits would then be made to the houses in question, advice given as to the precautions that ought to be taken, and in cases where no medical man was attending the diagnosis of the parents could be confirmed or otherwise. Contacts would be excluded from schools, and disinfection carried out as often as possible. When the disease is prevalent this would mean a great increase of work in the Health Department, but it is work which, in my opinion, is urgently called for.

### WHOOPIING COUGH

caused 13 deaths. The death-rate is .3 per 1,000 living. The average number of deaths from this disease during the past 10 years is 11.5. The deaths are pretty uniformly distributed over the year, and occurred in localities similar to those mentioned under Measles. Most of the remarks that have been made in connection with Measles apply with equal force here, and a system of school notification would be calculated to do much good.

### ZYMOTIC DIARRHŒA.

There were 12 deaths from this disease during the year. The death-rate is .28 per 1,000 living. The average for the past 10 years has been .35. The deaths occurred in the following months:—

July ...	...	...	...	...	2
August ...	...	...	...	...	1
September ...	...	...	...	...	5
October ...	...	...	...	...	4
November ...	...	...	...	...	0
December ...	...	...	...	...	0
					—
					12
					—

Ten were under 1 year, and 2 between 1 and 5 years.



The deaths occurred in the following localities :—

Union Square, Kirkgate.  
Epsom Place, Primrose Hill.  
Providence Street.  
Industrial Street.  
Rhodes Yard, Kirkgate.  
Mollacree's Yard, Kirkgate.  
Greenhill Road.  
Moxon Square, Eastmoor Road.  
Chapel Yard, Stanley Road.  
Pinderfields Road.  
Bradford Road.  
Bishopgate.

Zymotic Diarrhoea is an acute and highly fatal disease affecting young children, and usually associated with insanitary conditions and improper feeding. It has a close relation to meteorological conditions, mostly prevails between July and October, and reaches its height when the summer is hot and dry. A cold wet summer checks the incidence of the disease, by checking the development of the microorganisms that directly cause the disease. These microorganisms breed in organic matter on the surface or superficial layers of the soil, and pollution of the soil or accumulation of decomposing matter is necessary for their propagation. Further, any irritative condition of the alimentary system produced by improper feeding favours the development of the disease when once the microorganism has obtained entrance into the body of the child.

The prevalence of this disease is a serious reflection on the sanitary state of any town. It is by far the most fatal zymotic disease of infancy, and yet with proper sanitation and proper feeding of infants it would probably be almost wholly eliminated from our bills of mortality. The comparatively few deaths from this disease in Wakefield in 1903 is due to the prolonged and heavy rainfall and the low temperature prevailing during the summer. With a reverse meteorological state of affairs, we would probably have had a much higher death-rate from diarrhoea. I would, therefore, seriously direct your attention to the measures that ought to be taken to meet this scourge of infant life.

- I. Measures to improve the sanitary state of the dwellings and surroundings of the poor. Thorough cleanliness, both within and without the house, are all important. There should be frequent removal from the vicinity of dwellings of all refuse and matters likely to decompose, and privies and tub-closets should give place to water-closets. And I would emphasise the importance of the proper paving of all yards, alleys, and open spaces around the houses of the poor, and, when once paved or asphalted, the frequent flushing, particularly in the summer, of their surface. In other places a steady decrease in the diarrhoeal mortality has been noticed since the introduc-



tion of flushing as a chief means of cleansing yards and courts. But you must first pave, and the present condition of many of our yards is most insanitary. Unpaved or badly paved, covered with depressions for the retention of stagnant water, saturated with decomposing organic matter and littered with refuse, these yards are both the playgrounds of the children and the breeding places of the germs of disease.

- II. Mothers should be educated as to the proper feeding and general care of infants, and as to the necessity of keeping their houses clean and keeping their food under wholesome conditions. These things should be drilled into the elder girls in school, and should form part of systematic instruction in elementary hygiene. Women sanitary inspectors, too, have proved, in many places, of great service in educating ignorant mothers in these important matters.

### PHTHISIS

has caused the death of 58 residents during the year, and gives a death-rate of 1.3 per thousand living. The average number of deaths during the past five years has been 55.

The deaths occurred in the various Wards as follows :—

Alverthorpe Ward	...	...	7
North Westgate	„	...	6
South Westgate	„	...	4
St. John's	„	...	8
Northgate	„	...	11 including 1 in Asylum.
Kirkgate	„	...	4
Primrose Hill	„	...	11 including 6 in Workhouse.
Calder	„	...	7
			—
			58
			—

Nearly one-fourth of the total deaths in the West Riding Lunatic Asylum were due to phthisis (54 out of 224), giving a death-rate of 30 per thousand of the Asylum population. Exactly half of the resident deaths from phthisis took place during the most active and useful period of life, that is between 25 and 65 years of age.

### NOTIFICATION OF PHTHISIS.

Under the system of voluntary notification by medical men (a system that has now been in force for 3 years), 50 cases of phthisis were notified to the Medical Officer of Health during the year. 52 notifications were received, but 2 of these were re-notifications. Of the 50 cases, 29 were in the Workhouse, 5 in the Asylum, and 16 in private dwelling houses.



On receipt of a notification of Phthisis the Medical Officer visits the house, gives advice as to the precautions that ought to be taken to prevent the spread of the disease, and notes such insanitary conditions that admit of remedy. On the removal, or after the death of a case, disinfection is carried out, when the consent of the occupier is given, and this is but seldom refused. A leaflet, drawn up as follows, is left at each house:—

## “ C I T Y   O F   W A K E F I E L D .

### “ P R E V E N T I O N   O F   P H T H I S I S .

“ This memorandum is issued by the Sanitary Authority of the City of Wakefield for the guidance of those suffering from Phthisis or Consumption, and those living with or having charge of such patients. It is to be hoped that the carrying out of the following precautions may do much to diminish the spread of this disease, which is an infectious one, and nearly always conveyed from person to person by means of the spit or the air breathed. The expectoration or spit of a phthisical person swarms with the exceedingly minute microbes that cause the disease, and when such spit becomes dry it is blown about the air as dust. Such dust breathed into a healthy lung may set up the disease, and this is the most common way in which phthisis is acquired. To a much smaller extent it may be conveyed by milk, meat, or other food containing the microbes.

“ The one great method by which the spread of phthisis is to be diminished is the prevention of all spit being allowed to dry and turn into dust, and its destruction or removal from proximity to human beings. Your attention is therefore earnestly called to the following recommendations:—

“ 1.—Never spit or expectorate on the floor or on the street, and never into your handkerchief. Always spit into a spittoon containing a little water, or, better still, a little disinfectant, and from time to time pour a little disinfectant on the matter in the spittoon. Empty the contents into the pan of the water closet, and then scald the spittoon with boiling water. An ordinary cup lined with paper to facilitate cleansing may be used, if no proper spittoon is obtainable. Pocket spittoons, constructed so as to prevent spilling of contents, should be carried when out of doors, and should be used on every occasion. In an emergency spit into a piece of rag (which should always be ready in the pocket), and burn as soon as possible. If by accident expectoration is spilled on the floor or other place it should be immediately wiped up by a piece of moist rag and burnt. The place should then be washed over with some disinfectant.

“ 2.—If affected with a dry cough (without spit) always cough into a piece of rag and burn it.

“ 3.—Never swallow expectoration, as it may cause disease in other parts of the body.



" 4.—Phthisical persons should be clean shaven, as the moustache or beard is apt to get soiled with expectoration and harbour the microbes of the disease. They should avoid kissing.

" 5.—No cup, fork, spoon, napkin, towel, or other article used by the patient should be used by anybody else, and they should be disinfected by boiling from time to time (or by immersion in a disinfectant, and then rinsing well in water).

" 6.—Phthisical persons should sleep by themselves, and, if possible, have a room for their sole occupation. This room should be the one most exposed to sunlight.

" 7.—They should see that the rooms are as well ventilated as possible, as fresh air is of the utmost importance both in the prevention and cure of the disease. If there is no better means of admitting fresh air, the lower sash of the window may be raised about three inches, and a piece of wood fitted underneath. A current of air will then pass into the room between the two sashes, and will cause no draught. The windows should be kept open more or less both day and night unless the medical attendant should direct otherwise. When the room is unoccupied the windows and doors should be kept wide open. The fireplaces should not be covered over, but kept open for the purpose of allowing a current of air to pass up the chimney. This circulation of air will be increased by a fire.

" 8.—There should be no carpets, mats, curtains, antimacassars, or other unnecessary articles calculated to accumulate dust in the patient's room.

" 9.—The room should always be dusted with a damp cloth. The floor should never be swept in the ordinary way with a brush, but it should be cleansed with a damp cloth, and (along with the furniture) frequently washed with soap and water. The house generally should be kept scrupulously clean and fresh.

" 10.—Bed and body clothing should be well boiled or soaked in disinfectant before being washed or before being used by any other person.

" 11.—A phthisical person should refrain from entering a crowded room or place of entertainment, and he should not engage in any employment where dust is produced.

" 12.—On ceasing to occupy a room or house, the room, bedding, and all contents should be disinfected, so as to thoroughly destroy any trace of disease left behind. Nothing should be removed from the room until it is disinfected. Disinfection will be carried out free by the Sanitary Authority, if request is made to the Medical Officer of Health, Town Hall, Wakefield. To facilitate this, a stamped and addressed postcard will be left at every house where a phthisical person is known to be living, and on this being signed by the occupier and forwarded to the Medical Officer of Health, disinfection will be carried out.



"After disinfection the room should be kept as long unoccupied as possible, and the windows and door opened wide every day. The walls, floor, and furniture should be washed over with disinfectant, and then thoroughly cleansed. The ceiling should be whitewashed, the wallpaper stripped off, and walls re-papered.

#### DISINFECTANTS.

"A reliable disinfectant is Carbolic Acid, made by mixing 8 ounces of pure carbolic acid with a gallon of water. Carbolic acid is very poisonous, and great care should be exercised in its use. It should be kept in a poison bottle, properly labelled and locked up. Izal is also a reliable disinfectant, and not so dangerous as carbolic acid. It is made by mixing one ounce of pure Izal with a gallon of water (or one teaspoonful with a pint of water). Persons too poor to purchase disinfectants will be supplied with them at the Sanitary Dépôt, Warrengate, on presenting a written request from the Medical Attendant, or on making personal application to the Medical Officer of Health at the Town Hall between 9 and 11 a.m.

"Health Department,

"Town Hall, Wakefield."

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The prevention of Tubercular Disease, of which Phthisis is the chief, is at present the most serious problem that preventive medicine has to grapple with. A glance at the diagram illustrating the relative importance of some of the causes of death in Wakefield in 1903 will shew that Tubercular Diseases come second in the series, while Phthisis alone comes third. Other infectious diseases occupy a much less prominent place. Phthisis alone accounts for one-twelfth of all our deaths, killing 1 in every 700 of the population, and causing a rate of sickness probably five times that of the mortality. Yet we know for certain that the cause of the disease is a definite micro-organism, and that this micro-organism swarms in the expectoration or spit of phthisical patients, and that in most cases the disease is acquired through inhaling the dust of dried up expectoration. It is also highly probable that the same micro-organism occurs in the organs and flesh of tubercular animals, and in the milk of cows with tubercular udders, and that in a proportion of cases, the disease is conveyed to man by the food he eats and drinks. We also know that besides the active cause—the micro-organism—there are causes that predispose to the disease and favour its development, and of these ill-lit, ill-ventilated, damp dwelling houses, a polluted atmosphere, unhealthy occupations, and intemperate habits are the chief.

The measures that a Sanitary Authority ought to take in dealing with this scourge are clearly indicated by these remarks.



Firstly, the direct means of infection should, as far as possible, be destroyed or prevented entering the human body, and there can be no doubt that the expectoration or spit is far and away the chief means by which the disease is disseminated. By notification (which will, I hope, become more and more complete) we will be able to get at a considerable number of cases, and impress upon them (or those having charge of them) the importance of destroying or sterilising the spit. But something more is wanted, and I am strongly of opinion that a Bye-law should be made prohibiting spitting in the streets and public places, in public carriages, and in all places of public assemblage. A Bye-law made by the West Riding County Council came into force last November, and reads as follows:—

“No person shall spit on the floor, sides, or surface of any public carriage, or of any public hall, public waiting-room, or place of public entertainment, whether admission thereto be obtained upon payment or not. Any person offending against this Bye-law shall be liable to a fine not exceeding £5.”

This Bye-law does not apply to the Municipal Boroughs in the West Riding, and so it is inoperative in Wakefield. It does not require more than a cursory glance at the pavements of our streets to see how prevalent is this disgusting and dangerous habit of promiscuous expectoration, and to shew how desirable it is to have a similar or even more comprehensive Bye-law made in our City.

Again, for the same purpose, namely, the prevention of the spread of Tuberculosis, a system of more thorough meat inspection is required. During 1903 only one carcase of diseased meat was seized, and it was a very bad tubercular one, discovered on a casual visit to a slaughter-house. I have little doubt, had it not been intercepted, it would have been sold for the food of man, and one can only imagine how many others have been undetected. Systematic veterinary inspection of milch cows in cowsheds within the City should also be made, for tubercular disease of the udder is a fairly common one, and milk from udders so diseased is capable of giving rise to abdominal Tuberculosis in children and other forms of Tubercular disease. In the Edinburgh Municipal Abattoir during the year 1899, 11.4 per cent. of the cows brought there for slaughter were found suffering from Tuberculosis, and 2.6 per cent. had Tuberculosis of the udder. I may here mention that although Robert Koch, the great German bacteriologist, has declared that Tuberculosis in man and Tuberculosis in cattle are different diseases caused by different micro-organisms, the majority of scientific workers are of opinion that they are one and the same disease, caused by one and the same micro-organism. At the present time the subject is being investigated by a Royal Commission, and, pending the report of that Commission, I do not think we are justified in relaxing our efforts to prevent the consumption of Tubercular tainted food.

Secondly, the indirect or predisposing causes of Tuberculosis should be met by the provision of dry, well-lit, and well-ventilated houses for



all classes of the population, and by the gradual abolition of those damp, dark, and foul-aired houses that crowd the narrow yards leading off some of our principal streets. Sanatoria and open-air methods of the treatment of Phthisis are now receiving great attention and meeting with considerable success, but the good conferred by them upon our phthisical poor will be largely nullified by the insanitary conditions under which they have to live on returning to their homes. So far as the poor are concerned, the money spent on sanatoria will, to a large extent, be wasted, so long as unhealthy conditions of home life are permitted to exist.

A strict enforcement of the Factory and Workshop Act (1901) will do much to improve the general health of the workers and diminish the risks from unhealthy occupations.

Here, also, I would point out the desirability of teaching the senior pupils in our schools the rudiments of personal and domestic hygiene. Every child that left school with a strong belief in the value of fresh air and sunlight in the home, would do something to further the crusade that is being waged against this fell disease.

#### FEVER HOSPITAL ACCOMMODATION.

The Corporation Fever Hospital is situated in Park Lane, and was opened in 1877. It was built as a Smallpox Hospital, but in the absence of Smallpox, and with the consent of the Local Government Board, it has been used for the isolation of Scarlet Fever, Diphtheria, and Typhoid Fever cases. The main building is a brick structure, and consists of two wings, with an administrative block between. Each wing comprises two wards, each accommodating 7 beds, and is provided with the usual sanitary conveniences. In 1888, when a severe epidemic of Smallpox was raging, an addition in the form of a galvanised iron building was erected. This consists of two wards, each accommodating 6 beds.

The total accommodation of the hospital is, therefore, 40 beds.

There are also a mortuary, a laundry, steam disinfecter, and an ambulance house.

During 1903 the hospital has been used solely for the isolation of cases of Smallpox. Cases of infectious disease occurring in Alverthorpe Ward are isolated in the Carrgate Fever Hospital. Up till 1900 this district was in the Wakefield Rural District, which is served by the Joint Hospital at Carrgate, and when Alverthorpe came into the City it was arranged that the hospital provision then in existence should continue at least for a time. During 1903, 2 cases of Smallpox and 3 cases of Scarlet Fever, occurring in Alverthorpe, were isolated at the Carrgate Hospital.

On the 13th May, 1903, the County Council of the West Riding of Yorkshire made an Order constituting the City of Wakefield, the Urban Districts of Ardsley (East and West), Horbury, Methley, Rothwell, Sandal Magna, and Stanley, and the Rural Districts of Hunslet and



Wakefield into a united district, to be styled The Wakefield and District Smallpox Isolation Hospital District. The Urban District Councils of Ardsley (East and West), Sandal Magna, and Stanley, and the Rural District Council of Wakefield having appealed against this Order, a Local Government Board inquiry concerning the same was held at the County Hall, Wakefield, on the 29th September, 1903. The Chairman of your Sanitary Committee and your Medical Officer of Health attended the inquiry, and gave evidence. The decision of the Local Government Board has not yet been published.

#### PROPOSED NEW FEVER HOSPITAL FOR WAKEFIELD.

The Corporation having decided to build a Fever Hospital for the isolation of cases of Infectious Disease other than Smallpox, negotiations for the purchase of a site were entered upon, and finally a site of 14½ acres, situated in Alverthorpe, was fixed upon. Application was made to the Local Government Board for sanction to borrow £2,250 for the purchase of the land, and on 1st December, 1903, the Board held an inquiry at the Town Hall concerning the same. Before the end of the same month, the Local Government Board issued their sanction for the borrowing of the money.

The Corporation have now entered into possession of four acres of the land bought, and will come into possession of the remainder in two years' time. The site is admirably adapted for the purposes of a Fever Hospital, and the four acres now available are ample enough for present needs.

#### DISINFECTION.

During the last six months of the year 103 houses were disinfected after infectious disease, and the infected bedding, etc., was disinfected at the Steam Disinfector at the Fever Hospital. The articles removed for disinfection by steam comprised:—

Mattresses	...	...	88	Bed Ticks	...	...	172
Blankets	...	...	236	Carpets	...	...	211
Sheets	...	...	231	Curtains	...	...	30
Pillows	...	...	215	Other Articles	...	...	293

#### BACTERIOLOGICAL EXAMINATIONS.

Bacteriological Examinations are now of the greatest assistance in the diagnosis of certain infectious diseases, and also in deciding when a patient is free from infection. All specimens sent to the County Council Bacteriological Laboratory from the Administrative County are examined and reported on free of cost, and outfits for collecting and sending the specimens are to be had at my office.

I take this opportunity of drawing the attention of the medical practitioners in the City to the facilities provided for Bacteriological Examinations, and I would particularly urge the importance of having such examinations made before declaring a case of Diphtheria or Typhoid Fever free from infection.



During 1903 the following specimens were sent to the Laboratory from Wakefield :—

Diphtheria	...	...	...	68
Sputum (for tubercle bacilli)	...	...	...	26
Enteric Fever (Widal Reaction)	...	...	...	4

### SLAUGHTER-HOUSES.

There are 26 Slaughter-houses in Wakefield, including the Corporation Slaughter-house. It would appear that 17 of these are unlicensed and unregistered, and are therefore occupied in contravention of the Public Health Act, 1875.

I have visited all the Slaughter-houses, and find that many do not comply with the requirements of your Bye-laws. At the time of my visit the following defects were noted :—

Number with Structural Defects	...	...	6
„ „ Drainage	„	...	4
„ „ Ventilation	„	...	4
„ without Proper Offal Receptacles	...	...	15
„ with Badly Paved Yards	...	...	5
„ with Inadequate Water Supply	...	...	2
„ not Cleanly Kept	...	...	8

Some are objectionable because of their situation with regard to dwelling-houses, and in one or two the slaughtering can easily be seen by passers-by in the street or yard.

Considering the general unsatisfactory condition of private Slaughter-houses in the City, and the fact that the Corporation now possesses a Municipal Abattoir, I would strongly recommend that Section 28 of the Wakefield Corporation Market Act, 1900, be put into force. This Section reads as follows :—“ So long as the Corporation shall provide sufficient Slaughter-houses for the accommodation of the City, no person shall slaughter or dress any cattle, beast, sheep, or swine for sale in any place within the City other than in one of the Slaughter-houses transferred to or provided by the Corporation, and if any person acts in contravention of this Section he shall be liable to a penalty not exceeding £5 for every such offence.”

From a public health point of view there can be no doubt that this is most desirable. Indeed it is only when slaughtering is confined to an establishment under municipal control that efficient meat inspection can be carried out. As long as the private Slaughter-house system prevails, such an important matter as meat inspection can only at best be casual and unsatisfactory. I have already mentioned that only one carcase of diseased meat was seized during the year. There can hardly be a doubt—considering the considerable percentage of diseased carcasses seized in towns where there is thorough meat inspection—that much diseased meat is sold in Wakefield. It is often difficult to recognise diseased meat after it is dressed, and all carcasses should be inspected by a qualified man at the time of slaughtering.



## DAIRIES, COWSHEDS, AND MILKSHOPS.

The sanitary condition of these places is provided for in the Contagious Diseases (Animals) Acts, 1878-1886, and under these Acts, Orders have been issued by the Local Government Board in 1885 and 1886 and 1899. Authorised by these Orders, the Wakefield City Council in 1899 made Regulations with respect to Dairies, Cowsheds, and Milkshops within their district. As I shall mention later, I think it most desirable that these Regulations should be amended in at least one important respect.

There are registered :—

- 27 Cowkeepers, Dairymen, and Purveyors of Milk.
- 15 Dairymen and Purveyors of Milk.
- 17 Purveyors of Milk from districts outside the City.

## COWSHEDS AND DAIRIES.

I have personally visited all the Cowsheds and Milk Stores in connection with them.

Few of them can be regarded as entirely satisfactory, the chief defects being bad ventilation, overcrowding, and cows kept in a dirty condition. It will always be difficult to ensure proper ventilation in Cowsheds so long as the ventilating openings are allowed to be placed haphazard and in such position as to cause a draught on the animals. If the openings are properly placed and properly constructed, and the Cowsheds are not overcrowded, the air can be kept perfectly fresh, and without causing draughts or interfering with the secretion of milk.

Many of the Cowsheds are grossly overcrowded. Fifteen out of the 27 were undoubtedly overcrowded, some only having between 300 and 400 cubic feet per cow. I understand that considerable difficulty has been found in dealing with this overcrowding, inasmuch as the Regulations in force only specifies a minimum cubic space—800 cubic feet—for Cowsheds where the animals are kept indoors all the year round. But as all the cowkeepers in Wakefield turn out their animals to graze in the summer and turn them out in winter for at least a portion of the day (usually an infinitesimal portion), this standard has never applied. It is however, no reasonable argument to say that because cows are out in the fields in summer they should be grossly overcrowded in the winter. I would strongly recommend that the Regulations be amended so as to provide a standard cubic space for cows in these Cowsheds. This standard ought to be 800 cubic feet per cow, and certainly it should not be less than 600 cubic feet.

I have mentioned the dirty condition in which many of the cows are kept. So dirty were these animals—their hind quarters and, in one or two instances, the udders plastered thick with excreta, that it is simply impossible that they could be milked without grossly contaminating the milk. On drawing one dairyman's attention to this matter, he assured me that the milk was carefully strained, and with no little pride shewed me the sieve well covered with dirt and debris! One can only imagine



what potentialities for disease may have passed through the meshes of that sieve. I am also certain that cleansing of the hands of milker and of the teats of the cow is often not carried out. Indeed, several of the milkers candidly admitted that they never did wash their hands or the teats. I do not remember seeing a basin of water or a towel in any of these Cowsheds, and indeed the general appearance of some of the milkers suggests that they but seldom use these articles for any purpose. Surely it is imposing no hardship on any cowkeeper if he is required to groom his cows regularly, and do the milking under scrupulously clean conditions. The Regulations provide for milk being stored and distributed without undergoing contamination, but it is just as important that it should not be contaminated before it leaves the Cowshed. Little good will be gained from Regulations as to structure of Cowsheds and things of that sort as long as the milk itself is permitted to be fouled in such a gross manner as daily occurs in the Cowsheds as I have referred to. The purity of our milk supply should be guarded not less jealously than the purity of our water supply.

In the earlier part of the year a Sub-Committee appointed by the Sanitary Committee visited all the Cowsheds in the City, and made a report to the Sanitary Committee on the 25th of March, 1903. This report states that few of the Cowsheds were found conforming to the Regulations, and in the case of 15 of them certain alterations, etc., were recommended. These alterations have since been carried out. They further found the premises of 4 cowkeepers to be totally unfit for the keeping of cows. Two of these have been, since that report, altered and improved, but the other two remain in exactly the same condition as they did at the time of the visit of the Sub-Committee. I thoroughly endorse the finding of the Sub-Committee, and consider that these Sheds are quite unfit for the keeping of dairy cows. I ought to mention that in one or two instances, dairy cows were found in Sheds that have never been registered.

### COMMON LODGING HOUSES.

There are 25 premises registered as Common Lodging Houses, containing 676 beds and providing for 782 lodgers. I have personally visited these Lodging Houses, and I must say that the condition of many of them is most unsatisfactory, and not more than four can be deemed quite satisfactory. At least six are quite unfit for occupation as Common Lodging Houses. Overcrowding was noticed in several instances, and by this I mean an excess of inmates over the number for which the bedrooms are registered. This is a serious matter, as the statutory limit of 300 cubic feet per head is itself a very low one. It is also common to use double beds for men, which is a contravention of the Bye-law prohibiting two persons of the male sex over 10 years of age occupying the same bed. In some of the bedrooms the registration cards, recording the number of inmates allowed, were absent. Although many of the houses provide rooms for married couples, in only one instance did I find the partitions between the beds, as required by the Bye-laws, and in most



cases there were no partitions of any kind. In a few cases the rooms and bedding were dirty and ill kept. These were mostly in the older and structurally least suitable of the houses. As a rule, the ventilation in this class of house was very bad. In some cases there was no proper provision for personal washing, and in one instance I found dough being kneaded for bread in the one solitary basin possessed by the establishment!

In many cases no copies of the Bye-laws were to be seen, or were so defaced or dirty as to be illegible.

In Wakefield, Common Lodging Houses are registered with the Police.

### OFFENSIVE TRADES.

The Offensive Trades in Wakefield are :—

Tripe Boiling	...	...	...	4
Gut Scraping	...	...	...	1
Tallow Melting	...	...	...	1

No complaints concerning these trades have been received during the year.

In the case of tripe boiling no provision is made for the proper conducting away of the vapours from the boiler, and in every case the vapours escape through the interstices of the building, which is decidedly objectionable.

### FACTORY AND WORKSHOP ACT, 1901.

#### REPORT ON THE ADMINISTRATION OF THE ACT IN CITY OF WAKEFIELD DURING THE YEAR 1903.

"The Medical Officer of Health of every District Council shall, in his annual report to them, report specifically on the administration of this Act in workshops and workplaces, and he shall send a copy of his annual report, or so much of it as deals with this subject, to the Secretary of State." Section 132.

#### FACTORIES.

The duties of the District Council with regard to factories are confined to two matters, namely, to seeing that factories employing more than 40 workers are provided with adequate means of escape in case of fire, and to seeing that sufficient sanitary conveniences are provided in factories.

#### FIRE ESCAPES.

(a). Factories of which the construction was not commenced before 1st January, 1894, and which employ more than 40 persons, must be furnished with certificate stating that proper and reasonable means of escape in case of fire are provided, and specifying in detail the means of escape.



No certificates under this head were issued during the year.

(b). It is the duty of the District Council to ascertain from time to time whether all factories within their district employing more than 40 persons are provided with proper means of escape in case of fire.

I am not aware that anything has been done under this head during the year.

#### SANITARY CONVENIENCES.

It is the duty of the District Council to enforce Section 22 of the Public Health Amendment Act, 1890, with regard to the provision of sufficient and suitable accommodation in the way of sanitary conveniences in factories.

This has been done with regard to a steam laundry, where, under legal notice, increased accommodation has been provided.

#### WORKSHOPS.

The duties of the District Council with regard to workshops may be summarised as follows:—

1. To see that all workshops are kept in good sanitary condition.
2. To see that in workshops, where more than 40 persons are employed, proper means of escape in case of fire are provided.
3. To carry out the Regulations of the Act with regard to home work.
4. To carry out the Special Regulations with regard to Bake-houses.

There are 94 workshops (excluding bakehouses) on the Register, and represent the following 29 trades:—

Dressmaking	...	...	22	Upholstering	...	...	2
Millinery	...	...	15	Sack Making	...	...	1
Tailoring	...	...	15	Mat and Carpet Making	...	...	2
Bedding Making	...	...	1	Hosiery	...	...	3
Plumbing	...	...	1	Blacksmith	...	...	2
Chemical Works	...	...	1	Saddlery	...	...	3
Stone Mason	...	...	1	Rope Making	...	...	1
Joinering	...	...	5	Manufacturing Chemist	...	...	1
French Polishing	...	...	2	Cycle Making	...	...	1
Coach Building	...	...	2	Candle Making	...	...	1
Tinning	...	...	2	Grocer (Wholesale)	...	...	1
Brush Making	...	...	1	Bootmaking & Repairing	...	...	2
Cabinet Making	...	...	1	Picture Frame Making	...	...	1
Whitesmith	...	...	2	Wheelwright	...	...	1
Beer Bottling	...	...	1				

The above list is mostly compiled from information given by the Factory Inspector, and I am sure that a great many workshops are not included. It is the duty of the District Council to keep a register of all workshops situated within their district.



## SANITARY CONDITION OF WORKSHOPS.

The workshops are regularly inspected by the Sanitary Inspectors, and I have personally visited a good many of them. On the whole their state is fairly satisfactory. The outstanding defect is bad ventilation, particularly in tailor's work-rooms. The defective ventilation often arises from not utilising the means of ventilation provided, and this again is often due to the openings being so placed that they cannot be used without causing a draught straight on to the workers. Windows with sliding sashes are often the only inlets provided, particularly in tailor's work-rooms, and, as they open immediately on the workers, it is not surprising that they are usually kept closed. All work-rooms should have the upper part of the window adapted for falling inwards, so that the actual current of air will be deflected upwards, and not directly on to the workers.

### 2. FIRE ESCAPES.

No workshop in the City has more than 40 workers, and so the provisions of the Act with regard to fire escapes do not apply.

### 3. HOME WORK.

The Act provides that all occupiers of factories and workshops, or contractors employed by such occupiers in the business of factories and workshops, shall keep in a prescribed form lists of all out-workers employed by them (giving the names and addresses of the out-workers), and shall send copies twice a year (on or before 1st of February and 1st of August) to the District Council in which the factory or workshop is situated. The District Council must then cause inspection of the houses where the work is done, and take action if insanitary conditions or infectious disease exist therein.

No lists of out-workers have been received during the year. During the course of workshop inspection 5 occupiers of workshops were found employing out-workers, but they had only done so since the last date for notifying the District Council. No insanitary conditions were found in the houses where the home work was being done.

## BAKEHOUSES.

There are 31 bakehouses on the register, but 4 of these employ steam power, and come under the jurisdiction of the Factory Inspector. I have visited all the bakehouses, and, on the whole, their condition is satisfactory, though they require a good deal of surveillance to ensure their being kept in a cleanly condition.

With regard to registration of bakehouses, some difficulty has arisen from the fact that there are in the City a great number of people, who, though not bakers in the general acceptation of the word, do yet bake bread for sale, and are in the legal sense occupiers of bakehouses. They are mostly occupiers of small shops, and eke out their income by baking in their domestic oven more bread than they require for their own use, and this surplus they offer for sale. This class has not been put on the register, though, as far as possible, their houses



are inspected as to cleanliness. Where a special baking oven is used, or anyone outside the family is employed in baking, we regard it as a bakehouse, and put it on the register.

#### UNDERGROUND BAKEHOUSES.

Section 101 of the Act provides that no new underground bakehouse shall be allowed, and that all underground bakehouses already in existence shall not be permitted to continue in occupation after the 1st of January, 1904, unless they are certified by the District Council to be suitable as regards construction, light, ventilation, and all other respects.

There are 4 underground bakehouses in Wakefield, and these have all been visited by a Sub-Committee of the Sanitary Committee. This Committee recommended that certificates be granted in each case, provided certain structural alterations be carried out. These alterations have been done in one case, and the certificate to continue occupation issued.

#### ABATEMENT OF INSANITARY CONDITIONS IN WORKSHOPS AND BAKEHOUSES.

22 formal notices have been issued by the Sanitary Inspector and complied with.

Sink Wastes disconnected	...	...	...	4
Water Closets provided	...	...	...	5
Privies converted into Water Closets	...	...	...	3
Roofs and Floors repaired	...	...	...	2
Workshops limewashed	...	...	...	12

No legal proceedings have been necessary.

#### HOUSING OF THE WORKING CLASSES.

The house accommodation provided for working people may be divided into two classes, the houses occupied by the artisans and better class workmen, and the houses occupied by unskilled labourers and the very poor. The former, on the whole, may be considered satisfactory, while the latter cannot be deemed other than unsatisfactory. It is with the latter class that the Sanitary Authority has mainly to deal.

I have personally made a systematic house-to-house inspection of New Street, the yards in Kirkgate, and some of the yards in Westgate, besides visiting other houses to which my attention has been directed.

In the course of my systematic inspection, 272 houses were visited, and 122 sanitary defects were noted. The bulk of the houses were built back-to-back, or, at any rate, did not possess means of through ventilation. A great many of them are aggregated up narrow yards, where nothing like adequate air-space or light is to be obtained. Dilapidations and uncleanness go hand-in-hand, and neglect on the part of the tenants is as frequent as neglect on the part of the landlord. It must be admitted that while there are houses unfit to be dwelt in, there are also tenants unfit to occupy the houses. In any housing scheme for the poor, proper supervision will be as necessary as the provision of habitable houses.



Dampness is a most common feature in this class of property. In some of the yards hardly a dry house is to be seen, and many are very bad indeed. The dampness is often due to the absence of damp-proof courses in the walls, or because the soil abuts on the walls for some distance up. It is, however, very often due to defective roofs, defective gutting, or leaking rain conductors, and it is lamentable that such a serious danger to health as dampness should be so common, while it is, in many instances, so easily remedied. One would imagine that the landlord would, at any rate, be anxious to conserve his property, even if he was not interested in the health of his tenants.

While serious overcrowding was found in a few occasions, it is not so common as one would have expected. Still, overcrowding to a lesser degree is fairly common, and owing to the dearth of houses for the poor, it is a very difficult matter to deal with.

The number of adult persons (counting 2 children under 14 as one adult) per bedroom in the localities visited was as follows :—

New Street ... ..	2.5
Kirkgate Yards ... ..	2.3
Tidswell and Spawforth Yards ...	4

The average cubic capacity of a bedroom in this class of house is about 1,200 cubic feet.

The surface of many of the yards is bad, allowing the accumulation of water and offensive matters, and contaminating the soil with foul, organic matter. It is most desirable that the surface of the yards and curtilage generally of this class of property should be covered with impervious material, and regularly flushed with the hose pipe. In the course of my inspection the following yards were noted as being particularly bad, both as regards the houses and in other respects :—

Princess Yard, Kirkgate.
Mollacrees Yard, „
Volunteer Yard, „
Albion Yard, „
Bencroft Yard, „
Harrison Yard, „
Spawforth Yard, Westgate.
Tidswell Yard, „

I would seriously direct your attention to the question of provision of habitable houses for the poor. I think private enterprise will provide adequately for the better class of working people, for those who can afford at least 5s. a week in rent, but it is doing nothing, and will do nothing, for the poor, who can only afford to pay 2s. 6d. or 3s. These poor people are badly enough housed as they are, but the state of affairs will become, year by year, more serious. In my records I have noted house after house as on the verge of dilapidation, and no amount of patching up will save these houses from becoming absolutely uninhabitable in the course of a year or two. In the meantime the worst houses



will be certified as unfit for habitation, and the evicted tenants will pass into houses only a degree better than the ones they leave. Overcrowding will go on increasing, and in addition to all the dangers of overcrowding, property will more and more rapidly deteriorate. It is well known that no house goes to the bad more quickly than an overcrowded one. It is the legal duty of the Medical Officer of Health to certify to the Sanitary Authority all houses that are in his opinion unfit for human habitation, but in the present state of affairs he is often inclined to hesitate, feeling that although the houses are bad enough in all conscience, by getting them closed he may just be doing as much harm as good.

I am afraid there is only one solution of the problem, and that is the provision of cheap habitable houses by the Municipality, and the gradual demolition of slum property. The houses provided must be let at such low rents as the poor can pay, and so they must be erected as cheaply as is compatible with sound sanitation. I would particularly direct your attention to what is being done in Liverpool. The great feature of the Liverpool housing schemes (a feature unfortunately neglected in the schemes of many other towns) is that the houses are essentially designed for the very poor, and, although comfortable and healthy, nothing but what is absolutely necessary has been expended upon them. Consequently they can be let cheaply, and do provide for the people they are intended for. The rent of the cheapest house (2 rooms and scullery) is 2s. 6d. a week, and a proportion of larger houses is provided, the average rent being 1s. 5d. a room. Yet in certain of the tenement buildings the profit accruing will be sufficient to pay interest at 3 per cent. and repay the principal of the loan in 50 years.

Under the Housing of the Working Classes Act passed in 1903, the maximum period for repayment of loans has been extended from 60 to 80 years.

#### UNINHABITABLE HOUSES.

The following houses have been certified during 1903 as unfit for human habitation.

Address.	No. of Houses.	Remarks.
Alverthorpe ... ..	1	Made habitable
Irish Alley, Dewsbury Road ...	1	Closed.
Greenend ... ..	5	Closed.
Cross Lane ... ..	2	Closed.
Three Tuns Yard ... ..	4	Closed.

#### WATER SUPPLY.

Practically all the domestic water supply in the City is derived from the Corporation mains. There are a considerable number of wells, particularly in the outlying parts, but in only one case, so far as I know, is the well water used for domestic purposes.



The water supplied by the Corporation is moorland surface water derived from the Rishworth Moors, in the Parish of Halifax. The gathering-ground comprises some 2,737 acres, and with the exception of 150 acres grassland is wholly moorland. There is only one inhabited house in the whole expanse of the gathering-ground, and a source of surface water supply less likely to be polluted can hardly be imagined.

The water is collected into the Ringstone and Green Withens Reservoirs, the former covering 49 and the latter 46 acres. It is then conducted by a main, 21" in diameter, subsequently reduced to 18", and 17 miles long to the Ardsley Reservoir (59 acres), which is 4 miles from Wakefield. Here the water undergoes a certain amount of clarification by sedimentation, and it is then passed on to the filter beds at Kirkham. Here it is filtered through 3 feet of sand, and is chemically treated by the addition of lime and chalk (one grain of each to the gallon). The chemical treatment is necessary to neutralise the acidity and lead dissolving powers of the moorland water, and to obviate the risk of lead poisoning amongst the inhabitants. That the treatment is efficacious appears to be shewn by the fact that during the year no cases of lead poisoning have occurred that could be attributed to the water supply. It is, however, highly necessary that the water should be kept under the closest observation, and for this purpose Dr. Chaplin, the City Analyst, makes monthly examinations of the water, and his reports are furnished to the Waterworks Engineer and the Medical Officer of Health.

After filtration and chemical treatment the water is stored in a covered service reservoir, from whence it is conducted by gravitation to the City.

The following is a copy of the report made by Dr. Chaplin on an analysis of a sample of water drawn from a tap in a house in the City during 1903 :—

The sample contains in grains per gallon :—

Chlorides equal to Common Salt	...	...	...	1.6
Nitrogen as Nitrates and Nitrites equal to Nitric Acid	...	...	...	0.5
Poisonous Metals	...	...	...	None
Free Ammonia	...	...	...	0.0022
Albuminoid Ammonia	...	...	...	None
Oxygen absorbed by Organic and other Oxidisable Matter	...	...	...	0.01
Degrees of Hardness (each degree representing a soap destroying power equivalent to one grain of chalk per gallon)	...	...	...	5.
Total Dissolved Solid Matter	...	...	...	8.03
Suspended Matter	...	...	...	Very slight
Colour of Columns two feet in depth	...	...	...	Very pale yellowish tint
Smell when warmed to 100 deg. Fahrenheit	...	...	...	Very slight
Reaction	...	...	...	Alkaline

Dr. Chaplin comments on the Analysis as follows :—" The analysis shews the water to be in excellent condition, as regards freedom from organic matter. The proportion of dissolved solid matter has risen to



approximately the amount that was present during the period that the Soda treatment was in force. All the recent tests shew the Chalk and Lime treatment to be exceedingly effectual at the present time in removing the plumbo-solvent action of the Ringstone water, whilst the substitution of Lime for Soda must add very considerably to its value from the public health point of view."

The average daily supply to the City during the year has been 1,389,300 gallons, and the daily consumption per head has been 31.4 gallons, which includes trade supply by meter 11.2 gallons.

The bulk of the houses in the City have the water laid on, but in some of the older and poorer localities it is derived from stand-pipes. These stand-pipes are frequently placed at inconveniently long distances from some of the houses they supply.

### HOUSE REFUSE.

House Refuse is collected in privy middens, ashpits, galvanised iron and other receptacles, and is removed and disposed of by the Corporation. There are :—

1,428 Dry Ashpits.

1,680 Galvanised Iron Receptacles.

1,325 Tubs and other forms of Receptacles.

In the older parts of the town, refuse is mainly thrown into privy middens or dry ashpits, while galvanised iron receptacles are provided for all new houses. The insanitary privy middens are being gradually abolished and replaced by either ashpits or ashbins. The latter is by far the best method of collecting refuse, and where there is no ashpit the provision of galvanised iron bins, with tight-fitting lids, ought to be insisted upon. There are too many lidless tubs and odd boxes being used. They allow refuse to blow readily about, and are as insanitary as they are inelegant.

### REMOVAL OF HOUSE REFUSE.

Ashpits and ashbins are emptied daily in the centre of the City, and once or twice a week in other parts. I have had but few complaints regarding removal of refuse, although ashbins are frequently found overflowing and refuse lying about. This is due to inadequate provision of ashbins, one to 3 or more houses; whereas there should at least be one bin to every 2 houses. New houses occupied by the working classes are provided each with an ashbin. The quantity of refuse could be enormously reduced if householders would take the trouble to burn as much garbage as possible in their own fires.

### DISPOSAL.

House refuse is partly disposed of on land and partly consumed at the Corporation Destructor. The Destructor is 6 celled (2 cells Heenan and Froude and 4 cells Manlove and Alliott), and is capable of burning over 50 tons of refuse in the 24 hours.



## REMOVAL AND DISPOSAL OF EXCREMENT.

Excrement is removed both by the dry and the wet method, the former being represented by privy middens and tub closets, and the latter by water closets.

### PRIVY MIDDENS.

Of these there are 884 in the City, and all are covered. They are mostly located in the older and the outlying parts, and being more or less insanitary, are being gradually replaced by water-closets. During 1903, 196 privies gave place to water closets, 83 being converted and 113 demolished and water closets built in their place.

Privies are emptied monthly by the Corporation, and contents disposed of to market gardeners.

### TUB CLOSETS

number 962, and are found in the same localities as the privy middens. They are nearly always offensive, often most offensive, and a good privy midden is certainly to be preferred. During 1903, 54 tub closets were replaced with water closets, 27 being converted and 27 demolished and water closets erected on the site. The tubs are removed once or twice a week to Depôt in Calder Vale, where the contents are mixed with ashes, and then removed by farmers.

### TROUGH CLOSETS.

There are 461 of these, and, except a few that are provided with automatic flushing tanks, all are flushed out daily with a hose-pipe. Excepting those that are automatically flushed out 4 times a day or oftener, these closets are decidedly objectionable.

### WATER CLOSETS.

All new houses are provided with water closets, one to each house, but in the older parts of the town one closet usually serves two houses, sometimes more than 2 houses, and they are arranged in blocks apart from the houses. One cannot help commenting on the filthy condition in which these closets are often found. The landlord is compelled to substitute good water closets for insanitary privies or tub closets, and the tenant should be similarly compelled to keep the closets so provided in clean and decent condition. Section 21 of the Public Health Acts Amendment Act (1890), which bears on this matter, ought to be strictly enforced.

## SEWERAGE.

During the year considerable new sewerage work has been done. The new main sewers in Kirkgate and Northgate, and the new intercepting sewer in Alverthorpe Road, were almost completed by the end of the year.

The attention of the Sanitary Department has frequently been directed to nuisances caused by effluvia escaping from surface gratings. The old Northgate sewer was particularly complained of during the



summer, but it is to be hoped that the construction of the new sewer will prevent a recurrence of the nuisance. In 8 cases these effluvia nuisances were remedied by closing the surface gratings and substituting ventilating shafts. Many complaints of offensive smells from surface gratings came from the localities of Thornes Lane and Eastmoor, and it is to be noted that these are just the localities where Typhoid Fever is most prevalent. The sewer gradients appear to be bad, and a paucity of ventilating openings concentrates the noisome emissions at such as do exist. It is common to find considerable lengths of sewers absolutely unventilated, and when this is associated with defective conditions of house drainage, the risks to health from the sewer air gaining entrance to dwellings is very great. It is also common to find rain conductors directly connected with the drains and acting as ventilators. These pipes are of light iron, often with more or less open joints, and will readily allow of the admission of foul sewer air into dwelling houses. I recently investigated a case of Typhoid Fever where the source of infection was very obscure. The drainage appeared to be in a perfectly sound condition, except that just below the bedroom window of the patient was the gaping joint of a rain conductor, which led, without any disconnection, to the drain, and the drain in turn was connected with an unventilated sewer.

In the interests of public health ample sewer ventilation is necessary, and the means of ventilation should, as far as possible, take the form of air shafts.

Flushing of sewers with poor gradients is also very necessary, particularly in the summer, when fermentative processes are most intense. This appears to be done systematically by the Cleansing Department from the month of April to the month of June, and, fortunately, during last year, the artificial flushing was considerably augmented by the copious rainfall. There are no automatic flushing tanks, which would be of great service in certain low lying districts. A very bad sewer was disclosed in Park Street, when the ground was opened for the purposes of making a drain connection. It is a square brick sewer, and was found silted up with sludge for quite 18 inches. It is hardly necessary to say that such antiquated and dangerous sewers should be abolished as speedily as possible.

### SEWAGE DISPOSAL.

All the sewage of the City (except that from Alverthorpe) is treated at the Calder Vale Sewage Works by means of chemical precipitation in sedimentation tanks and subsequent land filtration. The effluent is discharged into the River Calder. After preliminary screening and pumping the sewage passes along a channel, where it dissolves cakes of alumino-ferrie, the chemical precipitating agent used, and then undergoes sedimentation in the tanks. It then passes on to the land, which comprises some 45 acres, and is divided into filtering areas, each underdrained at a depth of 5 feet.



The Alverthorpe sewage is treated at the local sewage works by chemical precipitation only. The precipitant is lime and aluminoferric, and the effluent passes directly into a beck, which is a tributary of the River Calder. Treatment will, however, be discontinued here early in 1904, when the new sewer now in hand is completed, and all the sewage of the City, including that of Alverthorpe, will be dealt with at the Calder Vale Sewage Works.

### SMOKE NUISANCE.

In a report on the health of the city, I cannot refrain from calling your attention to the gross pollution of the atmosphere by the emission of black smoke from the chimneys of boiler and other furnaces. This is a form of nuisance that is obvious to everyone, and a nuisance that more or less affects everyone, and there can be no question that it is a nuisance injurious to the health of the community. A foul smoke laden atmosphere lowers the general standard of health by obstructing the sunlight, and it excites or favours the development of respiratory diseases by inhalation of carbonaceous particles and irritant acids. I have previously pointed out that respiratory diseases head the list of causes of death, and Phthisis, a disease that is highly favoured by the inhalation of irritant matters, occupies a high place in our bills of mortality. I have little doubt that in the causation of these diseases one important factor is the foul state of the atmosphere we live in. A pure atmosphere is as necessary for good health as pure water and a pure food supply. It is, of course, out of the question to expect in a manufacturing and industrial town as clear an atmosphere as in the country or seaside, but I do think that much could be done, and without inflicting any hardship on manufacturers or interfering with trade, to abate the serious state of affairs that now prevail. The law on the subject is perfectly plain. Any chimney (not being the chimney of a private dwelling house) sending forth black smoke in such quantities as to be a nuisance shall be dealt with by the Sanitary Authority as a nuisance, unless it be shewn that the owner of the furnace has done everything that is practicable to prevent the emission of such smoke. This brings in engineering problems, which can only be properly dealt with by men conversant with the management of boilers and furnaces. It has, however, been shewn by practical men that nearly all black smoke from boiler furnaces can be prevented, and that even from metallurgical furnaces the nuisance can be considerably reduced if proper appliances and methods are employed. In many cases it has been demonstrated that the black smoke produced is due to nothing more than unskilled and careless stoking, and when the stokers were taught their business and kept under efficient management the nuisance ceased.

### SANITARY ADMINISTRATION.

The Sanitary Department consists of one inspector of nuisances and an assistant inspector. The former has also supervision of the Cleansing Department, and, consequently, cannot devote the whole of



his time to his duties as a sanitary inspector. No clerical assistance is provided, although there is a great deal of office work connected both with the Sanitary and the Cleansing Departments. The staff is altogether inadequate for the efficient discharge of the duties attached to a Sanitary Department. There is at present one inspector (actually less than one inspector when the work connected with the Cleansing Department is considered) to 21,000 of the population, and all who have a practical knowledge of sanitary inspector's work are agreed that one inspector to each 10,000 of the population is a fair allocation. I have made inquiries at 50 English towns, many of them, according to the Medical Officers of Health, with an understaffed sanitary department, and I find that the average works out at one inspector to each 14,000 of the population. Liverpool has one inspector to 7,000 population, Leeds 1 to 10,000, Keighley 1 to 10,000, Bradford 1 to 11,000, and Sheffield 1 to 12,000.

It is no exaggeration to say that the duties of a sanitary inspector have been doubled within the last ten years, and every year fresh legislation and new developments in sanitary science are adding to the burden. A sanitary department should no longer wait for complaints before taking action, but should diligently seek out insanitary conditions for itself. I cannot too strongly emphasise the importance of systematic house-to-house inspection. But to do this work thoroughly and to keep full permanent records of all observations made takes up a great deal of time. Then, again with an inadequate staff, much of the good done in the way of abatement of nuisances is discounted by the inability of the inspectors to pay the necessary number of re-visits to ensure that the nuisances are not allowed to recur. With a certain class of nuisances—those due to neglect on the part of occupiers—more permanent good will be done by keeping each case under the closest observation for a considerable time than by serving them with notices from time to time and then leaving them alone. Meat inspection and the inspection of food generally should also be taken up more thoroughly, and I should like to see more supervision exercised over cases of infectious disease occurring in the poorer localities.

If the public health law is to be thoroughly carried out the sanitary bye-laws strictly enforced, and the general demands of modern sanitary science adequately met, your staff of sanitary inspectors will have to be substantially increased.

In this connection I wish also to point out the desirability of greater co-ordination between the work of the Medical Officer of Health and the work of the Sanitary Inspector. The work of both lies in the same direction, and has the same end in view, namely, the improvement of the public health. Yet, although thus closely associated and working to a certain extent together, they occupy officially separate and independent departments. I have every reason to believe that the sanitary inspectors do their work conscientiously and well. They have at all times readily afforded me such assistance and information as I required.



But still I feel that my position is anomalous, and that my work as Medical Officer of Health is handicapped by not having such supervision over the Sanitary Department as is possessed by practically every Medical Officer in the country who devotes his whole time to the duties of his office. The Medical Officer of Health is required by Local Government Board Order to keep himself informed respecting all influences affecting, or threatening to affect, the public health, and he must report annually on the general sanitary state of his district. In order to do this, it is obvious that he must be kept daily informed of all that is going on in the Sanitary Department, and that he should be empowered to direct the work of the inspectors when he considers it necessary. Such supervision would not interfere with the statutory duties of the Sanitary Inspector, while it would enable the Medical Officer more fully to carry out his own. Indeed, the Local Government Board Order of 1891, relating to the duties of the sanitary inspector, expressly states that "the inspector shall perform his duties either under the special directions of the Sanitary Authority, or (so far as authorized) under the directions of the Medical Officer of Health." There is also a similar provision in the Order laying down the duties of the Medical Officer of Health, which reads as follows:—"Subject to the instructions of the Sanitary Authority, the Medical Officer of Health shall direct or superintend the work of the Inspectors of Nuisances in the way and to the extent the Sanitary Authority shall approve."

I have made inquiries at 50 representative towns in England, and in all, except 5, the Medical Officer of Health supervises the work of the Sanitary Inspectors in all respects. In three out of the 5 towns where the Medical Officer does not supervise the Sanitary Inspectors, the Medical Officer is a part-time official.



TABLE I.

VITAL STATISTICS OF WHOLE DISTRICT DURING 1903 AND PREVIOUS YEARS.  
CITY OF WAKEFIELD.

Year.	Popula- tion estimated to Middle of each year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-residents registered in Public 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.	
		Num- ber.	Rate.*	Under 1 Year of age.		At all Ages.					Num- ber.	Rate.*
				Num- ber.	Rate pr 1,000 Births Regis- tered.	Num- ber.	Rate.*					
1	2	3	4	5	6	7	8	9	10	11	12	13
1893	33,626	1005	31·23	200	200	744	22·1					
1894	34,109	1010	29·61	133	131·1	527	16·2					
*1895	34,216	1071	31·4	215	200·7	707	20·6					
1896	35,491	1108	33·2	166	149·6	682	19·2					
1897	35,872	1027	28·9	174	169·4	613	17					
1898	36,210	1039	28·6	184	177·1	696	19·2					
1899	36,671	1084	29·7	176	162·3	618	16·9					
1900	36,768	993	26·8	199	200·4	896	24·3					
1901	40,176	1190	29·61	220	185	814	20·2					
1902	40,600	1166	28·73	178	152·6	739	18·2					
Aver- ages for yrs. 1893- 1902.	36,374	1069	29·3	184·5	172·5	704	19·3					
1903	42,066	1107	26·3	145	130·9	950	22·5	390	281	1	670	15·9

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

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

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public Institutions" to be taken into account for the purposes of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses, and lunatic asylums.

\* The West Riding Lunatic Asylum came within the City boundary in 1895, but from 1895 to 1902 inclusive, it is excluded from the population of Wakefield, as given in above table.

Institutions within the District receiving sick and infirm persons from outside the District.	Institutions outside the District receiving sick and infirm persons from the District.	Other Institutions, the Deaths in which have been distributed among the several localities in the District.
West Riding Lunatic Asylum. Union Workhouse and Infirmery. Clayton Hospital (H.M. Prison).		



TABLE II.  
CAUSES OF, AND AGES AT, DEATH DURING YEAR 1903.  
CITY OF WAKEFIELD.

Causes of Death.	Deaths in or belonging to whole District at subjoined ages.							Deaths in or belonging to Localities (at all ages).			Total Deaths in Public Institutions in the District.
								Registration Districts.			
	All ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	Wakefield.	Stanley	Alverthorpe.	
1	2	3	4	5	6	7	8	9	10	11	12
Small-pox ...	4					4		4			8
Measles ...	19	4	15					17		2	
Scarlet Fever ...	2	1				1		1		1	
Whooping-cough ...	13	5	7	1				10	1	2	1
Diphtheria and Membranous Croup ...	1			1						1	
Croup ...	1		1					1			
Fever { Typhus ...	6				2	3	1	3	2	1	5
Enteric ...											
Other continued ...											
Epidemic Influenza ...											
Cholera ...											
Plague ...											
Diarrhœa ...	12	10	2					8	4		1
Enteritis ...	9	4	1	1		1	2	3	4	2	10
Puerperal Fever ...	1					1			1		
Erysipelas ...	1	1						1			
Other Septic Diseases ...	4	2				2		2	1	1	3
Phthisis ...	58	5	3	6	14	29	1	28	10	20	63
Other Tubercular Diseases ...	15	4	5	1		5		8	3	4	8
Cancer, Malignant Disease ...	32					25	7	18	5	9	13
Bronchitis ...	52	12	4			18	18	25	19	8	16
Pneumonia ...	57	15	20	1	1	19	1	26	15	16	32
Pleurisy ...											
Other Diseases of Respiratory Organs ...	11	5				5	1	7	3	1	11
Alcoholism } ...	10					8	2	7	2	1	1
Cirrhosis of Liver ...											
Venereal Diseases ...											
Premature Birth ...	22	22						13	4	5	
Diseases and Accidents of Parturition ...	4				1	3		3		1	36
Heart Diseases ...	51	2		1	1	33	14	28	6	17	15
Accidents ...	23	3	1	1	3	11	4	17	1	5	3
Suicides ...	4					3	1	3		1	
Old Age ...	50					1	49	19	20	11	32
All other Causes ...	208	50	16	7	8	81	45	120	32	56	132
All Causes ...	670	145	76	20	30	253	146	372	133	165	390



TABLE III.  
COMPARATIVE MORTALITY TABLE.

	Estimated Population, 1903.	Birth Rate.	Death Rate.	Zymotic Death Rate.	Infan- tile mor- tality (per 1000 births).	Average Death Rate 1893 to 1902
Wakefield ... ..	42,066	26·3	15·9	1·1	130·9	22·6
England and Wales...	42,372,556	28·4	15·4	1·46	132·0	
W. Riding Administrative County	1,430,077	28·7	16·0	1·53	141·0	17·4
Leeds ... ..	443,559	29·4	16·6	1·74	153·0	19·6
Bradford ... ..	283,412	23·27	16·23	1·32	147·0	18·2
Barnsley ... ..	42,400	37·14	19·92	3·79	175·2	20·9
Keighley ... ..	43,120	23·7	15·3	0·69	140·0	18·2
Batley ... ..	30,694	27·4	18·5	1·8	162·0	19·0
Doncaster ... ..	29,608	25·6	16·4	2·0	181·8	18·2
Scarborough ... ..	39,220	22·4	14·7	1·14	124·0	17·7
Hull ... ..	249,639	31·2	16·6	2·2	162·0	18·1
Liverpool ... ..	716,810	33·3	19·8	2·8	159·0	23·1
Birmingham ... ..	533,039	31·7	17·2	2·3	158·0	20·0
Leicester ... ..	220,272	27·31	13·9	1·45	161·0	16·74
Blackburn ... ..	131,079	25·2	15·7	1·7	158·0	20·3
Bristol ... ..	338,895	27·26	14·22	1·1	116·35	17·32
Portsmouth ... ..	194,960	27·95	14·75	1·49	114·0	17·67

TABLE IV.—INQUEST CASES.

Natural Causes ... ..	44
Accidents ... ..	17
Scalds ... ..	2
Burns ... ..	4
Suffocation ... ..	3
Drowning ... ..	6
Suicides (Poisoning) ... ..	2
Suicides (Cut Throat) ... ..	2
Wilful Murder ... ..	1
Excessive Drinking ... ..	1
Found Dead ... ..	3
<hr/>	
Total ... ..	44

Ages of Persons Scalded—4 years, 14 months.

„ „ „ Burned—5 years, 3 years, 4 years, 63 years.

„ „ „ Suffocated—newly born, 12 hours, 11 months.

The inquest cases comprise both Residents and Non-Residents.



TABLE V.—CASES OF INFECTIOUS DISEASE NOTIFIED IN WAKEFIELD DURING THE YEAR 1903.

Cases Notified in Wards and Institutions.														Cases removed to Hospital from Wards and Institutions.												
Total Cases.	Alverthorpe.	North Westgate.	South Westgate.	St. John's.	Northgate.	Kirkgate.	Primrose Hill.	Calder.	Asylum.	Workhouse.	Clayton Hospital.	Prison.	Alverthorpe.	North Westgate.	South Westgate.	St. John's.	Northgate.	Kirkgate.	Primrose Hill.	Calder.	Asylum.	Workhouse.	Clayton Hospital.	Prison.	Total.	
Smallpox .....	101	2	4	8	1	37	12	14	2			11	10	2	4	8	1	37	11	14	2		11		7	97
Cholera .....													1													
Diphtheria .....	19	3		1	6	4	2		2																	
Membranous Croup																										
Erysipelas .....	11		1			1	2	1	1	4	1															
Scarlet Fever .....	108	7	9	8	18	23	4	18	10	8	2	1	3					1								*4
Typhus Fever .....																										
Enteric Fever .....	30		1	2	4	6			4	11	2									1						†1
Relapsing Fever...																										
Continued Fever...																										
Puerperal Fever ...	4					1		2			1															
Plague .....																										
TubercularPhthisis	50	2	2	1		7	2	1	1	5	29															
Total .....	323	14	17	20	29	79	22	36	20	28	46	1	11	5	4	8	1	37	12	14	3		11		7	102

\* Removed to Carr Gate Fever Hospital.

† Removed to Poor Law Infirmary.



TABLE VI.  
TABLE SHEWING BIRTHS AND VACCINATION RETURNS IN THE REGISTRATION DISTRICT  
OF WAKEFIELD.

Year.	Births Registered.	Successfully Vaccinated.	Insusceptible to Vaccination.	Died Unvaccinated.	Number exempted by certificates of conscientious objection.	Postponed by Medical Certificate.	Removed to other Districts.	Removed to places unknown, and cases that have not been found.	Percentage Unvaccinated.
1900	613	481	3	77	4	22	9	6	8.5%
1901	669	488	6	86	14	11	5	10	8%
1902	637	551	3	44	3	16	6	9	5.2%

I am indebted to H. Beaumont, Esq., Superintendent Registrar, for Vaccination Returns.



TABLE VII.—ABSTRACT FROM METEOROLOGICAL REGISTER AT WAKEFIELD PRISON FOR YEAR 1903.

MONTH.	Barometer corrected and reduced to 32deg. Fahrenheit at mean sea level.						Temperature.								Rainfall.				No. of days on which .01 or more fell.
	Mean at		Maximum Reading.	Date.	Minimum Reading.	Date.	Mean at.		Mean.		Approximate Mean.	Highest Maximum.	Date.	Lowest Minimum.	Date.	Total in Inches.	Greatest quantity in 24 hours.	Date.	
	9 a.m.	9 p.m.					9 a.m.	9 p.m.	Max. in Air.	Min. in Air.									
	Inches	Inches	Inches	Inches	Inches	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Ins.	Inches.		
January	29.905	29.907	30.672	14th	29.005	7th	38.7	39.1	43.6	34.3	38.9	55.0	26th	17.2	1st	1.76	.61	5th	18
February	29.981	30.000	30.562	17th	29.059	27th	45.2	45.1	50.4	39.7	45.0	53.1	8th	30.2	18th	1.81	.60	21st	14
March	29.713	29.742	30.303	8th	28.621	2nd	45.4	44.4	51.9	38.8	45.3	65.4	25th	30.2	28th	3.09	.72	17th	18
April	29.887	29.869	30.481	19th	29.353	29th	45.2	42.8	50.9	38.4	44.6	58.5	28th 30th	26.6	23rd	1.18	.45	30th	14
May	29.903	29.913	30.498	24th	29.253	4th	52.3	50.6	59.2	42.5	50.8	77.2	31st	31.2	12th	3.26	.60	9th	16
June	30.088	30.092	30.463	6th	29.701	16th	58.0	54.8	63.8	47.0	55.8	75.4	28th	36.4	21st	1.62	.69	13th	8
July	29.908	29.894	30.308	9th	29.528	17th	61.0	58.5	66.6	52.7	59.6	81.4	10th	43.2	7th 14th	2.28	.42	14th	15
August	29.789	29.783	30.178	7th	28.966	15th	58.8	56.7	64.5	50.5	57.5	72.0	8th	42.2	23rd	2.82	.76	17th	16
September	30.033	30.011	30.596	15th	29.004	10th	56.1	53.0	63.2	46.4	54.8	72.6	1st	33.2	17th	2.88	1.13	10th	16
October	29.574	29.547	30.062	18th	28.934	12th	51.0	49.6	56.5	44.0	50.2	64.4	1st	37.2	10th 24th	7.17	1.02	6th	29
November	30.024	30.010	30.651	5th	29.128	28th	43.1	42.7	49.2	37.7	43.4	56.6	24th	27.2	6th	1.36	.42	2nd	19
December	29.758	29.758	30.267	29th	29.010	10th	37.3	38.1	42.0	34.6	38.3	50.2	22nd	23.2	30th	1.19	.27	8th	17
For the Year	29.880	29.878	30.672	Jan 14th	28.621	Mar 2nd	49.3	47.9	55.1	42.2	48.7	81.4	July 10th	17.2	1st	30.42	1.13	Sep. 10th	200

This Abstract has kindly been supplied by Mr. Clyde, Dispenser H.M. Prison, Wakefield.



