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Bedfordshire County Council.

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REPORT

Upon the Sanitary Condition

OF THE

ADMINISTRATIVE COUNTY OF BEDFORD

FOR THE YEAR

1897,

WITH

STATISTICAL INFORMATION AND SUMMARY

OF

Reports of District Medical  
Officers of Health.

BY

LEONARD WILDE, M.D., M.R.C.P., D.P.H.,

COUNTY MEDICAL OFFICER OF HEALTH.

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PRESENTED TO THE COUNCIL 5TH AUGUST, 1898.

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BEDFORD  
PRINTED BY C. F. TIMÆUS, 90, HIGH STREET,

1898.

Administrative County of Bedford

# REPORT

upon the Sanitary Condition

of the County of Bedford

1887

PREPARED BY THE SANITARY COMMISSIONERS

BEDFORD

C. F. TIMÆUS, PRINTER, 90, HIGH STREET.

Printed at the Bedford Medical  
Office of Health.

By Order of the Sanitary Commissioners,  
J. H. B. B. B.

Approved by the County Council,  
J. H. B. B. B.

Printed and Published by  
C. F. TIMÆUS, 90, HIGH STREET, BEDFORD.

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**To the Chairman and Members of the  
Bedfordshire County Council.**

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MY LORDS AND GENTLEMEN,

I have the honour of presenting to you my sixth Annual Report upon the sanitary condition of the County of Bedford.

The same classification is adopted as in previous years, and the proceedings of the County Council with regard to sanitation are again recorded.

With the exception of the Woburn Rural District, all the Urban and Rural Councils now print the Reports of their Medical Officers of Health, and thus a wider circulation and increased interest in local sanitation are ensured.

For the purpose of rapid reference, I have this year summarised the sanitary requirements of each district as disclosed in the Reports of the Medical Officers of Health. Every district may be said to have requirements, some more urgent than others, but unless these are set forth in the Annual Health Reports it is difficult to arrive at a correct view of the requirements of the County as a whole.

It should be borne in mind that it is the duty of a Medical Officer of Health to point out the necessities of his district, and although this may be occasionally unpalatable, yet any long continued failure to disclose defects is bad policy both as regards himself and his Council.

In view of the number of sewage schemes which are being considered in various parts of the County, I have introduced a short description of the biological method of disposal of sewage as employed at Sutton and Exeter and as the latter system has recently been sanctioned by the Local Government Board, it is hoped that it may prove useful in some towns in Bedfordshire.

The water supply of many of the districts in the County continues very unsatisfactory, to some extent the result of faulty methods of sewage disposal. I may, however, draw attention to the value of periodical chemical and bacteriological examination of public water supplies in their source, course and periphery.

Special attention is being paid to the etiology of Phthisis and Cancer. It is, however, much to be regretted that the sickness-rates of the various infectious diseases cannot be very accurately calculated owing to the continued refusal of the Leighton Buzzard Urban District Council to adopt the Notification Act.

In conclusion, I have again to thank the Clerk of the County Council for much information and assistance, and also the Members of the General Purposes Committee for their cordial co-operation and support.

I likewise hope that the Report will meet with the approval and support of the Council, and possibly encourage those Authorities to whom it refers to make greater efforts to bring health and reasonable comfort within the reach of all.

I have the honour to be, my Lords and Gentlemen,

Your obedient Servant,

LEONARD WILDE,

*County Medical Officer of Health.*

PALACE CHAMBERS,  
WESTMINSTER,  
19th July, 1898.

## THE COUNTY GENERALLY.

The Administration of the County is conducted by the Board of Supervisors, who are elected by the people for a term of four years.

The County is divided into several districts, each of which is represented by a member of the Board of Supervisors.

The County is also divided into several precincts, each of which is represented by a member of the Board of Supervisors.

The County is also divided into several wards, each of which is represented by a member of the Board of Supervisors.

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## THE COUNTY

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## THE COUNTY GENERALLY.

The Administrative County includes three Municipal Boroughs and 139 entire civil parishes.

The Urban Districts within the County are seven in number, and the Rural Districts also seven.

The aggregate population of the various districts exactly corresponds with the population of the County, as estimated by the Medical Officers of Health to the middle of the year 1897. It was as follows:—

Urban Districts ...	...	...	...	...	90,628
Rural Districts ...	...	...	...	...	78,841
The County ...					169,469

In one or two of the Districts the Medical Officer does not estimate the population to the middle of each year, and therefore the aggregate estimated population of the County for 1897 cannot be very accurately given, the figures representing the estimated population of those places in respect of which an estimate has been received, and the census population of the others.

The natural increase due to excess of births over aggregate deaths was 1,822.

### Births.

The number of births registered in the Urban and Rural Districts and the County, and the birth-rate per 1,000 of their populations compared with England and Wales is given below:—

LOCALITIES.	ESTIMATED POPULATION, 1897.	BIRTHS.	BIRTH-RATE PER 1,000 OF THE POPULATION, 1897.
Urban Districts	90,628	2,310	25·4
Rural Districts	78,841	1,989	25·2
Administrative County	169,469	4,299	25·3
England and Wales	31,055,355	921,104	29·7

The highest birth-rates per 1,000 living were recorded in the Kempston and Biggleswade Urban Districts; the lowest in the Dunstable Urban District.

In the whole of England and Wales the birth-rate for 1897 was the same as that for 1896, and lower than any on record excepting 1894, and 1·0 per 1,000 below the mean rate for the 10 years 1887 to 1896.

The County birth-rate was slightly lower than that for the preceding year.

### Deaths.

The number of deaths registered in the Administrative County, the Urban and Rural Districts, and the death-rate per 1,000 of their respective populations, compared with England and Wales was as follows:—

LOCALITIES.	ESTIMATED POPULATION, 1897.	DEATHS	DEATH-RATE PER 1,000 POPULATION.
Urban Districts	90,628	1,368	15·0
Rural Districts	78,841	1,216	15·4
Administrative County	169,469	2,584	15·2
England and Wales	31,055,355	541,426	17·4

The highest corrected death-rates, 17·1 and 15·3 per 1,000 respectively, were recorded in the Woburn Rural District and Biggleswade Urban District; the lowest, 12·9 per 1,000, in the Leighton Buzzard and Bedford Urban Districts.

The death-rate in 1897 for England and Wales was lower than the rate in any previous year, excepting 1894 and 1896, and compared with the 10 years 1887 to 1896 showed a decrease of 1·2 per 1,000.

Of the total number of deaths registered in the County 107 were recorded by the Medical Officers of Health as occurring outside their district.

This difference between the total number of deaths registered in the County and those recorded by the Medical Officers of Health as belonging to their districts is an indication of the extent to which the death-rates are corrected, and it would be well if every Medical Officer of Health were to record the gross death-rate as well as the death-rate corrected for non-residents.

In some of the districts, notably those under Dr. Prior, corrections are made for deaths occurring in public institutions outside the district among persons belonging thereto; but as a rule these deaths are not relegated to or recorded in the district to which they originally belonged.

In yet other districts deaths occurring in workhouses are altogether ignored, although the births occurring therein are recorded.

In the case of a County Asylum or an institution receiving patients from all parts of the County, both the population and deaths should be allocated to their proper districts, but it is very doubtful whether the deaths from a Workhouse Infirmary should be so distributed, as the inmates for the most part have become permanent residents, and if the population is included in the district the deaths should also be.

### Infantile Mortality.

From a statistical point of view the mortality among children under one year of age is a very valuable indication of the sanitary condition of a locality, and of the hygienic care bestowed upon children at the most tender age.

It may be calculated as a percentage of deaths under one year to total deaths, or as the proportion of deaths of children under one year to every 1,000 births. The latter is the method usually adopted, and forms the record known as infant mortality.

The highest infantile mortality, 187·8 per 1,000 births, was again recorded in the Borough of Luton, followed by Kempston and Biggleswade Urban Districts with 159 and 136 per 1,000 respectively. The lowest, 57·5 per 1,000, occurred in the Leighton Buzzard Urban District.

The relative infantile mortality per 1,000 births in the Urban and Rural Districts and the County compared with England and Wales is given below :—

LOCALITIES.	BIRTHS.	DEATHS UNDER 1 YEAR.	INFANTILE MORTALITY PER 1,000 BIRTHS, 1897.
Urban Districts ...	2,310	347	150
Rural Districts ...	1,989	212	106
Administrative County	4,299	559	130
England and Wales ...	921,104	143,814	156

In the whole of England and Wales the rate of mortality among infants under one year of age to a 1,000 registered births was 8 per 1,000 above the mean proportion in the ten years 1887-1896.

The County mortality shows a very considerable increase more particularly in the Urban Districts, due in a measure to the large number of deaths from whooping cough, but the continued excessive infantile mortality at Luton would appear to call for special local inquiry.

Under the auspices of the County Council a course of lectures was commenced during the year by Miss Allen on the management and feeding of children.

These lectures have been well attended and much appreciated and it is hoped will lead to good results in the near future.

Miss Allen has drawn up and circulated printed pamphlets giving precise directions as to the care of infants and the preparation of their food, and when these have been distributed, there will be less excuse for the gross ignorance and carelessness which is now displayed in so many homes.

The main contributory causes of this mortality were fully dealt with in last year's report.

### Senile Mortality.

The following Table shows the senile mortality in the Urban and Rural Districts as indicated by the percentage of deaths over 65 to total deaths :—

LOCALITIES.	TOTAL DEATHS.	DEATHS OVER 65.	PERCENTAGE OF TOTAL DEATHS.
Urban Districts	1,368	371	27·1
Rural Districts	1,216	485	39·8
The County	2,584	856	33·1

The proportion of persons dying over 65 is fairly high, and if maintained through a series of years would show that a considerable proportion of the population reach old age. The balance in favour of the Rural Districts was to be expected.

### Zymotic Disease.

The principal zymotic diseases from which the zymotic death rate has been calculated in all the districts include small pox, measles, scarlet fever, diphtheria, whooping cough, fever (typhus, enteric and continued), and diarrhœa. Diphtheria now includes croup.

Dysentery and cholera, whether English or Asiatic, would be classified as diarrhœal diseases.

The deaths and death rates from the principal zymotic diseases in the Administrative County, the Urban and Rural Districts, and in England and Wales, are given below :—

LOCALITIES.	ESTIMATED POPULATION, 1897.	ZYMOTIC DEATHS.	ZYMOTIC DEATH RATE PER 1,000 POPULATION. 1897.
Urban Districts ...	90,628	125	1·3
Rural Districts ..	78,841	84	1·0
Administrative County	169,469	209	1·2
England and Wales ...	31,055,355	67,051	2·15

The highest zymotic death rate, 1·9 per 1,000, occurred in the Luton Rural District, followed by 1·8 per 1,000 in the Luton Urban District.

As in England and Wales the County death rate was slightly lower than that in the preceding year.

The most important of these diseases are separately dealt with in this Report.

### **Variola.**

No case of small pox was notified in the County during the year 1897.

### **Vaccination.**

As far as can be gathered from the reports no difference of opinion is discernible among the Medical Officers of Health in the County as to the efficacy of vaccination in the prevention or limitation of small pox outbreaks and the danger arising from its abandonment.

### **Scarlet Fever.**

No epidemic of scarlet fever occurred during the year, but the disease was prevalent in the Boroughs of Luton and Bedford and the Woburn Rural District throughout the year.

Of the total of 394 cases, 9 deaths were registered.

### **Diphtheria.**

The Registrar-General classifies membranous croup with diphtheria, and no distinction is now made between them.

The number of cases notified in the County during the year 1897 was 211, and the number of deaths registered 39, of which 20 occurred in the Urban Districts and 19 in the Rural Districts, giving a case rate of 1·2 per 1,000 living and a case fatality of 18·4 per cent. These figures compare rather unfavourably with the year 1896, when 156 cases were notified and 31 deaths occurred.

The disease was most prevalent in the Bedford Urban, and the Bedford and Biggleswade Rural Districts.

The County does not appear to have shared in the reduction of the case fatality which has been a feature in some other Counties during the year. This may possibly be accounted for by the very small percentage of cases which were removed to Hospital and subjected to the Antitoxin treatment.

The great value of Antitoxin in the treatment of diphtheria has now been confirmed in all parts of the world, particularly when employed in the early stages of the disease. When it becomes the general practice to administer this remedy as soon as the nature of the disease is recognised a still further reduction in the fatality of diphtheria may be expected.

The accurate etiology of diphtheria continues to engage a large amount of attention but the fact that three fourths of the total number of cases notified occur in children under ten years of age shows that the aggregation of children in crowded classrooms is a fertile source of origin.

Once developed, no doubt the disease is spread very largely by direct contagion, which is the main factor in the spread of most outbreaks, and it is also capable of being transmitted from certain animals (cows, cats, birds, etc.), to man either directly or indirectly; in the latter case milk being the chief means of conveyance.

The disease is frequently associated with the prevalence of croup and cases of scarlet fever in which throat affections are marked.

Drainage defects and the continued inhalation of sewer emanations if not actually causative appear to give rise to a condition very favourable to its development.

Dampness of soil and general insanitary conditions may be classed in the same category.

Outbreaks are referred to in the reports of the Medical Officers of Health for the following districts :—

Amphill Rural District.  
Bedford Rural District.

**Amphill Rural.**—The Medical Officer of Health reports an outbreak of diphtheria at Flitwick, 11 cases occurring within 14 days in seven houses. The milk supply and general sanitation were found to be good, but he reports that the cause of the outbreak was due to the air-borne debris from the accumulation of London manure in the district. Large quantities of this are collected at Flitwick Station, and give rise to effluvium nuisances.

An analysis of the water of several of the wells showed contamination from the debris of straw and manure, which had been blown away from these offensive heaps.

**Bedford Rural.**—Two outbreaks of diphtheria are reported from the villages of Wilden and Sharnbrook, the former of which was very fatal. No particular cause of origin is given, and the cases appear to have been somewhat widely scattered, and in localities which had not the reputation of possessing most faulty sanitary circumstances.

## Enteric Fever.

The aggregate number of cases of enteric fever notified in the County, the case rate per 1000 of the population, and the case fatality per cent., is shown below :—

	POPULATION.	NUMBER OF CASES NOTIFIED.	NUMBER OF DEATHS.	CASE RATE PER 1,000 POPULATION.	CASE MORTALITY PER CENT.
Urban Districts	90,628	51	4	0·5	7·8
Rural Districts .	78,841	36	7	0·4	19·4
The County ...	169,469	87	11	0·5	12·6

The disease was most prevalent in the Borough of Luton and the Biggleswade Rural District.

The Medical Officer of Health for Luton deals minutely with the origin of enteric fever. He summarises the various modes of infection as follows :—

1. Water.
2. Milk.
3. Sewer gas.
4. Polluted soil.
5. Oysters, ice creams, or watercresses.
6. Infection from soiled linen, or want of personal cleanliness.
8. Flies.

The prevalence of enteric fever in Luton he attributes chiefly to organic pollution of the soil and direct infection. He advocates the following preventive measures :—

- Systematic inspection of all house drains.
- The regular flushing of sewers.
- Paving of all back yards, and
- Permanent Isolation Hospital accommodation for enteric fever cases.

In the Biggleswade Rural District 16 cases occurred of indefinite origin, but the insanitary condition of the water supply of this district has long been evident.

## Measles.

A very satisfactory decline occurred in the prevalence of measles throughout the County during the year. The total number of deaths registered was 11, as compared with 76 in the previous year. Three of the deaths occurred in the Urban and eight in the Rural Districts.

Now that the disease has ceased to be epidemic it would be a good opportunity for the introduction of the voluntary notification of the first case of measles in every household.

There is no doubt that schools play the most important part in the dissemination of the disease, and in epidemic times it is only by their closure that any reduction in the number of cases notified can be effected.

The simplest way to obtain information as to its prevalence would appear to be for the head teachers to notify to the Sanitary Authority all cases of measles coming to their knowledge among scholars attending their school. Were this system properly carried out it is doubtful whether notification of even first cases under the Notification Act would be necessary, unless the Sanitary Authority were prepared to provide hospital accommodation for first cases.

### Whooping Cough.

The total number of deaths registered from whooping cough during the year was 67, as compared with 29 in the previous year. Thirty-nine of these occurred in the Urban and 28 in the Rural Districts.

The districts most affected were the Boroughs of Luton and Bedford.

The Medical Officer of Health for the Luton Rural District in reporting upon the prevalence of whooping cough in Houghton and Studham remarks with reference to this disease that though it is popularly believed to be communicable yet no precautions are taken against infection, and adds that some systematic attempt should be made to educate the public on the measures necessary for its prevention. So long as there is the unfortunate belief that every child must have the disease, and the sooner the better, so long shall we have these unfortunate outbreaks.

### Diarrhœa.

The number of deaths registered from this cause in the County was 74, of which 53 occurred in the Urban and 21 in the Rural Districts.

The causation of diarrhœa was thoroughly investigated by Dr. Ballard in 1887, and all that is known of this disease is contained in his report to the Local Government Board, which has become historic. The conclusions he arrived at may be summarised as follows :—

**EARTH TEMPERATURE.**—When the four foot earth thermometer reaches 56° F. the summer rise of diarrhœal mortality commences. Atmospheric temperature and rainfall exert an indirect influence, merely as they affect the temperature of the soil.

**SOIL.**—A loose permeable soil habitually damp and polluted with organic matter, such as occurs where dwellings are built

upon made grounds, the refuse of towns, or where the ground around is polluted by leakage from defective drains, sewers or cesspits.

**DENSITY OF POPULATION.**—Aggregation favours, dispersion over area disfavours diarrhœal mortality.

**DENSITY OF BUILDINGS ON AREA.**—This exerts an unfavourable influence by restricting the circulation of air in and around dwellings in narrow streets and courts, particularly in back to back houses.

**INSANITARY CONDITIONS.**—Dirt, darkness, and defective ventilation of dwelling, with accumulation of domestic refuse in privies, ashpits, dustbins. Sewer or cesspool emanations. Absence of road scavenging.

**FOOD.**—The storage of food, particularly milk, in improper places, exposed to emanations from domestic filth, particularly when kept in dark and unventilated places.

**MATERNAL NEGLECT AND CARELESSNESS IN INFANT MANAGEMENT.**—Infants brought up by hand or bottle suffer most heavily from fatal diarrhœa, due chiefly to improper feeding and maternal neglect arising from the occupation of mothers from home.

Under this heading may be included the high rate of diarrhœal mortality among the illegitimate and those insured under the Infant Life Insurance Acts.

It will be seen that the prevention of diarrhœa depends to a large extent upon national, district, and domestic cleanliness, and the proper management of infants. Its particular preventive measures may be enumerated as follows :—

1. Prompt removal of excremental filth and refuse.
2. Cleanliness of dwellings, courts, and alleys.
3. Dryness and cleanliness of soil and a reduction of the level of the ground water.
4. Impermeable house sites, and the paving of open spaces about dwellings.
5. Free ventilation of dwellings and the regulation of the air space around.
6. Protection of food from infection.
7. Free lectures to women on the management of young children and the circulation through the Registrars, of handbills giving precise directions as to the feeding and nursing of infants.
8. The regulation of infant life insurance, a more careful method of death certification.

## Influenza.

The number of deaths directly attributed to this cause was 49, 18 of which occurred in the Urban and 31 in the Rural Districts.

The disease was epidemic at Ampthill and Luton Urban, and in the Biggleswade and Ampthill Rural Districts.

### Phthisis.

A considerable increase occurred in the number of deaths registered from this cause in the Rural Districts of the County, although the Urban death rate remains the same.

The following Table shows the number of deaths occurring in the Urban and Rural Districts and the County, with the death rates per 1,000 of their respective populations.

LOCALITIES.	ESTIMATED POPULATION. 1897.	PHTHISIS DEATHS.	PHTHISIS DEATH RATE PER 1,000 POPULATION. 1897.
Urban Districts ... ..	90,628	100	1'1
Rural Districts ... ..	78,841	70	0'8
Administrative County	169,469	170	1'0

The highest rate, 3'0 per 1,000, was again recorded in the Ampthill Urban District, followed by 2'0 per 1,000 in the Eaton Bray Rural and Leighton Buzzard Urban; the lowest, 0'5 per 1,000, in the Luton Rural District.

At Luton a record of the deaths from this disease has been kept for 19 years, which shows that 898 deaths have been registered during that period, 35 of which occurred during the year 1897, and, as the Medical Officer of Health points out, it is remarkable how evenly they have been distributed throughout the four quarters of the year. It is anticipated that the completion of the water and sewerage schemes now in hand will affect a reduction in the mortality.

The Medical Officer for the Eaton Socon Rural District tabulates the death rates from phthisis for the past 12 years, and shows there has been a marked decrease in the deaths from this disease since and including the year 1893.

This decrease is certainly very satisfactory, and is probably in part due to amendment of the sanitary conditions of building and premises as to dampness, ventilation, &c., and in the better recognition of the etiology and infectiveness of this disease, and the consequent increased care in the management and isolation of such cases, together with precautions as to the disinfection of sputa.

### Cancer.

The deaths from cancer are not particularly recorded in all of the returns furnished for the County, but the disease is specially alluded to in the reports of the Medical Officers of Health for Luton and Eaton Socon.

The returns of the Registrar General show that a considerable increase is taking place throughout the country, though certain counties appear to be much more affected than others.

The term, as generally used, includes all malignant growths and not merely the carcinomata.

More attention has been directed to its etiology in recent years and several Medical Officers now devote a special heading to it.

In the Borough of Luton 36 deaths were registered, and Dr. Sworder suggests that the lengthening duration of life brought about by improved sanitation has had something to do with the increase, more people now living in those ages when Cancer is likely to attack them.

Dr. Poyntz Wright gives the number of deaths registered from Cancer in his districts for the twelve years 1886 to 1897.

YEAR.	ST. NEOT'S URBAN.	CAXTON.	ST. NEOT'S RURAL.	EATON SOCON.	TOTALS.
1886	7	8	12	...	27
1887	6	5	7	...	18
1888	3	6	7	...	16
1889	2	11	13	...	26
1890	5	4	8	...	17
1891	4	4	20	...	28
1892	1	9	13	...	23
1893	3	6	9	...	18
1894	1	4	17	...	22
1895	4	7	11	5	27
1896	8	5	5	4	22
1897	7	6	14	3	30
Totals ...	51	75	136	12	274

He mentions that the valley and watershed of the Great Ouse is one of the three great Cancer beds of England, and adds:—

“There can be no doubt that Cancer is considerably on the increase. The deaths from this disease in England and Wales show a great increase during the decade, 1886-95, the first year giving a total of 16,243, the last 22,945, with a regular increase each year. The death rate per 1,000 of population in 1886 comes out at 5.90, whilst in 1895 it is as high as 7.55. The death rate in my districts as shown above, comes out higher again during the twelve years quoted, and amounts to 10.53.”

### Infectious Disease Notification.

The Infectious Disease (Notification) Act has now been adopted in all the Urban and Rural Districts throughout the County, with the exception of Leighton Buzzard. It is difficult to understand why this town continues to occupy such a position. One of the advantages of the Act is that an inspection of the sanitary

condition of infected houses necessarily follows, which is as highly desirable in Leighton Buzzard as elsewhere.

The Medical Officer of Health for the Borough of Dunstable reports that the only case of Scarlet Fever that occurred in his district was contracted by contact with children from a neighbouring village where the complaint had broken out, and where the Act not being in force communication was allowed during the infectious stage. This is a very good illustration of the danger arising from Leighton Buzzard which is the only town in the County which has failed to adopt this Act and thus becomes a standing danger to all the rest of the districts who have long since recognised their responsibilities and fulfilled their obligations in this matter.

The following table shows the number of cases notified in each district during the year :—

NOTIFICATIONS OF INFECTIOUS DISEASE THROUGHOUT THE COUNTY DURING THE YEAR 1897.

	Small Pox.	Scarlet Fever.	Diphtheria including Memb. Croup.	Ent'ric Fever.	Other Fevers	Erysipelas	Influenza.	Anthrax.	Cholera.
<b>URBAN DISTRICTS</b>									
Amphill ..	...	...	...	1	1	7	...	...	...
Bedford ...	...	95	66	6	1	22	25	...	...
Biggleswade ...	...	2	22	...	...	5	...	...	...
Dunstable ...	..	1	...	1	...	...	...	...	...
Kempston ...	...	4	1	2	1	3	...	...	...
*Leighton Buzzard }	...	3	3	4	...	...	...	...	...
Luton ...	...	185	12	37	12	53	Epidemic.	...	1
<b>RURAL DISTRICTS</b>									
Amphill ...	...	7	9	5	1	24	...	...	..
Bedford ...	...	15	38	6	1	18	...	1	...
Biggleswade ...	...	12	42	16	2	44	...	..	...
Eaton Bray ..	...	7	1	2	...	...	...	..	...
Eaton Socon ...	...	1	...	1	...	2	...	...	..
Luton ...	...	16	3	3	...	12	...	...	...
Woburn ...	...	46	16	3	...	6	...	..	...
Totals ...	...	394	213	87	19	196	25	1	1

\* The figures refer to cases coming to the knowledge of the Medical Officer of Health.

## Infectious Disease Prevention.

The Reports of many of the Medical Officers show that the duty of dealing with epidemic diseases has received careful attention.

The measures undertaken by the Sanitary Authority as gathered from the Reports appear to be to obtain isolation as far as practicable, either at home or in one of the few hospitals available.

Houses in which infectious disease has occurred are disinfected and cleansed free of charge, either by means of fumigation with sulphurous acid gas or by spraying the premises with a solution of corrosive sublimate (1 in 1,000) by means of an Equifex sprayer. Formalin and formic aldehyde gas have been employed to some extent by Dr. Poyntz Wright.

The disinfection of clothing, bedding, &c., is left very much to chance, inasmuch as no district possesses efficient means of steam disinfection.

Children belonging to infected households are prohibited from attending school, and the closure of local schools is recommended in the event of outbreaks of scarlet fever, measles, and whooping-cough.

Inquiries are made as to the cause of the disease, and the sanitary condition of the premises are investigated and defects remedied.

In the case of small-pox every effort is made to induce the inmates of infected households to be vaccinated or re-vaccinated, and every person who has been in contact with the patient for sixteen days previous to the attack is kept under observation for a fortnight, infected clothing being generally burnt, and compensation given under section 121 of the Public Health Act, 1875.

The Infectious Disease (Prevention) Act, 1890, is one of the most valuable preventive measures, and it is very desirable that this Act should be generally adopted.

The districts which have already adopted this Act are the Biggleswade, Kempston, and Luton Urban and the Woburn and Eaton Socon Rural Districts. It is hoped that the other districts will recognise its advantages and do likewise.

Dr. Hedges, Leighton Buzzard Urban, draws attention to the danger arising from the large number of vagrants who pass through the town and frequent the common lodging-houses. He mentions the necessity of common lodging-house keepers giving immediate notice of the occurrence of any infectious disease.

Section 84 of the Public Health Act, 1875, expressly provides for this though as a general rule it is seldom complied with.

## HOSPITALS FOR INFECTIOUS DISEASES.

Little, if any, progress has been made in this direction during the year, although the subject has continued to receive the attention of several districts and also of the county generally.

**Bedford, Urban.**—The Fever Hospital attached to the general Infirmary has been closed and nothing has been substituted in its place. The iron building which has been erected at the Elstow cross road has been furnished, but up to the present time is without a staff, and is not apparently adapted for the treatment of infectious diseases other than small-pox. A properly equipped and appointed hospital for this and the neighbouring districts is urgently required, and it would be much better that it should be built whilst there is time than hurriedly erected under the influence of panic.

**Bedford, Rural.**—No hospital accommodation is now available for this district, but the Medical Officer reports that steps have been taken to secure a site for a new Isolation Hospital, and he believes that one has been obtained upon the slope of Oakley Hill a little beyond Clapham, and, could the authorities of Bedford, Urban and Rural Districts, be induced to combine, he thinks that a hospital might be erected, central in position, and of such a size as to furnish employment for a permanent nursing staff, on more economical terms and without the increased expense and comparative inefficiency inseparable from two small institutions, each with its separate staff, and each alternately overcrowded or empty.

**Biggleswade, Rural.**—Some improvement is reported as having taken place in the equipment and administration of the Biggleswade Hospital, though there still appears to be very great reluctance on the part of the inhabitants to be removed thereto.

**Kempston, Urban.**—The closure of the Fever Hospital at the Bedford Infirmary has left the district entirely without any Isolation Hospital accommodation. This is a very undesirable state of affairs, and the Medical Officer recommends his council to take steps to provide a proper means of isolation. It appears that the district council hopes to enter into an arrangement with the Rural Authority as soon as their scheme has assumed definite form.

**Eaton Bray, Rural.**—This district has relinquished the right of removal to the Leighton Buzzard Hospital, and is now without any hospital accommodation for infectious cases.

**Leighton Buzzard, Urban.**—Dr. Hedges asks in his Report what is to be done with the old infectious hospital.

“ Buy land for its necessity, and further improve it to modern

requirements, in spite of its grievously bad, because low-lying situation, or dispose of the buildings to the guardians, who do not seem anxious to purchase; but who have issued an order not to permit the burial of excreta in the workhouse garden after a certain date? Permission however has been obtained to bury the excreta on other land hard by. The site is so low that water will not, or will scarcely run; it is evident that if connections are made with the new works that a patent sewage lift, costing a matter of £250, would become necessary. Undoubtedly, local authorities ought to be relieved of the necessity of providing Isolation Hospitals at all; the County Council is, far and away, the proper authority to supply the county's need of such necessities, as they could decide as to the different areas required; and as the Bucks parishes of our Union have provided themselves with a hospital; the Beds parishes might share in one placed at Houghton Regis or Tilsworth, or some such place as the County Council, in its wisdom, may see fit to provide."

With regard to this hospital a conference was held at Leighton Buzzard in February, 1898, from which it appeared that the present building was built forty or fifty years ago.

What is now the administrative block was first built by the Guardians as a small-pox hospital; subsequently the new block was built as a fever hospital. The previous block which had been used for small-pox was constituted into the administrative block, and a separate small-pox hospital was erected. The fever block was built without the sanction of the Local Government Board, but the Board agreed not to enforce the surcharge provided that the hospital was handed over by the Guardians to the then Rural Sanitary Authority, this was done. In 1891 the Parish of Leighton was created an Urban District, and the hospital thus became the joint property of the Leighton Buzzard R.S.A. and the Leighton Buzzard Local Board. By operation of the Local Government Act, 1894, the area of the Leighton Rural Sanitary Authority was divided into two Rural Districts, namely, the Linslade Rural District (containing the Bucks parishes of the Union), and the Eaton Bray Rural District (containing the Beds parishes of the Union other than Leighton Buzzard). Since then the Parish of Linslade, in Buckinghamshire, has been created an Urban District, and the title of the district containing the remaining Buckinghamshire parishes has been changed to that of the Wing Rural District. The hospital is, therefore, now the joint property of:—

The Leighton Buzzard Urban District Council,  
The Linslade Urban District Council,  
The Wing Rural District Council, and  
The Eaton Bray Rural District Council.

It was stated that the Bucks parishes own about 74 per cent. of the whole, and after discussion it was suggested that the

following parishes would form a convenient area, which might be constituted a hospital district, under the Isolation Hospitals Act, 1893.

NAME.	Population.	Acreage.
LEIGHTON BUZZARD ... ..	6704	2426
Eaton Bray Rural District consisting of:—		
	Population.	Acreage.
EATON BRAY ... ..	1330	2417
HEATH-AND-REACH ... ..	1090	2390
EGGINGTON ... ..	268	1372
BILLINGTON ... ..	350	1209
STANBRIDGE ... ..	402	1514
	—	—
	3440	8902
HOCKLIFFE ... ..	345	1028
TILSWORTH ... ..	219	1246
TOTTERNHOE ... ..	612	2321
WHIPSNAD ... ..	151	928
KENSWORTH ... ..	605	2553
STUDHAM ... ..	376	3033
	—	—
	12,452	22,437

I had an opportunity of inspecting the buildings on the Leighton Buzzard Workhouse site, which have been used as a hospital. They are not well equipped, and ill adapted for hospital purposes, but have proved very useful for the reception of small-pox patients. The means of disposal of sewage are unsatisfactory.

Several sites exist in the neighbourhood of Leighton Buzzard very suitably situated for the erection of a combined hospital. They would be near enough to the town to obviate the necessity of a resident Medical Officer (unless over 30 beds), and would be sufficiently accessible to tradesmen for the daily supply of provisions. If outside cases were received, at a fixed charge, the cost of maintenance would be considerably reduced.

**Luton, Urban.**—The Medical Officer of Health mentions that separate small-pox accommodation is required at Luton, and it must be remembered that the treatment of small-pox patients on the same site as other infectious diseases is no longer sanctioned by the Local Government Board.

Some of the existing hospitals in the County might be utilized with advantage for this purpose if good modern hospitals were erected for other infectious diseases. It is certainly far preferable that fully equipped and properly constructed hospitals for combined areas should exist of sufficient size to maintain an adequate and efficient staff able to act with promptitude and

kept in constant readiness, than that a number of small buildings often unfit for use as hospitals, should spring up all over the County.

An ambulance, disinfecting apparatus, and a temporary shelter are also required in connection with such hospitals, and it is unlikely that each Local Authority will go to the expense of providing these necessary accessories.

### Ambulances.

Properly constructed ambulances are much needed in many of the districts, and only one or two of the Urban Districts have made any provision in this direction. These vehicles have now reached such a state of perfection, that patients suffering from severe illness can be conveyed distances of 10 or 20 miles without inconvenience or injury.

Without an ambulance it is impossible to deal effectually with infectious disease, and no hospital now established would be considered complete without one. No doubt this matter will be considered along with the important question of hospital accommodation.

### Disinfection.

In nearly all the districts the disinfection of premises after the occurrence of infectious disease is carried out under the supervision of the officials of the Sanitary Authority.

The process adopted consists of fumigation by means of sulphurous acid gas, and the subsequent cleansing of the room. No doubt if the walls of infected rooms are stripped and cleansed, the ceiling limewashed, and the woodwork properly scrubbed with carbolic soap and water, the room will be effectually disinfected for the less infectious disorders such as diphtheria and enteric fever. Too much reliance should not however be placed on fumigation by means of sulphurous acid gas or chlorine, and if these methods are employed the walls and ceilings should be previously sprayed with water. A steam disinfecting apparatus is asked for by several Medical Officers.

Dr. Poyntz-Wright, Eaton Socon, reports :—

“ At the time of the small-pox outbreak I used the mercurial perchloride, with an Equifex Sprayer, with excellent results, and I asked my Councils at the time to purchase one each for their districts, but the expense proved an insuperable objection. I have now, during a considerable portion of the past year, been using Formic Aldehyde in its gaseous form by the vaporization of Paraform Aldehyde tablets by means of heat in the presence of water, produced by combustion of methylated spirit, I am also using it very freely in solution as formalin.

"It has been conclusively proved by the experiments of Drs. Kenwood, S. Rideal, and many others that in Formic Aldehyde we have a disinfecting medium which, in germicidal powers, is fully equal to the mercurial salt, whilst it has the incomparable advantage of being perfectly harmless in its nature. The value of its virtues was fully discussed at the Leeds Conference last year when papers were read upon the subject and experiments were carried out before a large number of Medical Officers of Health. It has the further merit that the alformant lamps, used for vaporization, are exceedingly cheap, and that the gas itself does not in any way affect textile fabrics, linen garments, blankets, clothes, wall papers, or pictures, whilst, by its penetrating power it effectually disinfects all such articles left in a room. The results of the experiments go to show that 20 grammes of Paraform Aldehyde when vaporized are quite sufficient to disinfect a room of 1,000 cubic feet at a cost of about three-pence. The lamp is so regulated, also, that the diffusion of the tablets will be effected within the short space of time of half-an-hour to one hour. Thus a medical inspector may wait for the diffusion being completed and then proceed to the next place, with the further advantage as to saving of time that he need not again return to the same premises, and need not, as is now done with other methods of disinfection, take an inventory of the articles to be sent out for special disinfection."

### Water Supplies.

The disastrous effects of a polluted public supply were fully illustrated last year by the Maidstone epidemic of enteric fever, which cost that borough no less than £17,522, stopped the trade of the district for many months, and spread ruin and desolation in hundreds of families. It had, however, the result of forcibly drawing the attention of Sanitary Authorities to this question, and the Local Government Board issued a circular to Town Councils and other bodies with reference to water supplies of districts not within the supply of water companies.

The Board requested generally that accurate information should be procured, if not already available, in such matters as the following:—

1st. "Where water is derived from gathering grounds or from springs. Whether drainage from human habitations, farm yards, and the like finds its way directly or indirectly into the reservoir, or to any part of the water service; and whether risk of access to the water of human excreta and similar refuse is likely to arise.

2nd. Where water is derived from deep wells. Whether surface or other water liable to be contaminated by drains, sewers, cesspools, and the like, reaches, or is liable to reach, the wells. The existence and direction of fissures in the strata deserve especial consideration in this respect.

3rd. Where water is derived from shallow wells. Whether the wells are so circumstanced that they run risk of contamination by reason of drains, privies, cesspools, or middens, or by the deposit of manure—whether derived from human excreta or not—in or on ground in the neighbourhood of the wells.”

There is no doubt that an examination of the source, storage and distribution of the water supplies of all districts should be frequently and systematically carried out, and should include a chemical and bacteriological analysis of the water.

It is only by such periodical examinations that a local, chemical, and bacteriological standard can be established, any deviation from which would indicate the probability of pollution. It must, however, be remembered that a pollution which may be harmless one day may become virulently harmful the next, owing to the introduction of specific infection.

The bacteriological examination of a water should include an estimation of the number and kind of bacteria present, special attention being paid to the presence or absence of micro-organisms belonging to the Coli group, and more particularly to the specific water-borne bacilli.

It is generally considered that a water containing 100 bacteria to the cubic centimetre may be regarded as a fairly good water, provided none of the bacilli of the specific water-borne diseases are included therein.

The bacteria belonging to the Coli group are found chiefly in the intestines of man and animals, and are discharged in immense quantities in the alvine excretions. Their presence in considerable numbers indicates animal or human fœcal contamination, and any departure from the normal local standard would suggest an investigation into its cause, and possibly the condemnation of the water.

The condition of the water supplies of many of the districts in the County continues very unsatisfactory.

**Amphill Urban.**—Amphill is supplied with water by wells sunk into the sand ; the average depth appears to be 30 feet.

The quality of the water found in the wells is in some cases too impure for drinking. The question of a public supply of water has been under the consideration of the Sanitary Authority for some time.

During the year two attempts have been made to obtain a wholesome supply of water for the town, in each case the quantity has been deficient,

**Amphill Rural.**—In the Amphill Rural District the water is derived chiefly from wells.

The condition of the supply at Cranfield and Marston requires attention.

**Bedford Rural.**—In the Bedford Rural District the water supply of the villages is reported as derived from springs and wells, very generally insufficiently protected or too close to houses and yards; or from ponds and water-holes, of which the latter are occasionally only a continuation of land ditches.

**Biggleswade Urban and Rural**—The water is derived from shallow polluted wells, and a wholesome supply is urgently required.

**Dunstable.**—The Medical Officer for Dunstable recommends a quarterly analysis of the public company's water.

**Eaton Bray Rural.**—The water supply of this district remains in a most deplorable condition. The majority of the wells appear to be polluted, and the Medical Officer reports that a new supply for the district is a matter of urgent necessity.

**Kempston (Urban).**—The water supply of this Urban District continues in a most unsatisfactory condition. Samples taken at random have been subjected to analysis and found so contaminated as to be unfit for drinking purposes.

Dr. Butters goes on to say that from his knowledge of the district, he thinks he may fairly infer that there are other wells, the water of which, if analysed, would produce similar unfavourable reports. At all events, the Council are now aware that some of the wells are contaminated. Such knowledge should at once suggest that early consideration should be given to the improvement of the water supply. On the other hand, he states that he is no advocate for a common water supply, providing a good, what might be termed individual, supply was obtainable. An epidemic, such as typhoid fever, would be much easier controlled in a district where the water supply for three or four families was derived from one source, compared with a district where one common source supplied the whole population. In the meantime, he would recommend that all water used for drinking purposes should first be boiled.

**Leighton Buzzard.**—New waterworks have been provided, with a constant service. Unfortunately the water deposits red oxide of iron on exposure to the air, which has given rise to some dissatisfaction, otherwise the water is reported as singularly pure and soft.

**Luton Rural.**—Schemes for Barton and Stopsley are under consideration. The wells are guarded.

### Pollution of Rivers and Streams.

Except in the special report of the Medical Officer of Health for Biggleswade no mention is made in any of the reports of any specific pollution of the rivers Ouse, Ivel, or Lea.

The condition of the effluent of the Bedford Sewage Farm which is discharged into the river Ouse, has received a considerable amount of adverse criticism.

### **Drainage, Sewerage, and Disposal of Excrement.**

The question of sewage purification has occupied considerable attention during the year, and methods of treatment by natural or biological means rather than by chemical agents have been brought prominently forward.

One of the most natural systems of disposal of sewage is no doubt its application to land, but it now appears that the success of the process depends upon the growth of micro-organisms in the superficial layers of the soil. These microbes possess the power of converting the nitrogenous matter contained in all sewage into nitric acid, which then combines with the alkalies present in the soil to form nitrates. The beneficial effect of the addition of a small quantity of lime to the soil of some sewage farms is thus explained. Nevertheless, sewage farms are not popular, owing to the difficulty of obtaining suitable land and the frequency of the complaints made with regard to them, in fact broad irrigation without previous clarification is now seldom relied upon.

Two systems of the biological treatment of sewage are at present under experimental trial, the *ærobic* in which the destruction and liquefaction of organic matter is brought about by means of micro-organisms which do their work in the presence of air, and the *anærobic* in which the same result is produced by micro-organisms which thrive in its absence.

The first method is being carried out at Sutton, where crude sewage is intermittently passed through a filter bed of coarse ballast, by means of which the suspended matter of the sewage is entangled in its meshes and forms a film or culture medium for the development of living micro-organisms which feed upon the organic matter. In this process the micro-organisms require frequent oxygenation and the filter beds must be frequently emptied to admit air to every crevice. The best results have been obtained by tanks working alternately

The *anærobic* or Septic tank system has been at work at Exeter since August, 1896. Here air is rigidly excluded, and a fermentative action of a putrefactive character is encouraged, the process being necessarily continuous. The micro-organisms affecting the destruction of organic matter in this process only thriving in the absence of oxygen.

Both these two methods are based upon natural and scientific principles, and are said to give fairly satisfactory analytical results, avoiding the use of chemicals and removing all difficulties connected with the disposal of sludge.

The Exeter system has recently been subjected to a searching inquiry, which has resulted in its receiving the sanction of the Local Government Board.

A brief summary of the working of these two systems may therefore be of interest.

At Sutton the crude sewage is passed through a screen and then enters a rough filter which may be said to be an excavation in the clay, the clay extracted being burnt into ballast, and then returned into the excavation. The sewage enters the filter on its surface and is discharged by means of pipes laid at the bottom of the ballast. The sewage is allowed to fill the tank nearly to its surface which takes about three-quarters of an hour. It is then allowed to remain for two hours. The tank is then slowly emptied and allowed to aerate for two hours, after which it is again ready for the reception of sewage.

The filtrate from the first or rough filter then flows on to another filter of finer material such as coke or sand, and is treated exactly the same way as in the first filter.

The effluent from this is then discharged directly into the river or over the sewage farm.

According to Dibdin "the action of a biological filter is twofold"—

- (1) "It separates mechanically all gross particles of suspended matter.
- (2) It affects the oxidation of organic matters, both those in suspension and those in solution, through the agency of living organisms.

It is the establishment and cultivation of these organisms which is to be aimed at in the scientific process of purification by filtration.

Three conditions are essential. First, the organisms must be supplied with plenty of air; secondly, there must be present a base, such as lime, with which the nitric acid can combine; and thirdly, the biological action must take place in the dark, *i.e.*, in the body of the filter, and not in the water exposed to the light above the filtering material. Filtration on biological lines of sewage or other foul water containing in solution but little free oxygen and a large quantity of oxidisable organic matter, therefore means:—

- (1) That the filter by cautious increments in the quantity of effluent, which in itself contains the necessary organisms, must at the outset be gradually brought to a state of high efficiency. This condition will be shown by the existence in the filtrate of a constantly increasing proportion of nitric acid.

- (2) That the contact of the micro-organisms with the effluent to be purified must be effected by leaving such effluent to rest in the filter for a greater or less time,

according to the degree of purification required, the process being analogous to that of fermentation.

- (3) That after each quantity of effluent has been dealt with the micro-organisms must be supplied with air, which is readily effected by emptying the filter from below, whereby air is drawn into the interstices. The filter must stand empty for an hour or more previous to another filling.

The life of a filter worked in this way is practically without limit."

In the Exeter system the sewage is conducted into covered tanks from which air and light are as far as possible excluded.

Through these it is allowed to pass slowly, the heavier matters in suspension being deposited at the bottom.

The solid matters present in the sewage are brought into solution by the growth of liquifying micro-organisms, by whose action the organic solids are broken up into simpler substances which can then be dealt with by filtration.

The growth of these organisms is hastened by the formation of a scum upon the surface of the contents of the tank.

The tank effluent is then conducted through a coke breeze filter bed similar to that in use at Sutton and is either discharged directly into the river or subjected to further filtration through land. The flow through the tanks is continuous, and their efficiency is unaffected by ordinary amounts of storm water.

The effluent is said to be inoffensive, and almost clear, and practically free from solids in suspension.

I have dealt with this matter somewhat fully, inasmuch as, should these biological methods meet with the approval of the Royal Commission now appointed to inquire into the best methods of sewage disposal, they will be particularly applicable to Rural Districts inasmuch as the expenses of their establishment and maintenance is far less than other sewage works, the labour required is slight, and their efficiency does not depend upon the intelligence of the attendant.

The condition of the County with regard to this matter remains practically the same as reported last year, and but little progress has been made.

**Amphill Urban.**—A sewerage and sewage disposal system is urgently required. The matter has been dragging on for some years. A scheme is reported as now under the consideration of the Local Government Board, and it is high time that something should be done in the matter, particularly when the source and condition of the water supply is taken into consideration.

**Amphill Rural.**—In the Amphill Rural District privies and cesspools are mostly in use, but a new sewer has been laid at Cranfield.

**Bedford Rural.**—Earth closets and pails are in use. With regard to the advantages of the earth closet or pail system as applied to villages, Dr. Prior (Bedford Rural), reports "that it has been adopted with great advantage in villages which are comprised in the Bedford Estate and elsewhere where there is ample ground, whether cultivated as allotment land, or still better as garden ground, contiguous to houses, but where these advantages do not exist it requires sharp looking after, and is apt to degenerate into a series of recurrent, if not permanent, nuisances."

**Biggleswade Urban.**—The condition of this town with regard to its sewage disposal remains practically the same as detailed in the County Medical Officer's special report in 1896. A sewerage scheme was brought forward, but it was rejected by the Local Government Board, and now remains apparently in abeyance. Privies, cesspits, and cesspools are to be met with everywhere, and what sewers exist are mostly connected with the highway drain, and discharge directly into the river Ivel.

**Biggleswade Rural.**—Some improvement seems urgently required in the method of disposal of excrement. Complaints of overflowing privies constantly occur.

**Dunstable Urban.**—The question of the sewerage and sewage disposal still remains in abeyance, and in a most unsatisfactory condition. More than one scheme has been considered, but nothing as yet been decided. The Medical Officer points out the urgent necessity of taking immediate steps to remedy the defects at the present outfall.

**Eaton Bray Rural.**—No improvement in the present deplorable method of disposal of excreta is reported from this district.

**Kempston Urban.**—A system of surface drainage is in progress which will remedy many of the defects of the cottage dwellings, but no system of sewerage or sewage disposal has been provided, the absence of which apparently gives rise to the pollution of the subsoil from which the water supply is derived.

**Luton Urban.**—The main drainage and storm-water scheme is in process of completion.

### Removal of Refuse.

Several of the Medical Officers make no allusion to the removal of refuse in their districts, but as far as can be ascertained

from the Reports, the following authorities have adopted public scavenging :

Amphill Urban	Kempston Urban
Bedford Urban	Luton Urban
Biggleswade Urban	Eaton Bray Rural
Dunstable Urban	Luton Rural

In most of the Rural Districts it is left to private enterprise, but in nearly all the Urban Districts it is undertaken by the authorities themselves.

In one or two places it is carried out by contract under the supervision of an Inspector.

It is, however, much better that public scavenging, that is, the cleansing of streets, ash-pits, privies and cesspools, should be entirely in the hands of the Sanitary Authorities, as the system of contracting for the work is seldom, if ever, satisfactory.

There is no doubt that an efficient system of refuse removal and street scavenging plays an important part in the maintenance of the healthiness of towns, particularly in the reduction of the diarrhoeal diseases so prevalent in large Urban Districts during the summer months. Where the streets, courts, and back yards of such places are kept properly cleansed and periodically disinfected, a great reduction in the diarrhoeal prevalence and mortality has been effected.

It has been shown that the micro-organism giving rise to epidemic diarrhoea is found in enormous quantities in horse manure, and when the latter is freely distributed over the roads and allowed to remain, myriads of these organisms become airborne and carried about with the particles of dust arising therefrom, and are then easily inhaled, and cause contamination of milk and other foods

### House Sanitation.

The sanitary condition of the dwellings of the working classes is not particularly alluded to in the majority of the reports, though it is to be hoped that this important matter has received attention.

The Medical Officer for the Amphill Rural District reports "that the systematic and house-to-house inspection of all the villages in the district which has been carried on during the year is a step of the highest importance, and will raise the sanitary character of the district materially."

The Medical Officer of Health for the Eaton Socon Rural District reports that the question of overcrowding frequently presents many difficulties, and in sparsely inhabited and purely rural districts, has to be dealt with with considerable caution.

A great number of people fail to recognise that there is a vast difference between overcrowding in rural areas, and similar conditions in large towns and cities. Circumstances alter cases, and whilst entirely deprecating the existence of overcrowding, both from a sanitary and moral point, those drastic measures, which would be imperative in the small courts and alleys of populous towns and cities, where the air space is confined and the air itself vitiated and stagnant, may, to some extent, be safely abrogated in the case of cottages situated in the open country and surrounded with an unlimited supply of pure fresh air constantly in motion.

### Schools.

The Medical Officers of one or two of the districts makes special reference to the sanitary condition of schools, and report that a systematic inspection of school premises, class rooms, and drainage has been undertaken.

It is recommended that the class rooms should be frequently lime-whited, the lime-wash to be mixed with a little salt rather than with size, the woodwork washed with soft-soap and warm water and the floors beeswaxed.

### Dairies, Cow-sheds, and Milk-shops.

Reference is made in most of the Reports to the inspection of these premises, and for the most part their condition is described as satisfactory, but, as far as can be ascertained from the Reports, proper regulations are not in force in the following districts :—

#### URBAN DISTRICTS.

Ampthill  
Bedford  
Biggleswade  
Dunstable  
Leighton Buzzard

#### RURAL DISTRICTS.

Ampthill  
Bedford  
Biggleswade  
Eaton Bray  
Luton  
Woburn

Dr. Pontyz-Wright, Eaton Socon Rural, is at present engaged in making a special inspection and investigation of the water supply of each of the dairies in his district, not only those that supply milk locally, but also those sending their milk to London and other large centres. Analyses sufficient to prove the presence or absence of pollution from vegetable or animal organic matter, will be duly made, tabulated, and reported hereafter. For obvious reasons names and addressess will be with-held, but each dairy will be represented by a number. In those cases where the water is impure, instructions will be issued for a discontinuance of its use, or the sale of the milk will be stopped

under the Infectious Disease (Prevention) Act. Apart from the mere fact of adulteration, the addition of water to milk is a matter for careful consideration, from the great danger arising from the possibility that the adulterating water may be polluted, and capable of producing typhoid.

It is to be hoped that those authorities who have not yet adopted regulations under the Dairies, Cow-sheds, and Milk-shops Orders, 1885 and 1886 will recognise the great danger to the public health, which arises from the insufficient supervision of such premises and the insanitary conditions, structural and otherwise, of the sheds in which milch cattle are kept.

The report of the Royal Commission on Tuberculosis issued in 1898, recommends that the adoption of these regulations should be made compulsory, and that in Urban Districts no cow-shed shall be registered within 100 feet of any dwelling.

Future regulations shall include the following :—

1. An impervious floor.
2. A sufficient water supply for flushing.
3. Proper drainage.
4. A depot for the manure at a sufficient distance from the byres.
5. A minimum cubic contents as regards such districts of 600 to 800 feet for each adult beast varying according to the average weight of the animals.
6. A minimum floor space of 50 feet to each adult beast.
7. Sufficient light and ventilation.

Existing cow-sheds should be obliged to conform to the prescribed regulations within a period of 12 months from the time of the regulations coming into force.

The Commissioners also recommend that where a milk supply of one district is derived from another, the local authority of the district in which the cows are housed shall, when required, supply full information and veterinary reports regarding the condition of the cows, byres, etc., whence the milk is drawn.

It is also recommended that the notification of every disease of the udder should be made compulsory.

### **Slaughter Houses.**

The majority of the Reports mention that the inspection of slaughter-houses has been carried out, and that they are, with few exceptions, fairly well kept.

The Report of the Royal Commission on the dangers arising from the use as food of the meat of tuberculous animals has been recently issued.

The Commissioners recommend that :—

- (a) When the local authority in any Urban District have provided a public slaughter-house, power be conferred on them to declare that no other place in the town or borough shall be used for slaughtering.
- (b) That when a public slaughter-house has been established, inspectors shall be engaged to inspect all animals immediately after slaughter, and stamp the joints of all carcasses passed as sound.

They also recommend the following principles should be observed in the inspection of tuberculous carcasses of cattle :—

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>(a) When there is miliary tuberculosis of both lungs.</li> <li>(b) When tuberculous lesions are present on the pleura and peritoneum</li> <li>(c) When tuberculous lesions are present in the muscular system, or in the lymphatic glands embedded in or between the muscles.</li> <li>(d) When tuberculous lesions exist in any part of an emaciated carcass.</li> </ul> | } | The entire carcass and all the organs may be seized.  |
| <ul style="list-style-type: none"> <li>(a) When the lesions are confined to the lungs and the thoracic lymphatic glands.</li> <li>(b) When the lesions are confined to the liver.</li> <li>(c) When the lesions are confined to the pharyngeal lymphatic glands.</li> <li>(d) When the lesions are confined to any combination of the foregoing, but are collectively small in extent.</li> </ul>                | } | The carcass, if otherwise healthy, shall not be condemned, but every part of it containing tuberculous lesions shall be seized. |

In view of the greater tendency to generalisation of tuberculosis in the pig, it is considered that the presence of tubercular deposit in any degree should involve seizure of the whole carcass and of the organs.

In respect of foreign dead meat, seizure shall ensue in every case where the pleura has been "stripped."

### Adulteration of Food.

Particulars as to the results of analysis of the samples submitted to the County Analyst will be found in Dr. Stevenson's quarterly reports to the County Council.

The appended Table is a summary of the number kind, and result of analysis of the samples taken during theyear 1897.

Article Submitted for Analysis.	No. of Genuine Samples.	No. of Adulterated Samples.	Remarks as to Adulteration.
Apricot Jam ... ..	2		
Arrowroot ... ..	4		
Black Currant Jam ...	1		
Brandy ... ..		1	Contained $\frac{1}{2}$ % Water.
Bread ... ..	5		
Buns ... ..	2		
Butter ... ..	25	2	Samples of Margarine sold as Butter.
Cake ... ..	1		
Castor Sugar ... ..	1		
Castor Oil ... ..	1		
Cheese... ..	4		
Chocolate Bars ... ..	1		
Coffee and Chicory ...	3		
Coffee ... ..	7		
Condensed Milk ... ..	1		
Cream of Tartar ... ..	1		
Currant Cake ... ..	1		
Damson Jam ... ..	2		
Flour ... ..	2		
Gin ... ..	2		
Ginger... ..	2		
Gregorys' Powder ... ..		1	Contained Carbonate of Magnesium in lieu of Magnesia.
Ground Cassia ... ..	1		
Ground Ginger ... ..	3		
Ground Pimento ... ..	1		
Ground Rice ... ..	1		
Hokey Pokey... ..	1		
Honey ... ..	2		
Lard ... ..	15		
Lemon Squash ... ..	1		
Margarine ... ..	1		
Milk .. ..	20	13	{ 11 samples were deficient in butter fat from 7 to 84%. Other samples contained from 2 to 8% water.
Mustard .. ..	6	2	Contained from 10 to 15% Wheaten Flour.
Oatmeal ... ..	3		
Olive Oil ... ..	2	1	Contained 90% Cotton Seed Oil.
Pepper... ..	7		
Plum Jam ... ..	1		
Precipitated Sulphur...	2		
Raspberry - flavoured Jam ... ..	1		
Rum . ... ..	1		
Rhubarb Root ... ..	1		
Rice Cake ... ..	1		
Senna ... ..	1		
Sugar ... ..	6		
Sulphur Lozenges ... ..	1		
Sweetmeats ... ..	5		
Sweet Spirit of Nitre...	1	1	Deficient in Nitrous Ether 15%.
Syrup of Phosphate of Iron ... ..		1	Deficient in Phosphate of Iron 94%.
Tapioca ... ..	2		
Tea ... ..	6		
Tincture of Quinia ... ..	1		
Tincture of Lobelia ... ..	1		
Tincture of Rhubarb...	1		
Vinegar ... ..	1		
Whisky ... ..	2		

There were 8 prosecutions during the year under the Sale of Food and Drugs Acts in which the offenders were convicted and fined. There were also 3 convictions for offences under the Margarine Act.

At Luton 60 samples were submitted to the Public Analyst, including 40 of milk and 14 of butter.

Two samples of milk were found to be adulterated, and proceedings were resorted to in seven instances, the defendants being fined sums varying from 12s. 6d. to £1 12s. od.

Dr. Fegen (Amphill Rural) reports "that practically no inspection of food, drugs and milk is made in the district, and consequently the poorer classes are victimised, and their vitality (especially in children) is lowered through the action of unscrupulous traders."

With these exceptions, no mention is made in the Reports of any supervision or inspection of food, and no inspectors under the Act have apparently been detailed for this purpose.

### Bye-Laws.

But little information is afforded as to what bye-laws are in force in the various districts in the County, but it appears that none have been adopted in the Dunstable Urban and the Amphill Rural Districts.

### Miscellaneous.

**Anthrax.**—An outbreak of Anthrax was reported from the Bedford Rural District. The Medical Officer visited the house the same day, but the patient was dead before his arrival.

Some information as to how the disease was contracted would have been valuable.

Since 1886, Anthrax has been scheduled under the Diseases of Animals Acts, so that all cases have to be reported to the local authorities (who in this matter are responsible to the Board of Agriculture), and proper measures of precaution are enforced. The carcase has to be buried with the hide intact.

**Markets.**—At Leighton Buzzard the Board of Agriculture has required the Council to pave the market under the threat of closure in case of default.

**Recreation Grounds.**—The report of the Medical Officer of Health for Eaton Bray alludes to the advantages accruing to the public health by the possession of a recreation ground at Standbridge which he reports as about to be levelled and enclosed.

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## SUMMARY of the SANITARY REQUIREMENTS of the various Districts as disclosed in the Reports.

For the purpose of rapid reference I have this year tabulated a summary of the sanitary requirements of the various districts as disclosed in the Reports of the Medical Officers of Health.

It does not necessarily follow that because no mention is made of other requirements that such do not exist, and it may be remembered that the persistent failure of a Medical Officer of Health to disclose in his Reports the failure of his Authority to enforce the provisions of the Public Health Act is one of the grounds upon which County Councils may make complaint under Sec. 299 of the Public Health Act, 1875, that such Authority has failed to put in force the provisions of the Act.

### **Amphill (Urban)—**

1. A wholesome water supply.
2. Efficient sewerage and sewage disposal system.
3. Adoption of the Infectious Disease (Prevention) Act and Public Health Acts Amendment Act.
4. Adoption of a series of model bye-laws.
5. Provision of isolation hospital accommodation.
6. Provision of an efficient disinfecting apparatus.

### **Bedford (Urban)—**

1. Isolation Hospital.
- No other requirements disclosed in Report.

### **Biggleswade (Urban)—**

1. Provision of an efficient sewerage and sewage disposal system.
2. A wholesome water supply.
3. An efficient apparatus for public disinfection of bedding, &c.
4. Cessation of the pollution of the river.
5. Improvement in the dwellings of the working-classes.

### **Dunstable (Urban)—**

1. Provision of sufficient isolation hospital accommodation.
2. An efficient disinfecting apparatus.
3. A sewerage and sewage disposal system.
4. Quarterly analyses of water supply.
5. Adoption of the Infectious Disease (Prevention) Act, 1890.

6. Regulations under the Dairies, Cow-sheds, and Milk-shops Order.
7. A series of model bye-laws.

**Kempston (Urban)—**

1. Provision of efficient isolation hospital accommodation.
2. A steam disinfecting apparatus.
3. A wholesome water supply.
4. A sewerage and sewage disposal system.
5. Adoption of a series of model bye-laws.

**Leighton Buzzard—**

1. Provision of efficient hospital accommodation.
2. A steam disinfecting apparatus.
3. A proper system of scavenging.
4. Adoption of the Infectious Disease (Notification) Act.
5. The Infectious Disease (Prevention) Act.
6. The Public Health Act Amendment Act.

**Luton (Urban)—**

1. Extension of Spittlesea Hospital.
2. Provision of separate small-pox accommodation.
3. Purchase of a steam disinfecter.
4. Abolition of bell traps.
5. Provision of proper water supply to every closet.
6. Systematic examination of house drainage.
7. Flushing of the sewers.
8. Paving back yards in populous localities.

**Amphill (Rural)—**

1. Provision of isolation hospital accommodation.
2. Improvement of water supply at Cranfield and Marston.
3. Adoption of the Infectious Disease (Prevention) Act and the Public Health Acts Amendment Act, 1890.
4. Adoption of bye-laws with regard to new buildings, &c.
5. Regulations under the Dairies, Cow-sheds, and Milk-shops Order, 1885.
6. Enforcement of the Food and Drugs Acts, particularly with regard to milk.

**Bedford (Rural)—**

1. Provision of isolation hospital accommodation.
2. Improvement in water supply.
3. Improvement in the method of sewage disposal.

**Biggleswade (Rural)—**

1. Improvement in water supply.
2. Adoption of some system of sewage disposal.
3. Information with regard to general sanitation of the district.

**Eaton Bray (Rural)—**

1. Provision of isolation hospital accommodation.
2. An efficient disinfecting apparatus.
3. A wholesome water supply.
4. An efficient method of sewage disposal.
5. Adoption of Permissive Acts and Bye-laws.

**Eaton Socon—**

1. Provision of isolation hospital accommodation.
2. A steam disinfecter.

**Luton (Rural)—**

1. Provision of isolation hospital accommodation
2. A steam disinfecter.
3. Adoption of the Infectious Disease (Prevention) Act.
4. A series of model bye-laws.

**Woburn (Rural) —**

1. Isolation hospital.
2. Improvement in water supply.
3. Improvement in methods of sewage disposal in parts of the district.
4. Information as to means of disinfection.

**Barabanki (Rural)**—

1. Provision of isolation hospital accommodation.
2. Improvement in water supply.
3. Improvement in the method of sewage disposal.

**Bhagwanpore (Rural)**—

1. Improvement in water supply.
2. Adoption of some system of sewage disposal.
3. Information given regarding the General Sanitation of the district.

**Bhatnagar (Rural)**—

1. Provision of isolation hospital accommodation.
2. An efficient disinfecting apparatus.
3. A wholesome water supply.
4. An efficient method of sewage disposal.
5. Adoption of Germicide Act and the Act.

**Bhatnagar (Rural)**—

1. Provision of isolation hospital accommodation.
2. A steam disinfecter.

**Bhatnagar (Rural)**—

1. Provision of isolation hospital accommodation.
2. A steam disinfecter.
3. Adoption of the Infectious Diseases (Prevention) Act.
4. A series of milk pasteurators.

**Wardha (Rural)**—

1. Isolation hospital.
2. Improvement in water supply.
3. Improvement in methods of sewage disposal in parts of the district.
4. Information as to the Germicide Act.

SANITARY CONDITION OF THE PARISH OF  
EATON BRAY.

The results of the investigation made by the Health Officer  
were reported to the Local Government Board in a  
report dated 21st July 1901. The report states that  
the sanitary condition of the parish is generally good,  
but that there are some points which require attention.  
The report also states that the water supply is  
adequate and that the drainage system is satisfactory.

ENGLESWAYE URBAN DISTRICT

**PROCEEDINGS of the COUNTY COUNCIL  
WITH REGARD TO SANITATION.**

The County Council has received a report from the  
Health Officer regarding the sanitary condition of  
the district. The report states that the sanitary  
condition is generally good, but that there are  
some points which require attention. The Council  
has decided to take the following steps to improve  
the sanitary condition of the district:

1. To improve the drainage system.
2. To improve the water supply.
3. To improve the housing conditions.

ENGLESWAYE RURAL DISTRICT

Pollution of the River Haze at Arlesey.

The County Council has received a report from the  
Health Officer regarding the pollution of the River  
Haze at Arlesey. The report states that the  
pollution is caused by the discharge of sewage  
into the river. The Council has decided to take  
the following steps to improve the sanitary  
condition of the district:

1. To improve the drainage system.
2. To improve the water supply.
3. To improve the housing conditions.

PROCEEDINGS of the COUNTY COUNCIL  
WITH REGARD TO SANITATION.

## SANITARY CONDITION OF THE PARISH OF EATON BRAY.

As a result of the representation made by the Bedfordshire County Council to the Local Government Board on the 22nd December, 1896, an Inquiry was held at Eaton Bray by an Inspector of the Board, on the 17th June, 1898, with reference to the failure of the Eaton Bray Rural District Council to provide the Parish of Eaton Bray with sewers for effectually draining their district within the meaning of the Public Health Act, 1875, sec. 15. The Clerk of the Council appeared on behalf of the County Council, and Dr. Wilde, Dr. Sandell, and the County Surveyor gave evidence in support of the complaint. The decision of the Local Government Board has not yet been received.

## BIGGLESWADE URBAN DISTRICT.

On the 5th February, 1897, the Council directed a print of the Report of the County Medical Officer of Health on the sanitary condition of the Biggleswade Urban District to be forwarded to the Urban District Council, and the consideration of the Report was postponed for a period of six months. At the meetings of the County Council held in August and November, 1897, the consideration of the matter was further postponed pending the progress of a sewerage scheme which had been adopted by the Urban District Council. An inquiry was held in the early part of the present year by an Inspector of the Local Government Board with reference to an application from the Urban District Council for sanction to a loan to enable them to carry out their proposed scheme. The sanction of the Board was refused. At a meeting of the County Council held on the 13th May, 1898, it was resolved that the Biggleswade Urban District Council be requested to state what further action they propose to take, and that they be informed that in the opinion of the County Council no system can be deemed satisfactory which does not free the County main road drains from the sewage pollution which at present exists.

## BIGGLESWADE RURAL DISTRICT.

### Pollution of the River Hiz at Arlesey.

As mentioned in the Annual Report of the County Medical Officer of Health for the year 1896, an inquiry was held on the 18th March, 1897 by an Inspector of the Local Government Board relative to the application by the Biggleswade Rural District

Council for power to compulsorily acquire lands for the purpose of the sewerage, sewage disposal and water supply of the parish of Arlesey, but the proposed site was not approved by the Local Government Board. Notices are now being served by the Rural District Council on the various owners requiring them to provide impervious cesspools. The District Council have also purchased tanks, pumps, and appliances in order to provide for the cesspools to be emptied weekly and the contents carried on to the land. By this system it is believed that all possibility of contamination of water-courses will in future be avoided.

## BEDFORD RURAL DISTRICT.

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### Wymington Brook.

On the 9th October, 1897, a Committee was appointed to inquire into a complaint by the Wymington Parish Council relative to the insanitary condition of the Wymington Brook arising from sewage pollution. A Report on the subject was submitted to the County Council on the 4th February, 1898, when it was resolved that the attention of the Rural District Council be drawn to the condition of the brook and that they be requested to make such arrangements as might be necessary for the proper drainage of the village and the abatement of the nuisance. The further consideration of the complaint of the Parish Council was postponed until the meeting of the County Council to be held in August 1898. It is believed that a scheme dealing with the question is under the consideration of the Rural District Council

## KEMPSTON URBAN DISTRICT.

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### Drainage and Water Supply.

Acting upon a recommendation of the General Purposes Committee the County Council on the 5th November, 1897, resolved that the attention of the Kempston Urban District Council be called to the urgent necessity which exists of providing a proper system of drainage and sewage disposal, and of water supply for their District, and that they be requested to inform the Council what steps they propose to take with regard to these matters. A reply was received from the Urban District Council stating that the matter was receiving their attention, and the General Purposes Committee at their meeting in January 1898 resolved to postpone the consideration of the subject pending a

further reply from the Urban District Council as to their present system of sewage disposal. The Urban District Council stated that they believed the water supply of the District to be generally satisfactory and that they were taking steps to test the purity of the water. Subsequently at the meeting of the General Purposes Committee in April, 1898, a further communication was received from the Urban District Council stating that the house drainage of the district is carried into dumb wells which are systematically emptied by the Council and that the scavenging and emptying of slops is also undertaken by the Council. The Committee decided to take no further action for the present.

URBAN DISTRICTS

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URBAN DISTRICTS.

URBAN DISTRICTS

SUMMARIES OF REPORTS  
OF THE  
MEDICAL OFFICERS OF HEALTH.

AMPTHILL (URBAN).

*Medical Officer of Health.*—WM. J. TAYLOR, L.R.C.S., L.R.C.P.

Area in acres, 1,742. Census population, 2,294.

	1894.	1895.	1896.	1897.
Population estimated to middle of year ...	2,294	2,294	2,294	2,294
Birth rate per 1,000 of the population ...	28·7	24·4	21·3	23·4
General death rate per 1,000 ...	17·9	17·0	14·3	17·4
Corrected general death rate per 1,000 ...	—	—	—	14·8
Zymotic death rate per 1,000 ...	0·87	0·0	0·8	0·8
Death rate from phthisis ...	3·4	0·87	3·0	3·05
Death rate from respiratory diseases ...	1·3	1·3	2·6	2·1
Deaths under one year to 1,000 births ...	75	214	81·6	108
Deaths over 65, percentage of total deaths...	—	—	39·4	47·5

The County Medical Officer wishes to express his thanks to Dr. Taylor for the form in which he has presented his report and for the valuable information contained therein.

**Prevalence of Disease.**—Only 9 cases were notified under the Act during the year, distributed as follows :—

Enteric Fever ... ..	1
Puerperal Fever ... ..	1
Erysipelas ... ..	7
TOTAL .. ..	9

Influenza was epidemic in the autumn which caused one death

Seven deaths from Phthisis were again registered.

**Means of Prevention of Infectious Diseases.**—No Isolation Hospital has been provided for the district.

The means of prevention at the disposal of the Medical Officer are reported as follows :—

“ Notification ; strict home isolation ; children from infected families are prohibited from attending school ; closing of schools when necessary ; the houses and premises in which contagious illness has occurred are thoroughly disinfected by means of fumigation with sulphurous acid gas ; disinfectants are supplied gratuitously ; inquiries are made as to the cause of the disease and the sanitary condition of the premises are investigated and defects remedied.”

**Vaccination.**—In consequence of the agitation which has been going on for some time the Vaccination Order has not been enforced.

**Water Supply.**—The town is supplied with water by wells sunk into the sand, the average depth appears to be 30 feet.

The quality of the water found in the wells is in some cases too impure for drinking. The question of a public supply of water has been under the consideration of the Sanitary Authority for some time. During the year two attempts have been made to obtain a wholesome supply of water for the town, in each case the quantity has been deficient.

**Sewerage and Sewage Disposal.**—No progress has been made with regard to these important requirements during the year. A scheme for the re-sewerage of the town is under the consideration of the Local Government Board.

The Sewage Farm received special attention with a view to improving the effluent, Dr. Taylor considers the purity of the effluent is maintained.

**Removal of Refuse.**—A system of public scavenging has been adopted, the refuse being removed twice a week from each house.

**Pollution of Streams and Watercourses.**—Complaints have been made of the pollution of a stream passing through a farm in the Parish of Flitwick by the effluent from the Sewage Farm.

**Premises Regulated by Sanitary Authorities.**—The slaughter-houses, cow-sheds, dairies, and bakehouses have been periodically inspected, and their sanitary condition maintained. There is no factory in the town besides the brewery of Morris & Co. and the foundry for agricultural implements, &c. These do not employ any considerable number of hands.

**Adoption of Permissive Acts and Bye-laws.**—The following Act and Bye-laws are in force :—Infectious Disease (Notification) Act, and Building Bye-laws.

**General Sanitation and Administration.**—The district has been periodically inspected, and any influences likely to affect the public health have been corrected as far as practicable.

## Sanitary Inspector's Report :—

Defective privy accommodation	...	...	...	...	...	1
Offensive privies..	...	...	...	...	...	4
Polluted wells ...	...	...	...	...	...	2
Offensive manure	...	...	...	...	...	2
Foul accumulation	...	...	...	...	...	1
Foul tank and cesspools	...	...	...	...	...	5
Defective drains ..	...	...	...	...	...	4
Supposed bad fish	..	...	...	...	...	1
Dilapidated houses	...	..	...	...	...	1
Other nuisances ...	...	...	...	...	...	10

## BOROUGH OF BEDFORD.

*Medical Officer of Health.*—C. E. PRIOR, M.D., F.R.C.S.

Area in acres, 2,223.

Census population, 28,023.

	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Population estimated to middle of year ... ..	28,023	28,701	29,562	29,985	31,005	32,725	33,550
Birth rate per 1,000 of population	25'2	22'3	22'4	24'1	22'4	22'6	22'2
General death rate]	—	—	—	—	—	—	13'8
Corrected General death rate...	13'21	15'74	13'29	11'40	13'50	10'4	12'9
Zymotic death rate per 1,000...	1'2	1'3	1'2	'8	1'6	0'9	1'2
Death rate from phthisis ...	'99	'87	1'01	1'0	1'12	0'6	0'8
Death rate from respiratory diseases ... ..	2'2	2'5	2'4	1'4	1'83	1'1	1'7
Deaths under one year to 1,000 births ... ..	107	135	156	96	150	90'0	128'0
Ditto, percentage of total deaths ... ..	20'6	19'0	26'5	20'0	25'2	—	—
Deaths under 5 years of age percentage of total]	30'2	29'4	34'0	27'0	32'4	—	—
Deaths over 60 the same ...	33'3	—	—	—	—	—	—
Deaths over 65 the same ...	—	30'0	29'0	30'0	30'7	30'0	28'0

The population is estimated on the total number of inhabited houses at 5 per house, thus amounting to 33,550 persons.

Calculated by the Registrar General's method to the middle of 1897 would be 33,330.

**Prevalence of Disease.**—The Notification Act has been in force since 1890. The number of certificates received during the year with the corresponding removals to hospitals and deaths are shown in the following Table :—

DISEASE.	NUMBER OF NOTIFICATIONS	NUMBER REMOVED TO HOSPITAL.	NUMBER OF DEATHS.
Scarlet Fever ... ..	95	22	0
Diphtheria... ..	66	13	19
Erysipelas ... ..	22	0	1

Scarlet Fever of very mild type prevailed throughout the year.

No death was registered, and the Medical Officer thinks that some of the cases notified as diphtheria may have been scarlet fever.

Diphtheria was epidemic in the quarter ending September 30th, and a special report was prepared with regard to its origin, but this has not reached the County Council. The disease was chiefly limited to the N.W. portion of the town, and the origin is reported as indefinite.

**Water Supply.**—Allusion is made to recent water-borne epidemics of enteric fever in other towns and it appears that steps are being taken to prevent contamination of the town water supply.

**Isolation Hospital.**—The Fever Hospital attached to the Bedford General Infirmary, was closed on October 31st, and no adequate substitute has been provided. The iron building which has been erected near the Elstow cross road is reported to be still unfurnished, and without the necessary staff. The Medical Officer questions whether such a building could be rendered fit for the reception of patients suffering from diphtheria or typhoid, though it might be used as a Small-pox Hospital. He advocates a joint hospital for the Rural and Urban Districts on a site selected by the Rural District Council in the Parish of Clapham.

**Premises Regulated by Sanitary Authorities.**—Slaughter-houses, bakehouses, and common lodging houses have been inspected and reported in good order. The fairs and markets, have been duly attended.

Three cases of fish frying and curing have been dealt with as offensive trades, and duly abated.

One case of tuberculosis in a sow was summarily dealt with the carcase being condemned and buried.

### Sewerage and Sewage Disposal.

Removal of Refuse.

Pollution of Streams & Watercourses

House Sanitation.

Adoption of Permissive Acts and Bye-laws.

General Sanitation and Administration.

No reference to these subjects is made in the Report of the Medical Officer.

### Sanitary Inspector's Report for the year 1897 :—

Number of nuisances reported	...	...	...	...	245
„ „ discovered and abated on request	...	...	...	...	143
„ general inspection of premises	...	...	...	...	1,468
„ houses and premises disinfected	..	..	..	..	23

## CLASSIFICATION OF NUISANCES:—

Defective drains ... ..	22
„ W.C.'s ... ..	15
Drainage blocked ... ..	31
Accumulations of manure and other refuse ... ..	24
Insufficient water-supply to W.C.'s ... ..	12
Defective sanitary fittings ... ..	19
Animals so kept as to be a nuisance ... ..	3
Offensive trades abated ... ..	3
Defective ventilating pipes ... ..	1
Miscellaneous ... ..	13
Total	143

## BIGGLESWADE (URBAN).

*Medical Officer of Health.*—C. E. PRIOR, M.D., F.R.C.S.,

Area in acres, 4,310.

Census population, 4,943.

	1894.	1895.	1896.	1897.
Population estimated to middle of year ...	4,860	4,943	4,830	4,900
Birth rate per 1,000 of the population ...	29·4	31·1	29·0	30·0
General death rate per 1,000 ... ..	—	—	—	21·8
Corrected death rate per 1,000 ... ..	13·2	19·9	15·3	15·3
Zymotic death rate per 1,000 ... ..	1·8	5·1	1·6	0·8
Death rate from phthisis ... ..	1·6	0·61	2·2	1·2
Death rate from respiratory diseases ...	1·02	1·84	2·2	1·8
Deaths under one year to 1,000 births ...	126	214	136·0	136·0
Deaths over 65, percentage of total deaths ...	—	—	27·0	35·0

**Prevalence of Disease.**—The number of certificates received under the Infectious Disease (Notification) Act, was as follows:

Scarlet fever ... ..	2
Diphtheria .. ... ..	22
Erysipelas ... ..	5
Total	29

Influenza was epidemic during the latter part of the year and nine deaths were registered from this cause.

**Infectious Disease Prevention.**—Only two cases of scarlet fever, two of diphtheria, and one of measles were admitted to the Infectious Hospital during the year.

**Sewerage and Sewage Disposal.**—Dr. Prior reports that the sewerage scheme continues in abeyance and that the Urban Council are applying for Parliamentary powers to obtain land. Up to the present time nothing has been done.

In the absence of any information with regard to other matters of sanitary importance, there is nothing in the Report calling for further comment.

## Sanitary Inspector's Report for the year 1897 :—

Defective drainage	...	...	...	...	...	18
„ water supply	...	...	...	...	...	4
Privy nuisances	...	...	...	...	...	61
Pigstye „	...	...	...	...	...	6
Foul accumulations	...	...	...	...	...	9
Dirty and dilapidated houses	...	...	...	...	...	3
Houses disinfected	...	...	...	...	...	11
Other nuisances	...	...	...	...	...	3
					<b>Total</b>	<b>115</b>
Abated without formal notice	...	...	...	...	...	34
Number of formal notices issued	..	..	..	..	80	
Abated after notice	...	...	..	...	...	76
					<b>Total number abated</b>	<b>110</b>

### SPECIAL SUPPLEMENTARY REPORT of the Medical Officer for Biggleswade, 1897.

At the request of the Local Government Board Dr. Prior has presented a more detailed report for the year 1897, which fully deals with those matters about which no information was previously forthcoming.

The details under the subjoined headings are reproduced in full :

**1. Water Supply.**—“ Throughout the town water is obtained from wells of varying depths, shallower near the river, some with pumps some without, many of the wells are very near to the walls of the houses, as in Well Yard, Chapel Yard, and Anchor Yard and Cowfair Lands, some as in Benson's Row of 12 or 13 houses within three or four yards of cesspits. In other places, as in Alexandra Terrace where there are two wells to 18 houses, the arrangement is very similar to that in use in country localities, where rows are built with a yard in common and a pump between the houses and the barns.

“ In Rose Terrace of 20 houses are three such wells, at Victoria Place (perhaps a disused gravel pit?) are five houses on a very limited space with a well at the bottom in such a situation that it must be almost impossible to obtain pure water. The same may be said in a minor degree of most of the wells in the town, including those which I have already mentioned, where, either from proximity to houses, from gathering ground soiled with impurities, or perhaps from the proximity of cesspits, the water however bright it may appear cannot be expected to stand the test of analysis.”

**2. Removal and Disposal of Excrementitious Matter.**  
—“ Scavenging is done by contract ; the cart calls once a

week at each court, yard, or house to remove the dry refuse. By this means the appearance of the yards, &c., has been rendered much less unsightly, in fact a great improvement has been effected. Privies have almost universally brick cesspits, and my attention was not called to any glaring case of defective privy accommodation. The cesspits I believe are emptied from time to time, and the contents disposed of upon the land. Since the commencement of the scavenging there have been many less complaints of foul accumulations. Some of the privies appear a good deal dilapidated. It was hoped that the sewerage of the town would have swept them away altogether, but this is now unfortunately postponed for an indefinite time."

**3. Sewerage and Drainage.**—"The scheme of sewerage submitted by the Authority has been disapproved by the Local Government Board, so that, for the present, the town is compelled to fall back upon the old system, which includes the misuse of the street drains formerly at some date, road-side drains; these were completely blocked in Shortmead Street two or three years ago; with them are connected a number of water-closets (which can scarcely be upon the decrease), house and property drains, some of them defective. Crude sewage passes from these sewers or drains into the River Ivel at several points, and several houses to the north of Sun Street discharge into the common ditch which is in a filthy condition. A large drain leading to this has been recently blocked and is now (May 13, 1898) in process of being cleaned out."

**4. Dwellings of the Working-classes.**—"Many of the old cottages in Biggleswade are very limited in size and much cramped for external space, some are back to back as in a row adjoining Hitchin Street and in what is called Rattlebury Yard, where the arrangement is very peculiar though the Yard is much improved from its former condition. Many small poor old cottages are also to be found in Palace Yard, in Victoria Place of which I have already spoken, in Bell Yard, in Cowfair Lands, Chapel Yard (houses back to back here), in Anchor Yard, and Sun Street.

"I have omitted to mention that in some of these localities I found the objectionable arrangement of privies in barns; it was hoped and expected that this would have been done away with had a scheme of sewerage been adopted and approved.

"During the year 1897 I have not advised or taken part in any proceedings under the Public Health Act, nor have I been specially consulted by the U.S. Authority with reference thereto.

"It results from the details which I have given that the

sanitary condition of Biggleswade at the end of the year 1897 remained much the same as at the end of the year 1896, and such it has continued up to the present time."

" May 16, 1898."

## DUNSTABLE, BOROUGH.

*Medical Officer of Health.*—A. MORCOM, L.R.C.S., L.M.

Area in acres, 453. Census population, 4,513.

	1892.	1893.	1894.	1895.	1896.	1897
Population estimated to middle of year	4,530	4,530	4,857	5,085	4,960	5,084
Birth rate per 1,000 of the population	20·6	22·0	22·23	23·0	26·0	19·2
General death rate ... ..	16·8	12·5	12·76	13·7	13·7	13·9
Corrected general death rate per 1,000	—	—	—	—	—	13·5
Zymotic death rate per 1,000 ...	0·2	0·2	1·0	0·34	0·4	0·3
Death rate from phthisis ... ..	1·5	1·1	0·6	1·76	1·0	0·7
Death rate from respiratory diseases...	3·5	2·2	2·6	2·94	1·8	2·9
Deaths under one year to 1,000 births	64·5	90·0	125·0	94·0	65·6	122·4
Deaths over 65, percentage of total deaths	—	—	—	—	41·1	42·2

**Prevalence of Disease.**—The district appears to have been remarkably free from epidemic illness, only one case of scarlet fever and one of enteric fever being notified during the year.

**Means of Prevention of Infectious Disease.**—Now that the early notification of infectious diseases has been secured, it is to be earnestly hoped that the Sanitary Authority will provide an isolation hospital either for Dunstable alone, or jointly with neighbouring districts.

Disinfection and other precautionary measures for the prevention of the spread of disease are duly carried out, children from infected families are prohibited from attending school, and any defects of the houses or localities are remedied.

There is no disinfecting apparatus.

**Water Supply.**—The water supply is in the hands of a public company, and is reported as very good and above suspicion. Too many houses are still dependent upon deep wells. Dr. Morcom recommends an independent analysis of the public water supply two or three times a year.

**Sewerage and Sewage Disposal.**—The questions of drainage and sewage disposal have been much discussed during the year, and Dr. Morcom hopes that in a very short time an efficient

scheme will be carried out, and states that it is a matter of urgent necessity that steps should be at once taken to remedy the defects at the present outfall.

**Removal of Refuse.**—A system of public scavenging has been adopted by the Council. The want of a suitable piece of ground where the refuse can be deposited and properly treated is reported. The system in vogue at present is not to be commended; it is inefficient, and, in the future, sure to be a source of trouble.

**Premises Regulated by Sanitary Authorities.**—The factories, bakehouses, slaughter-houses, cow-sheds, and dairies have all been regularly inspected, and found in a satisfactory condition. A few structural defects have been detected, but ventilation and cleanliness are steadily improving.

**House Sanitation.**—The sanitary condition of the houses of the poorer classes shows a marked improvement, and a tendency to greater cleanliness and tidiness.

**Adoption of Permissive Acts and Bye-laws.**—The Infectious Disease (Notification) Act, and Public Health Acts Amendment Act are in force.

The Medical Officer of Health advises the adoption of the Infectious Disease (Prevention) Act and Regulations under the Dairies, Cow-sheds, and Milkshops Orders, 1885 and 1886.

**General Sanitation and Administration.**—The district has been systematically inspected, and sanitary improvements, where necessary, have been carried out.

The Report of the Inspector of Nuisances shows the amount of work accomplished during the year.

**Sanitary Inspector's Report :**

Houses inspected	...	...	...	...	27
Orders issued for sanitary amendments of houses, &c.	...	...	...	...	21
Defective drains, sinks, &c.	...	...	...	...	77
Water supply attended to	...	...	...	...	2
Privies and water closets repaired	...	...	...	...	14
Removal of manure, &c.	...	...	...	...	3
Bakehouses, slaughter-house, factories, workshops, and cow-sheds inspected	...	...	...	...	72
Smoke nuisances	...	...	...	...	1
Legal proceedings	...	...	...	...	Nil.

## KEMPSTON (URBAN).

*Medical Officer of Health.*—GEO. BUTTERS, M.B., C.M.

Area in acres 1,204. Estimated population 4,000.

	1896.	1897.
Population estimated to middle of year ...	4,000	4,000
Birth rate per 1,000 of the population ...	31·2	33·0
General death rate ... ..	10·5	13·25
Zymotic death rate per 1,000 ... ..	1·2	1·75
Death rate from phthisis ... ..	1·2	1·0
Death rate from respiratory diseases ...	1·2	2·7
Deaths under one year to 1,000 births ...	—	159·0
Deaths over 65, percentage of total deaths ...	—	20·7

Special thanks are due to the Medical Officer for having furnished a complete list of statistics.

**Prevalence of Disease.**—Twelve certificates were received under the Infectious Disease (Notification) Act during the year, as follows:—

Scarlet Fever ... ..	4
Diphtheria ... ..	1
Enteric Fever ... ..	2
Puerperal Fever ... ..	2
Erysipelas ... ..	3
Total	12

Whooping Cough was prevalent in December, necessitating the exclusion of children from infected houses, from the various schools.

**Means of Prevention of Infectious Disease.**—No Isolation Hospital is as yet available. The closing of the Fever Hospital at the Bedford Infirmary has left the district entirely without any accommodation for infectious diseases in the event of an outbreak.

Disinfectants are supplied gratuitously and houses in which infectious illness has occurred are fumigated with sulphur.

A proper steam disinfecting apparatus is required.

The Vaccination Act is almost a dead letter in the district. The Medical Officer of Health draws attention to this fact, and recommends that the Board of Guardians be approached with a view to having the Act enforced.

**Water Supply.**—The water supply is still derived from wells sunk at various distances from the cesspits. Samples taken at random have been subjected to a quantitative analysis, with the result that some of the wells were found to be contaminated, and have been pronounced unfit for domestic purposes.

From his knowledge of the district Dr. Butters thinks that there are other wells, the water of which, if analysed, would produce unfavourable results.



## LEIGHTON BUZZARD (URBAN).

*Medical Officer of Health.*—J. A. HEDGES, M.R.C.S., L.S.A.

Area in acres, 1,700. Census population, 6,704.

	1892.	1893.	1894.	1895.	1896.	1897
Population estimated to middle of year	6,793	6,754	6,754	6,754	6,754	6,800
Birth rate per 1,000 of the population	28·4	27·5	22·3	26·3	25·0	20·44
General death rate per 1,000	—	—	—	—	—	13·8
Corrected General death rate per 1,000	18·4	17·4	17·1	14·6	12·1	12·9
Zymotic death rate per 1,000 ...	1·3	1·7	3·1	1·3	0·8	0·4
Death rate from phthisis ...	1·3	1·3	3·1	2·8	2·5	2·0
Death rate from respiratory diseases ..	5·3	2·9	1·9	2·0	2·8	1·1
Deaths under one year to 1,000 births	170·9	198·9	178·8	129·0	88·7	57·5
Deaths over 65, percentage of total deaths	—	—	—	—	34·1	42·6

**Prevalence of Disease.**—In the absence of the notification of infectious disease in this town, the prevalence of preventible disease is unknown. Three cases of diphtheria and four of enteric fever were brought to the notice of the Medical Officer of Health.

**Means of Prevention of Infectious Disease.**—Leighton Buzzard remains the only district in the County which has failed to adopt the Notification Act, though this procedure has been recommended and asked for annually for some years past.

There is an isolation hospital provided, situated near the Workhouse, but it is structurally unfit for the purpose. The Medical Officer asks "what shall be done with this building. Buy land for its necessity, and further improve it to modern requirements, in spite of its grievously bad, low-lying situation, or dispose of the building to the Guardians, who do not seem anxious to purchase; but who have issued an order not to permit the burial of excreta in the workhouse garden after a certain date? Permission however has been obtained to bury the excreta on other land hard by. The site is so low that water will not, or will scarcely run; it is evident that if connections are made with the new works that a patent sewage lift, costing a matter of £250, would become necessary."

Dr. Hedges advocates a joint hospital and suggests Houghton Regis or Tilsworth as a convenient site for Leighton Buzzard.

The adoption of the Infectious Disease (Prevention) Act has been under the consideration of the Council.

**Water Supply.**—A constant water supply has been provided but owing to the deposit of red oxide of iron on exposure to the air, some dissatisfaction has arisen.

The analysis of the water by Professor Attfield is alluded to as showing that, except for the presence of the iron, the water is singularly pure and soft.

**Sewerage and Sewage Disposal.**—A system of sewage removal has been completed and when fully developed will it is hoped prevent the pollution of streams and water courses hitherto complained of. Many houses still however remain unconnected.

**Removal of Refuse.**—No system of public scavenging has been adopted by the Council, but the matter has been under consideration.

**Premises Regulated by Sanitary Authorities.**—The slaughter-houses have been periodically inspected, and a nuisance, causing the pollution of a stream from the slaughtering of animals outside a slaughter-house, has been abated. The common lodging-houses have been duly visited and their cleanliness and sanitary condition maintained.

In the four lodging-houses 4,282 males and 1,142 females were received during the year.

Nuisances have arisen from the boiling of offal occasionally, but have been promptly suppressed.

#### Sanitary Inspector's Report.

Manure and refuse pits emptied	...	...	...	6
Ash-bins emptied	...	...	...	9
Houses disinfected	...	...	...	5
Pigsties (improperly kept) reported upon and the nuisance abated	..	...	...	2
Boiling of offal	...	...	...	1
Foul privies reported	...	...	...	20
Disinfectants supplied	...	...	...	23
Schools disinfected	..	...	...	5
Building plans approved	...	...	...	15

### LUTON BOROUGH.

*Medical Officer of Health.*—H. SWORDER, M.R.C.S., L.R.C.P.

Area in acres, 3,134.

Census population, 30,006

	1892.	1893.	1894.	1895.	1896.	1897.
Population estimated to middle of year	30,300	30,600	31,000	31,300	32,000	34,000
Birth rate per 1,000 of population	30.5	31.0	31.7	28.9	29.9	29.2
General death rate	—	—	—	—	—	15.8
Corrected general death rate	18.5	18.2	16.1	15.1	16.6	—
Zymotic death rate per 1,000	2.1	2.8	1.6	1.4	2.5	1.8
Death rate from phthisis	1.1	1.4	1.4	1.3	0.9	1.02
Death rate from respiratory diseases	2.5	2.09	2.6	1.7	1.7	1.9
Deaths under one year to 1,000 births	145.6	184.0	144.3	137.9	161.8	187.9
Deaths over 65, percentage of total deaths	—	—	—	—	24.5	22.9

Dr. Sworder presents an excellent Report, and some of his remarks are quoted elsewhere.

**Prevalence of Disease.**—The number of certificates received under the Infectious Disease (Notification) Act was 300, made up as follows :—

Scarlet Fever	...	...	...	...	...	185
Diphtheria	...	...	...	...	...	12
Enteric Fever	...	...	...	...	...	37
Continued Fever	...	...	...	...	...	6
Puerperal Fever	...	...	...	...	...	6
Choleraic Diarrhoea	...	...	...	...	...	1
Erysipelas	...	..	...	...	...	53
						300

SCARLET FEVER was more or less prevalent throughout the year. No particular grouping of cases was however recorded.

INFLUENZA assumed mild epidemic proportions towards the end of the fourth quarter.

DIARRHOEA.—32 deaths were registered as due to diarrhoea and 28 to gastro enteritis. Of these 60 deaths 53 were those of children under one year of age. The epidemic attained its maximum at the end of July and beginning of August.

ENTERIC FEVER.—Thirty-seven cases of enteric fever and six of continued fever were notified during the year, 28 of which were admitted into the hospital. Dr. Sworder presents a statement as to the origin of enteric fever, and particularly with regard to the town of Luton. Ten of the cases were probably infected from soiled linen, and others were thought to be due to the contaminated condition of the soil around the houses in one particular locality.

PHTHISIS.—Thirty-five deaths were referred to phthisis, equal to a death rate of 1.02 per 1,000. During the last 19 years, 898, deaths occurred in Luton, and it is remarkable how evenly they have been distributed throughout the four quarters of the year.

CANCER.—Thirty-six deaths were registered from cancer and other malignant diseases.

**Infectious Disease Prevention.**—The isolation hospital has been considerably used during the year, 30 cases of enteric fever and 27 of scarlet fever having been admitted.

The Medical Officer asks his council to consider the advisability of the remission of the hospital fees which militates against the free removal of patients.

A steam disinfecter is still required.

Vaccination and re-vaccination are almost entirely neglected, and no separate small-pox accommodation has yet been provided.

**Water Supply.**—The town is supplied by means of a water company. The water is pumped from two artesian wells (tubed with iron for 100 feet from the ground) into two reservoirs built with brick and cement, one having a capacity of 1,100,000 gallons and the other 514,000 gallons. From these reservoirs the water

gravitates into the town through two leading mains by which a constant supply is maintained. The service pipes are of galvanised iron. A chemical analysis of the water shows it to be of good quality.

**Sewerage and Sewage Disposal.**—The main drainage and storm-water scheme has been commenced, about 1,000 feet of a large outfall sewer having been completed. An additional tank has been erected at the sewage works giving a storage capacity of about 1,000,000 gallons. Two others will be completed during the ensuing year. The small remaining number of privies is being gradually reduced.

**Removal of Refuse.**—The removal of refuse continues to be carried out satisfactorily, 11,503 loads were removed by the Corporation teams during the year. The provision of a destructor is advocated.

**Premises Regulated by Sanitary Authorities.**—Dairies cow-sheds, and milk-shops have been systematically inspected, and the Regulations enforced.

Bake-houses and slaughter-houses have been frequently visited and found in a satisfactory condition.

The meat and fish markets have also been visited, but in no instance was the Medical Officer called upon to condemn any meat, or seize any food intended for human consumption. The Factories and Workshops have all been inspected during the year.

**FOODS AND DRUGS ACT.**—Under the sale of Food and Drugs Act 60 samples have been submitted to the Public Analyst, cocoa, 1; milk, 40; vinegar, 2; butter, 14; lard, 2; coffee, 1. Only two samples were returned as adulterated, and in both cases prosecution was resorted to and a fine inflicted.

**House Sanitation.**—Thirty-eight houses were found in an insanitary condition, and were thoroughly cleansed and put in good order. A large amount of attention has been paid to the condition of house property.

**Adoption of Permissive Acts and Bye-laws.**—The more important of the permissive Acts and bye-laws have been adopted.

**Sanitary Requirements.**—

1. Provision of small-pox hospital accommodation.
2. The purchase of a steam disinfecter.
3. Some small additions to the Spittlesea hospital.
4. The abolition of bell traps.
5. The provision of a proper water supply to every closet.
6. Systematic examination of all drains.
7. Flushing of the sewers.
8. Paving of all back yards in populous localities.

**General Sanitation and Administration.**—All parts of the Borough have been visited by the Medical Officer of Health and the Sanitary Inspector, and much useful work has been steadily carried out.

Sanitary Inspector's Report for the year 1897 :—

Defective drains and bell traps	...	...	...	...	575
No constant water supply to W.C.'s	....	...	...	...	170
Drains and W.C.'s blocked	...	...	...	...	160
Defective W.C.'s	...	..	...	...	145
Sinks not disconnected	...	...	...	...	29
Workrooms requiring whitewashing	...	...	...	...	1
Offensive smells and accumulations	...	...	...	...	33
Defective ashpits	...	...	...	...	8
No ventilating pipes to drains	...	...	...	...	10
Pigs kept contrary to bye-laws	...	..	...	...	41
W.C. water apparatus out of order	...	...	...	...	2
Defective paving	...	..	...	...	6
Defective soil pipes to W.C.'s	...	...	...	...	2
Defective urinals	...	...	...	...	1
Defective dung pits	...	...	...	...	1
Insufficient W.C. accommodation	...	...	...	...	1
Slaughter-house requiring whitewashing	...	...	...	...	1
No intercepting traps	...	...	...	...	21
Defective channels and waste pipes to sinks	...	...	...	...	12
Insanitary privies	...	...	...	...	10
Defective ventilating pipes	...	..	...	...	38
No receptacle for ashes	...	..	...	...	6
No separate sanitary accommodation for females	...	..	...	...	7
Insanitary dwellings	...	...	...	...	38
No drains to stables	...	...	...	...	2
Overcrowded workrooms	...	...	...	...	1
No dung pits to stables	...	...	...	...	6
Other nuisances	...	..	...	...	37

TOTAL 1,384

RURAL DISTRICTS.

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### RURAL DISTRICTS

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## AMPTHILL (RURAL).

*Medical Officer of Health.*—C. M. FEGEN, M.R.C.S., L.R.C.P.  
Dip. State Med.

Area in acres, 40,332. Census population, 12,726.

	1894.	1895.	1896.	1897.
Population estimated to middle of year ...	12,726	12,726	12,726	12,726
Birth rate per 1,000 of the population ...	25.5	27.0	23.9	23.9
General death rate ... ..	14.9	13.75	12.86	14.3
Zymotic death rate per 1,000 ... ..	1.6	0.7	1.1	0.9
Death rate from phthisis ... ..	0.31	0.86	0.7	0.9
Death rate from respiratory diseases ...	1.7	1.1	0.8	2.2
Deaths under one year per 1,000 births ...	137.1	87.2	82.24	104.9
Deaths over 65, percentage of total deaths...	—	—	43.2	41.7

Dr. Fegen presents an excellent Report, and is able to congratulate his council on the healthy state of his district. Special thanks are due to him for having presented a complete table of statistics.

**Prevalence of Disease.**—The Infectious Disease (Notification) Act is in force and 46 certificates were received during the year as against 123 in the preceding year.

They were distributed as follows :—

Scarlet fever ... ..	7
Diphtheria ... ..	9
Enteric fever ... ..	5
Puerperal fever ... ..	1
Erysipelas ... ..	24
Total ... ..	46

No less than 24 cases of Erysipelas were notified and the Medical Officer fails to see the advantage of including this disease in the schedule list of the Notification Act.

A special report is presented on an outbreak of Diphtheria at Flitwick, where 11 cases were notified within a fortnight in seven houses.

Special inspections were at once made by the Medical Officer who was unable to find any gross sanitary defects. He attributed the outbreak to the deposit of large quantities of London manure in the neighbourhood, the debris from which was blown about and found its way into the wells and was the cause of the outbreak.

**Infectious Disease Prevention.**—The beneficial effects of the Notification Act are almost nullified by the absence of any isolation hospital.

The Medical Officer of Health again draws the attention of his Council to the necessity of such a building, and appeals to them to take immediate steps to provide one.

**Infectious Disease (Prevention) Act.**—This Act is not in force, and considerable difficulty is therefore experienced in dealing with outbreaks of infectious disease.

Houses in which infectious illness has occurred are visited, and disinfectants supplied gratuitously. The premises are subsequently cleansed and fumigated with sulphur.

**Water Supply.**—The water supply of the entire district is reported as having been materially improved during the year, but that of Cranfield and Marston still requires attention.

**Sewerage and Sewage Disposal.**—The sewerage of Shillington and Gravenhurst has been reported upon and a new sewer has been put down at Cranfield. Brick and cement cesspits, with water-tight covers or galvanized closet pails are recommended.

**Removal of Refuse.**—The removal of refuse is not undertaken by the authority.

**Premises Regulated by Sanitary Authorities.**—The bake-houses, slaughter-houses, factories, and workshops have been inspected, and the requirements of the Acts enforced.

**House Sanitation.**—A systematic house to house inspection of all the villages in the district has been carried out during the year with excellent results.

**Adoption of Permissive Acts and Bye-laws.**—Only the Infectious Disease (Notification) Act has been adopted in this district.

There are no bye-laws with regard to new buildings, nor are any regulations in force with regard to cow-sheds and dairies.

The Foods and Drugs Acts are practically a dead letter in this district.

**General Sanitation and Administration.**—All parts of the district have been inspected both by Medical Officer of Health and the Sanitary Inspector. The latter now inspects systematically each parish, and sees that his recommendations are duly carried out.

## Sanitary Inspector's Report for the year 1897 :—

Defective Closets	...	...	...	...	105
Defective drains...	...	...	...	...	32
Deficient or defective water supply	...	...	...	...	63
Dwellings in a dilapidated state	...	...	...	...	5
Wells repaired and cleansed	...	...	...	...	29
Ditches cleansed	..	...	...	...	5
Defective ash-pits	...	...	...	...	3
Accumulations of offensive matters	...	...	...	...	11
Cases of overcrowding	...	...	...	...	2
Slaughter-houses cleansed or repaired...	...	...	...	...	7
Bake-houses cleansed or repaired	...	...	...	...	5
Premises or dwellings in a dirty state...	...	...	...	...	3
Houses disinfected	...	...	...	...	20
Certificates granted for new houses	...	...	...	...	11
Total	...	...	...	...	301
Total for last year	...	...	...	...	207

## BEDFORD (RURAL).

*Medical Officer of Health.*—C. E. Prior, M.D., F.R.C.S.

Area in acres, 94,271. Estimated population, 20,654.

	1892.	1893.	1894.	1895.	1896.	1897.	
Population estimated to middle of year	23,347	23,260	23,260	23,925	19,500	19,450	
Birth rate per 1,000 of the population	28.5	26.4	26.0	27.5	25.3	24.3	
General death rate per 1,000...	...	—	—	—	—	13.0	
Corrected general death rate per 1,000	17.0	15.74	13.57	14.89	13.36	15.6	
Zymotic death rate per 1,000	...	1.3	1.6	0.94	0.66	0.4	1.3
Death rate from phthisis	...	0.64	0.77	1.2	0.45	0.4	0.7
Death rate from respiratory diseases	2.5	2.4	1.9	2.54	1.5	2.4	
Deaths under 1 year to 1,000 births	96	105	113	92	81.0	88.7	
Deaths over 65, percentage of total deaths	—	—	—	—	44.0	47.0	

The statistics for this district are calculated after correction for deaths occurring in public institutions outside the borough among persons belonging thereto.

**Prevalence of Disease.**—The number of certificates under the Notification Act received during the year was as follows :—

Scarlet fever	...	...	...	...	15
Diphtheria	...	...	...	...	38
Erysipelas	..	...	..	...	18
Enteric fever	...	...	...	..	6
Puerperal fever	...	...	...	...	1
Anthrax	...	...	...	..	1
Total	...	...	...	...	79

Two formidable outbreaks of diphtheria are reported, one in the Parish of Wilden, where five consecutive fatal cases were

notified, and the other in the village of Sharnbrook, where 24 cases were notified.

The origin or method of introduction of these two outbreaks is reported as obscure, though direct contagion subsequently played an important part. The schools were temporarily closed and thoroughly cleansed and disinfected. The localities affected were scattered, and not those usually considered as exhibiting faulty sanitary circumstances.

**Means of Prevention of Infectious Disease.**—Dr. Prior reports that “the Fever Hospital attached to the General Infirmary was closed on November 1st.

“During the last few years the Council have made extensive use of this institution by a special arrangement with the governors, and its closure, though announced and foreseen has proved to be a grave inconvenience and something more. Fortunately the Board of Guardians have retained possession of the little iron hospital, formerly termed the ‘Smallpox Hospital,’ and it has been found of great utility. All the Sharnbrook patients suffering from diphtheria, at least all that would accept removal, have been treated there; others have also had the same advantage, and a case from Bletsoe is under treatment at the present time.

Meanwhile the authority have been taking steps to secure a site for a new Infectious Diseases Hospital, and Dr. Prior believes that one has been obtained upon the slope of Oakley Hill, a little beyond Clapham, and could the authorities of Bedford, Urban and Rural, be induced to combine, he thinks that a hospital might be erected, central in position and of such a size as to furnish employment for a permanent nursing staff, on more economical terms, and without the increased expense and comparative inefficiency inseparable from two small institutions, each with its separate staff, and each alternately overcrowded or empty.”

Houses and premises, including public schools, in which infectious disease has occurred are disinfected by the Sanitary Inspector, but the method employed is not alluded to.

**Water Supply.**—The water supply of the villages is derived from springs and wells, very generally insufficiently protected or too close to houses and yards; or from ponds and water-holes, of which the latter are only a continuation of the land ditches. The best springs and wells will not bear analysis, while the pond waters are utterly below the mark.

Dr. Prior reports that there are few, if any, localities in the district so favourably circumstanced as to have a water supply brought from a distance in pipes; next to this the Medical Officer of Health habitually advocates the formation of public wells in selected situations, or the digging of private wells at a greater distance from sources of possible pollution, but his efforts have not met with any great success, partly from the poverty of

the district, partly from the peculiar character of the strata in several situations.

**Sewerage and Sewage Disposal.**—The earth-closet or pail system is recommended by the Medical Officer of Health and the Sanitary Inspector. The number of water-closets in the district is at present small, but a further development is expected and Dr. Prior thinks that a modified system of sewerage will become necessary.

At Cardington the long-standing nuisance arising from the sewage outfall along the main road ditch has been permanently abated by a 9 inch intercepting drain carried upwards of 400 yards.

At Harrowden extensive drainage improvements have been done and the brook protected from pollution.

At Great Barford permanent drainage improvements have been effected.

At Poddington, Wymington, and Hinwick fresh gullies have been fixed and private drainage improved.

At Turvey private drainage has been improved and structural improvements made.

At Harrold private drainage has been improved and the earth-closet system more generally adopted.

At Sharnbrook earth-closets have been or are about to be fixed, and an intercepting tank to be constructed.

**House Sanitation.**—Considerable attention has been paid by Mr. Turnbull to the condition of cottage property, and at Biddenham old cottages have been removed and new ones built.

#### **Premises Regulated by Sanitary Authority.—?**

#### **Adoption of Permissive Acts and Bye-laws.—?**

**General House Sanitation and Administration.**—All parts of the district have been visited by the Medical Officer of Health and Sanitary Inspector.

#### **Sanitary Inspector's Report:—**

Foul privies and foul accumulations ... ..	87
Defective privy accommodation .. ...	8
Defective drains... ..	79
Pigsty nuisances... ..	13
Houses dilapidated and unfit for human habitation ...	9
Houses and premises, including Public Schools, requiring disinfection ... ..	26
Other nuisances arising from—No drains, damp foundations and defective spouting, no water supply, foul ditches, overcrowding, &c. ... ..	33
<b>Total nuisances</b> ... ..	<b>255</b>
Nuisances abated without formal notice ... ..	112
Nuisances abated after formal notice ... ..	135
Nuisances in process of abatement ... ..	8
Nuisances abated after proceedings ... ..	0
<b>Total</b> ... ..	<b>255</b>

## BIGGLESWADE (RURAL).

*Medical Officer of Health*—C. E. PRIOR, MD., F.R.C.S.

Area in acres, 53,721. Census population, 21,864.

	1893.	1894.	1895.	1896.	1897.
Population estimated to middle of year	21,799	20,851	20,824	21,700	21,650
Birth rate per 1,000 of the population	30·7	28·9	30·4	29·0	27·0
General death rate... ..	—	—	—	—	18·2
Corrected general death rate ...	15·65	14·1	17·3	15·08	15·3
Zymotic death rate per 1,000 ...	1·7	1·05	1·5	1·8	0·8
Death rate from phthisis ... ..	1·0	1·1	1·3	0·6	0·9
Death rate from respiratory diseases	2·7	1·1	2·4	1·8	2·9
Deaths under one year to 1,000 births	107·0	91·0	153·0	133·0	110·3
Deaths over 65, percentage of total deaths	—	—	—	32·0	38·6

Dr. Prior estimates the population for 1897 at 21,650, and the net population after deduction for residents temporarily located elsewhere, and non-residents in the Three Counties Asylum is 20,761.

In the above table the corrected death rates are calculated on this population from the deaths similarly corrected.

**Prevalence of Disease.**—The number of certificates received under the Notification Act during the year was as follows:—

Scarlet fever ... ..	12
Diphtheria ... ..	42
Enteric fever ... ..	16
Continued fever ... ..	1
Puerperal fever... ..	1
Erysipelas ... ..	44

116

Diphtheria still continues to prevail in the district.

Enteric fever occurred at Shefford, Sandy, and Arlesey.

It is reported that the origin of the four cases at Shefford may have been due to contaminated drinking water. The origin of the other cases was apparently indefinite.

**Infectious Disease Prevention.**—The hospital is reported as having undergone some improvements, but the admissions continue very limited. The number admitted during the year was:—scarlet fever 8, diphtheria 4, enteric fever 2, measles 1, total 15. Of these admissions 10 came from the Rural and five from the Urban District.

**Water Supply.**—The inferior character of the village waters as compared with town water is referred to, and the contamination of the wells from surface impurities is lamented. The Medical Officer suggests the conduction of a supply from a distance, or the formation of public wells at a fair distance from houses, and from possible surface pollution.

**Sewerage and Sewage Disposal.**—Dr. Prior reports that the disposal of excrementitious matter has always been a point requiring attention in the district, both from the large market gardening industry, which is apt to give rise to foul accumulations, and also from the rather crowded population and insufficient external space to be found, not alone in the little towns of Potton and Shefford but also in several semi-urban and overgrown villages. Potton has been provided with a system of sewerage, and the pail closet system appears to have been adopted in some of the villages of the district.

There are no other matters calling for comment in the Report of the Medical Officer of Health.

Sanitary Inspector's Report for the year 1897 :—

Total number of nuisances .. .. .	235
Abated without formal notice...	131
Number of formal notices issued .. .. .	104
Abated after notice ... .. .	98
Total number abated ... .. .	229
CLASSIFICATION OF NUISANCES :—	
Defective drainage ... .. .	36
„ water supply ... .. .	7
Privy nuisances .. .. .	102
Pig-stye „ .. .. .	6
Foul accumulations .. .. .	38
Dirty and dilapidated houses ... .. .	21
Houses disinfected ... .. .	19
Other nuisances ... .. .	6
Total nuisances ... .. .	235

EATON BRAY (RURAL)

*Medical Officer of Health.*—J. A. HEDGES, M.R.C.S., L.S.A.

Area in acres, 8,891.

Census population, 3,440.

	1894.	1895.	1896.	1897.
Population estimated to middle of year ...	3,440	3,440	3,440	3,440
Birth rate per 1,000 of the population ...	27·3	26·17	24·7	27·0
General death rate ... .. .	18·6	22·08	10·17	13·3
Corrected general death rate ... .. .	—	20·63	9·88	14·2
Zymotic death rate per 1,000 ... .. .	3·77	2·9	0·5	0·29
Death rate from phthisis ... .. .	—	1·1	0·2	2·0
Death rate from respiratory diseases ... .. .	—	1·7	1·4	2·3
Infantile mortality, deaths to 1,000 births...	182·7	177·17	47·0	96·7
Deaths over 65, percentage of total deaths...	—	—	38·2	32·6

Dr. J. A. Hedges presents his first Annual Report for this Rural District and congratulates his Council on the improvement in the statistics which he reports.

**Prevalence of Disease.**—The number of certificates received under the Notification Act during the year was 10, including :—

Scarlet fever	...	...	...	...	7
Diphtheria	...	...	..	...	1
Enteric Fever	...	...	...	...	2
					—
					10

The two cases of enteric fever occurred at Eaton Bray, With regard to the other diseases no grouping of cases occurred.

**Means of Prevention of Infectious Disease.**—No Isolation Hospital is now available for the whole of this district, the Council having relinquished the right of removal to the infectious hospital situated at Leighton Buzzard.

**Water Supply.**—The Medical Officer has tested samples of the water from all parts of Eaton Bray, and reports that he found the majority more or less impure.

He emphatically urges the necessity for a new supply of water for Eaton Bray, and recommends the Fox Hole Spring near the Plough as an excellent source from which it could be obtained.

**Sewerage and Sewage Disposal.**—The state of affairs under this heading is not disclosed, but the Medical Officer alludes to the fact that the contamination of the soil that has been going on for some years is apparently the cause of the impurity of the water. He condemns the introduction of water-closets and sewerage works.

**Removal of Refuse.**—A system of scavenging has been adopted.

**Premises regulated by Sanitary Authorities** —Six slaughter-houses and bake-houses have been inspected.

**House Sanitation.**—Building bye-laws are in force. One farm building was demolished during the year.

**Schools.**—The attention of the Medical Officer was directed to the closets at the Voluntary Schools, Billington, which were water-logged by a land spring, which was diverted and the nuisance abated.

**General Sanitation and Administration.**—The district has been inspected both by the Medical Officer of Health and the Sanitary Inspector, and a summary of the latter's work is attached.

#### Sanitary Inspector's Report.

Public pumps repaired...	...	...	...	...	4
Bake-houses and slaughter-houses inspected	...	...	...	...	6
Well-frames repaired	...	...	...	...	5
Cottages whitewashed and cleansed	...	...	...	...	20
Ordinary notices to abate nuisances issued	..	...	...	...	40
Special notices	...	...	...	...	76
Detective privy structure repaired	..	...	...	...	1
Foul pigsty corrected	...	...	...	...	1
Sanitary buckets emptied by scavenger	..	..	..	..	70

## EATON SOCON (RURAL).

*Medical Officer of Health.*—T. PONTZ-WRIGHT, M.R.C.S., L.S.A

Area in acres, 16,684. Census population, 3,708.

	1894.	1895.	1896.	1897.
Population estimated to middle of year ...	3,744	3,708	3,620	3,600
Birth rate per 1,000 of the population ...	—	24·54	23·7	23·0
Corrected general death rate ...	17·48	20·49	16·2	13·3
Zymotic death rate per 1,000 ...	1·3	1·34	0·8	0·2
Death rate from phthisis ...	2·4	1·32	0·5	0·8
Death rate from respiratory diseases ...	3·4	3·22	3·0	3·6
Deaths under one year to 1,000 births ...	—	132·9	58·0	58·0
Deaths over 65, percentage of total deaths ...	—	—	46·6	45·8

The Medical Officer presents his usual able report, and is able to congratulate the district on the reduction in the death rate. Special thanks are due to him for having furnished a complete table of statistics.

**Prevalence of Disease.**—The Infectious Disease (Notification) Act is in force, and only four cases were notified during the year, including one of enteric fever, two of erysipelas, and one of scarlet fever.

Four deaths from cancer were registered. The local etiology of this disease is alluded to elsewhere.

**Means of Prevention of Infectious Disease.**—No isolation hospital has been provided for this district, though Dr. Poyntz-Wright has annually urged the provision of such a building for many years.

Houses in which infectious illness has occurred are visited by the Inspector, who distributes a solution of Formalin as a disinfectant, and subsequently fumigates the premises with Formic aldehyde.

One-fourth of the children born in the district are un-vaccinated.

**Sewerage and Sewage Disposal.**—The sewerage of the district has received attention. Nothing special requires to be reported about it.

**General Sanitation and Administration.**—The district has been frequently inspected by the Medical Officer and the Sanitary Inspector. Much valuable work has been steadily carried out, and every effort made to bring the sanitation of the district into a high state of efficiency.

Some observations by Dr. Poyntz-Wright on various matters are quoted in the first part of my report

## Sanitary Inspector's Report for the year 1897 :—

Number of complaints received during the year	...	...	...	...	...	8
Number of houses, premises, &c., inspected	...	...	...	...	...	25
Number of re-inspections of houses, premises, &c.	...	...	...	...	...	40
Orders issued for sanitary amendments of houses and premises	...	...	...	...	...	19
Houses, premises, &c., cleansed, repaired, whitewashed, &c.	...	...	...	...	...	1
Houses disinfected after illness of an infectious character...	...	...	...	...	...	2
House drains repaired, cleansed, trapped, &c.	...	...	...	...	...	11
Privies and water closets repaired, &c.	...	...	...	...	...	16
„ new provided	...	...	...	...	...	5
Waste pipes connected with drains, &c., abolished	...	...	...	...	...	6
Dust removal—number of communications received and attended to	...	...	...	...	...	8
Removal of accumulations of dung, stagnant water, animal and other refuse	...	...	...	...	...	2
Bake-houses inspected	...	...	...	...	...	5
Slaughter-houses inspected	...	...	...	...	...	5

## LUTON (RURAL).

*Medical Officer of Health.*—A. MORCOM, L.R.C.S., L.M.

Area in acres, 30,966. Census population, 8,275.

	1895.	1896.	1897.
Population estimated to middle of year	8,275	8,308	8,875.
Birth rate per 1,000 of the population	26.5	23.4	27.3
General death rate per 1,000	—	—	13.7
Corrected general death rate	13.6	12.5	13.6
Zymotic death rate per 1,000	0.8	1.8	1.9
Death rate from phthisis	0.84	0.7	0.5
Death rate from respiratory diseases	1.81	1.3	0.9
Deaths under 1 year to 1,000 births	109.0	117.9	135.7
Deaths over 65, percentage of total deaths	—	33.9	26.8

**Prevalence of Disease.**—The Infectious Disease (Notification) Act is in force, the number of certificates received during the year being as follows :—

Diphtheria	...	...	...	3
Scarlet Fever	..	...	...	11
Enteric Fever	...	...	...	3
Erysipelas	...	..	...	12

29

Whooping cough was somewhat prevalent in the Luton (Rural), Houghton and Studham districts.

**Means of Prevention of Infectious Disease.**—No isolation hospital has yet been provided for this district. Houses in which infectious disease has occurred are disinfected and disinfectants supplied.

An efficient apparatus for the disinfection of bedding, etc., is required.

**Water Supply.**—The water supply of some parts of the district has received attention during the year.

Schemes for Barton and Stopsley have been considered by the Council.

The supply from the public wells has been good, and everything has been done to ensure purity and prevent surface pollution.

**Sewerage and Sewage Disposal.**—The drainage and sewerage is reported as fairly satisfactory, and various improvements have been carried out in different parts of the district.

There are still a great many privies which might with advantage be converted into the pail system.

**Removal of Refuse.**—A system of scavenging has been adopted and prompt removal of refuse is insisted upon.

**Premises Regulated by Sanitary Authorities.**—The factories, workshops, bake-houses, slaughter-houses, cow-sheds and dairies, have been regularly inspected and improvements carried out where necessary.

**House Sanitation.**—An improvement is reported each year in the sanitary condition of the houses of the poorer classes.

Overcrowding is hardly noticeable and more attention is given to cleanliness and ventilation.

**Adoption of Permissive Acts and Bye-laws.**—The Infectious Disease (Notification) Act and the Public Health Acts Amendment Act, 1890, are in force.

**General Sanitation and Administration.**—The district is under efficient supervision, and much useful work has been carried out under the Inspector of Nuisances.

**Sanitary Inspector's Report :—**

Houses repaired, &c. ... ..	20
Houses disinfected after infectious disease ... ..	12
Removal of refuse, closets, dumb wells, &c., cleaned	9
(By order).	
Drainage works ... ..	20
Water supply ... ..	23
Ashpits, closets (structural) repaired ... ..	9
Bakehouses inspected ... ..	17
Slaughter-houses inspected ... ..	9
Cowsheds and Dairies ... ..	23
Smoke nuisances ... ..	Nil
Legal proceedings ... ..	Nil

## WOBURN (RURAL)

*Medical Officer of Health.*—C. E. PRIOR, M.D., F.R.C.S.

Area in acres, 29,603.

Census population, 9,277.

	1892.	1893.	1894.	1895.	1896.	1897.
Population estimated to middle of year	9,200	9,230	9,230	9,200	9,200	9,100.
Birth rate per 1,000 of population ...	23.3	23.8	24.38	24.45	24.4	22.3.
General death rate ...	—	—	—	—	—	16.6.
Corrected general death rate ...	17.97	16.36	15.92	18.8	13.9	17.1.
Zymotic death rate per 1,000 ...	0.9	0.7	0.8	0.21	0.9	1.0.
Death rate from phthisis ...	0.8	1.3	0.6	1.19	0.8	0.6.
Death rate from respiratory diseases	3.2	2.4	3.3	3.15	1.0	1.9.
Deaths under one year to 1,000 births	111	100	97	151	80.0	108.
Deaths over 65, percentage of total deaths—	—	—	—	—	39.0	46.

**Prevalence of Disease.**—The Infectious Disease (Notification) Act has been in force since 1896.

The number of certificates received during the year 1897 was 71.

Scarlet Fever ...	...	...	46
Diphtheria ...	...	...	16
Enteric Fever ...	...	...	3
Erysipelas ...	...	...	6
			—
			71

Both Scarlet Fever and Diphtheria were prevalent in the parishes of Harlington and Aspley Guise. The Medical Officer suggests some connection between the two diseases.

**Infectious Disease Prevention.**—No isolation hospital has been provided for the district. Whether disinfection is undertaken by the Council and disinfectants supplied gratuitously or what are the means at the disposal of the Medical Officer for the prevention of infectious disease is not alluded to. Dr. Prior laments that vaccination has become a dead letter though the proportion of unvaccinated persons in the district at present is not very large.

**Water Supply.**—The condition of the water supplies remains much as heretofore, no satisfactory arrangement having been made with regard to Hockcliffe or Tilsworth. At Hockcliffe there are ample facilities for the conveyance of excellent water to most of the houses from a source immediately outside the village, and the need of some such scheme has been pointed out in Reports both from the Parish and District Councils.

**Sewerage and Sewage Disposal.**—Earth or pail closets are generally in use in the Bedford estates, and the contents are deposited on gardens belonging to the cottages. In other parts of the district privy middens exist which overflow and discharge into the neighbouring ditches rendering them foul and polluted.

**House Sanitation.**—No particular information is afforded as to the condition of the dwellings in this district. The Medical Officer advocates the provision of good sized gardens or allotments in connection with the cottages.

**Adoption of Permissive Acts and Bye-laws.**—The Infectious Disease (Notification) Act, Infectious Disease (Prevention) Act, and Public Health Acts Amendment Act, Part III., are in force in the district.

Sanitary Inspector's Report for the year ended 31st December, 1897 :—

Number of nuisances reported ... ..	64
„ „ abated without notice ... ..	33
„ notices served .. ..	24
„ nuisances abated after notice ... ..	21
„ „ in process of abatement ... ..	10
Total ... ..	152

Classification of Nuisances.

Foul accumulations ... ..	8
Defective and over-flowing closets ... ..	28
Defective water supply ... ..	9
Dilapidated and overcrowded houses ... ..	3
Pigsty nuisances... ..	1
Defective drainage ... ..	12
Other nuisances ... ..	3
Total ... ..	64

House Sanitation - The report on sanitation is included in the condition of the district in the district. The district officer also states the provision of good water supply in the district in connection with the water.

Adoption of Preventive Acts and By-laws - The Preventive Act (No. 1 of 1907) and the Sanitation Act (No. 1 of 1907) are in force in the district.

Sanitary Inspector's Report for the year ended 31st December 1907 - The Sanitary Inspector's Report for the year ended 31st December 1907 is as follows: -

Sanitation - The Sanitation Committee has been formed in the district. The Committee has been working since the 1st of January 1907. The Committee has been working in connection with the Sanitation Act (No. 1 of 1907) and the Sanitation By-laws (No. 1 of 1907). The Committee has been working in connection with the Sanitation Act (No. 1 of 1907) and the Sanitation By-laws (No. 1 of 1907).

Water Supply - The water supply in the district is as follows: -

Public Health - The Public Health Officer has been appointed in the district. The Public Health Officer has been working since the 1st of January 1907. The Public Health Officer has been working in connection with the Public Health Act (No. 1 of 1907) and the Public Health By-laws (No. 1 of 1907).

Sanitation - The Sanitation Committee has been working in connection with the Sanitation Act (No. 1 of 1907) and the Sanitation By-laws (No. 1 of 1907). The Sanitation Committee has been working in connection with the Sanitation Act (No. 1 of 1907) and the Sanitation By-laws (No. 1 of 1907).

Public Health - The Public Health Officer has been working in connection with the Public Health Act (No. 1 of 1907) and the Public Health By-laws (No. 1 of 1907).

**APPENDIX.**

APPENDIX

# COUNTY OF BEDFORD.

Year ending 31st December, 1897.

TABLE A. (URBAN).

TABLE giving area, total registered deaths, birth rates and death rates from all causes, zymotic diseases, phthisis, and respiratory diseases, and also infantile and senile mortality in each of the Urban Districts of the County.

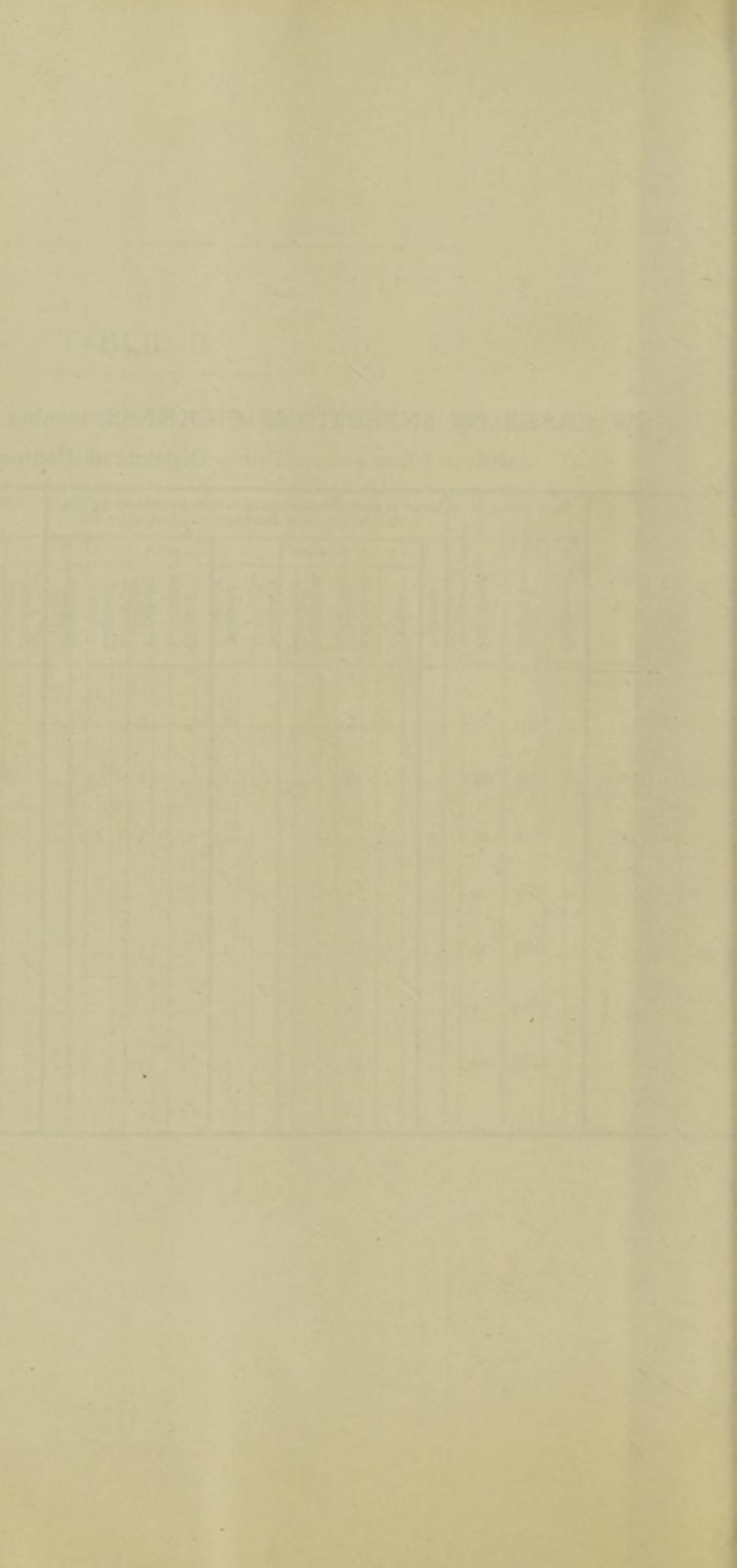
URBAN DISTRICTS.  (In Districts marked by an asterisk the Rates are calculated, after correction for Non-residents.)	1	2	3	4	5	6	Annual Rates per thousand of estimated population.						13	14
							7	8	9	10	11	12		
AMPTHILL	...	William J. Taylor, L.R.C.S., L.R.C.P.	1,742	40	34		23.4	17.4	14.8	0.8	3.05	2.1	108	47.5
BEDFORD *	...	C. E. Prior, M.D., F.R.C.S.	2,223	466	433		22.2	13.8	12.9	1.2	0.8	1.7	128.0	28.0
BIGGLESWADE *	...	C. E. Prior, M.D., F.R.C.S.	4,310	107	74		30.0	21.8	15.3	0.8	1.2	1.8	136.0	35.0
DUNSTABLE	...	A. Morcom, L.R.C.S., L.M.	453	71	69		19.2	13.9	13.5	0.3	0.7	2.9	122.4	42.2
KEMPSTON	...	George Butters, M.B., C.M.	1,204	53	—		33.0	13.25	—	1.75	1.0	2.7	159.0	20.7
LEIGHTON BUZZARD *	...	J. A. Hedges, M.R.C.S., L.S.A.	1,700	94	88		20.44	13.8	12.9	0.4	2.0	1.1	57.5	42.6
LUTON	...	Horace Sworder, M.R.C.S., L.R.C.P.	3,134	537	—		29.2	15.8	—	1.8	1.02	1.9	187.9	22.9



TABLE C.

NEW CASES OF INFECTIOUS SICKNESS, coming to the knowledge of the Medical Officers of Health during the year 1897 in each of the Urban Districts of Bedfordshire, classified according to Diseases and Localities.

URBAN DISTRICTS.	New Cases of Sickness in each district coming to the knowledge of the Medical Officer of Health.													Number of Cases removed from their homes in the several districts for treatment in Isolation Hospital.													Infectious Disease Notification Act in force.	Infectious Disease Prevention Act in force.	Infectious Hospital provided.	Means of Disinfection.	Ambulance.
	Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	FEVERS.				Cholera.	Erysipelas.	Influenza.	Measles.	Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	FEVERS.				Cholera.	Erysipelas.									
					Typhus.	Enteric or Typhoid.	Continued.	Relapsing.									Purpural.	Typhus.	Enteric or Typhoid.	Continued.			Relapsing.	Purpural.							
AMPTHILL	...	...	...	...	1	...	...	1	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes	No	No.	Disinfectants supplied gratuitously. Sulphur fumigation on houses. No steam disinfectant.	No.
BEDFORD	...	95	66	...	6	...	...	1	...	22	...	...	22	13	...	...	3	...	...	...	...	...	...	...	...	Yes	?	Unfurnished iron building without necessary staff, suitable for smallpox only.	Sulphur fumigation of houses. No steam disinfecting apparatus.	Not reported on.	
BIGGLESWADE	...	2	20	2	...	...	...	...	...	5	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	Yes	Yes	Yes. Joint hospital for Urban and Rural districts.	Disinfectants supplied gratuitously. Sulphur fumigation of houses.	Yes.	
DUNSTABLE	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes	No	No.	Disinfectants supplied gratuitously. Sulphur fumigation of premises. No steam disinfectant.	No.	
KEMPSTON	...	4	1	...	2	...	...	1	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes	Yes	No.	Disinfectants supplied gratuitously. Sulphur fumigation of houses. No steam disinfectant.	No.	
LEIGHTON BUZZARD	...	3	3	...	4	...	...	...	...	...	...	...	2	2	...	...	1	...	...	...	...	...	...	...	...	No	No	Yes.	Disinfectants supplied gratuitously. Sulphur disinfection of houses. No steam disinfectant.	Yes.	
LUTON	...	185	12	...	37	6	...	6	1	53	...	...	27	...	...	30	...	...	...	...	...	...	...	...	...	Yes	Yes	Yes.	Disinfectants supplied gratuitously. Sulphur fumigation of houses. No steam disinfectant.	Yes.	



# COUNTY OF BEDFORD.

Year ending 31st December, 1897.

TABLE D (RURAL).

TABLE, giving area, total registered deaths, birth rates and death rates from all causes, zymotic diseases, phthisis, and respiratory diseases, and also infantile and senile mortality in each of the Rural Districts of the County.

RURAL DISTRICTS.	Medical Officer of Health.	Area (Acres).	Total Deaths.	Deaths after correction for non-residents.	Annual Rates per thousand of estimated population.							Infantile Mortality Deaths under one year per 1,000 Births.	Senile mortality Deaths over 65, percentage of total deaths.
					Birth Rate.	General Death Rate.	Corrected Death Rate.	Zymotic Death Rate.	Phthisis Death Rate.	Respiratory Death Rate.	10		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
AMPTHILL ...	C. M. Fegen, M.R.C.S., L.R.C.P.	40,332	189	—		23.9	14.3	—	0.9	0.9	2.2	104.9	41.7
BEDFORD ...	C. E. Prior, M.D., F.R.C.S.	94,271	264	304		24.3	13.0	15.6	1.3	0.7	2.4	88.7	47.0
BIGGLESWADE*	C. E. Prior, M.D., F.R.C.S.	53,721	396	318		27.0	18.2	†15.3	0.8	0.9	2.9	110.3	38.6
EATON BRAY ...	J. A. Hedges, M.R.C.S., L.S.A.	8,891	46	49		27.0	13.3	14.2	0.29	2.0	2.3	96.7	32.6
EATON SOCON ...	T. Poyntz-Wright, M.R.C.S., L.S.A.	16,684	48	—		23.0	13.33	—	0.2	0.83	3.61	58.0	45.8
LUTON ...	Augustus Morcom, L.R.C.S., L.M.	3,966	122	119		27.3	13.7	13.6	1.9	0.5	0.9	135.7	26.8
WOBURN*	C. E. Prior, M.D., F.R.C.S.	29,603	151	156		22.3	16.6	17.1	1.0	0.6	1.9	108	46.

† These death rates are calculated on the population corrected for non-residents in the Three Counties Asylum.



TABLE F.

NEW CASES OF INFECTIOUS SICKNESS, coming to the knowledge of the Medical Officers of Health during the year 1897 in each of the Rural Districts of Bedfordshire, classified according to Diseases and Localities.

RURAL DISTRICTS.	New Cases of Sickness in each district coming to the knowledge of the Medical Officer of Health.											Number of Cases removed from their homes in the several districts for treatment in Isolation Hospital.											Infectious Disease Notification Act in force.	Infectious Disease Prevention Act in force.	Infectious Hospital provided.	Means of Disinfection.	Ambulance.				
	Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Group.	FEVERS.				Cholera.	Erysipelas.	Anthrax.	Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Group.	FEVERS.				Cholera.	Erysipelas.										
					Typhus.	Enteric or Typhoid.	Continued.	Relapsing.								Purpural.	Typhus.	Enteric or Typhoid.	Continued.			Relapsing.						Purpural.			
AMPTHILL	7	9	...	...	5	...	...	1	...	24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes	No	No.	Sulphur fumigation of houses. Disinfectants supplied gratuitously. No steam disinfectant.	No.
BEDFORD	15	38	...	...	6	...	...	1	...	18	1	...	18	...	1	...	...	...	...	...	...	...	...	...	...	...	Yes	?	No.	?	No.
BIGGLESWADE	12	42	...	...	16	1	...	1	...	44	...	3	7	...	2	...	...	...	...	...	...	...	...	...	...	Yes	?	Yes.	?	Yes.	
EATON BRAY	7	1	...	...	2	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes	No	No.	Disinfectants supplied gratuitously. Sulphur fumigation of houses.	—	
EATON SOCON	1	...	...	...	1	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes	Yes	No.	Disinfectants (Formalin) supplied gratuitously. Fumigation of houses with Formic aldehyde.	No.	
LUTON	16	3	...	...	3	...	...	...	...	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes	No	No.	Disinfectants supplied gratuitously. Sulphur fumigation of houses. No steam disinfectant.	No.	
WOBURN	46	16	...	...	3	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes	Yes	No.	?	No.	

