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Bedfordshire County Council.

REPORT

Upon the Sanitary Condition

OF THE

ADMINISTRATIVE COUNTY OF BEDFORD

FOR THE YEAR 1896,

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.

PRESENTED TO THE COUNCIL 5TH NOVEMBER, 1897.

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TABLE B.—Table of Deaths during the year 1896, in the Urban Districts, classified according to Diseases, Ages, and Localities.

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TABLE D.—Table of Deaths during the year 1896 in the Rural Districts, classified according to Diseases, Ages, and Localities.

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

MY LORDS AND GENTLEMEN,

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

The same classification is adopted as in previous years, but the proceedings of the County Council with regard to sanitation are recorded for the first time. In this way I have endeavoured to convey some idea of what has been done in this direction during the year, and the lines on which the Council are proceeding. It is thought that a more intimate knowledge of the spirit in which public health matters are dealt with in the County will do something to bring about a more hearty co-operation with efforts which are directed to stem the tide of disease, and raise a higher standard of health in places that are in sore need of it.

No doubt it takes a considerable time to bring about improvements in public water supplies, sewerage and drainage systems, infectious hospital accommodation, methods of disposal of refuse, disinfection, &c., but such reforms are likely to be effected more rapidly under the stimulus of a Committee of the County Council, whose duty it is to periodically report upon the action taken by the various Authorities than if left entirely to local enterprise.

The number of Sanitary Authorities which have furnished Reports to the County Council for the year 1896 is fourteen, one more than last year, owing to the Parish of Kempston, which

previously formed part of the Bedford Rural District, having been constituted a separate Urban Authority.

The Report of the Medical Officer of Health for Eaton Bray Rural District had not been received at the time of going to press, though after several applications the statistical tables were forthcoming on July 10th.

It is satisfactory to note that in response to the appeals of the County Council, only one Report (Luton Rural District) is now presented in manuscript. It is hoped that eventually all will be printed and circulated in their respective districts.

Some changes occurred in the Sanitary Medical Service during the year 1896. Dr. George Butters was appointed the first Medical Officer of Health for the Kempston Urban District. Dr. G. S. Stein resigned his appointment as Medical Officer of Health of the Ampthill Urban District, and was succeeded by Dr. William J. Taylor. It is with much regret that I have to report that in December last Dr. H. W. A. Sandell failed to be re-elected Medical Officer of Health for Eaton Bray Rural District. As the Medical Inspector of the Local Government Board very truly reported, "In consequence of his recommendations and with his advice, such improvement as has been effected in the sanitary condition of the village has been carried out."

Some uncertainty having been manifested as to whether County Councils possessed any powers of initiative in the event of a Medical Officer of Health of a Local Authority not disclosing in his Reports the failure of his Authority to enforce the provisions of the Public Health Act, I wrote to the Local Government Board asking whether they recognised the right of County Councils to make "complaint" under Section 299 of the Public Health Act, 1875, or whether they held that County Councils were limited to a "representation" under Section 19 of the Local Government Act, 1888

I received the following reply, from which it may be gathered that County Councils do possess statutory powers of investigation in the event of undisclosed defaults.

No. 94484 K²
1896.

Local Government Board,
Whitehall, S.W.
August, 1896.

Sir,

I am directed by the Local Government Board to advert to your letter of the 10th ultimo, addressed to Dr. R. Thorne Thorne, and in reply to state that it is open to a County Council to make "complaint" to the Board under Section 299 of the Public Health Act, 1875. It should, however, be borne in mind that such a complaint ought to be based upon the results of actual investigation by the County Council or their officers; and that if the circumstances are such as to justify the Board in entertaining the complaint to the extent of directing local enquiry, the County Council will be expected to support their complaint by the production of the necessary evidence at the Enquiry.

I am, Sir,

Your obedient Servant,
W. E. KNOLLYS,
Assistant Secretary.

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,
30th July, 1897.

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THE COUNTY GENERALLY.

The Administration of the County is under the supervision of the Board of Supervisors, who are elected by the people of the County.

The Board of Supervisors is composed of five members, who are elected by the people of the County for a term of four years.

The Board of Supervisors is the highest authority in the County, and has the honor and the power of the County.

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THE COUNTY.

The County is divided into four districts, each of which is under the supervision of a District Officer. The District Officers are elected by the people of the County for a term of four years.

The District Officers are the highest authority in the County, and have the honor and the power of the County.

The District Officers are the highest authority in the County, and have the honor and the power of the County.

NAME	RESIDENCE	EDUCATION	EXPERIENCE
John Smith	123 Main St.	High School	10 years
John Doe	456 Main St.	High School	10 years
John Brown	789 Main St.	High School	10 years
John Black	101 Main St.	High School	10 years
John White	112 Main St.	High School	10 years

THE COUNTY

THE COUNTY GENERALLY.

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

No alteration has taken place in the County boundaries, but the Parish of Kempston, which formerly formed part of the Bedford Rural District has been constituted a separate Urban Authority.

The Urban Districts within the County are now 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 1896. It was as follows:—

Urban Districts ...	...	...	...	...	87,563
Rural Districts ...	...	...	...	...	78,494
The County	...	...	...	...	<u>166,057</u>

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 1896 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 2,077.

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, 1896.	BIRTHS.	BIRTH-RATE PER 1,000 OF THE POPULATION, 1896.
Urban Districts	87,563	2,273	25·9
Rural Districts	78,494	2,044	26·04
Administrative County	166,057	4,317	25·9
England and Wales	30,717,355	917,201	29·7

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

In the whole of England and Wales the birth-rate for 1896 was lower than any on record excepting 1894, and 1·3 per 1,000 below the mean rate for the 10 years 1886 to 1895.

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, 1896.	DEATHS.	DEATH-RATE PER 1,000 POPULATION.
Urban Districts	87,563	1,158	13·2
Rural Districts	78,494	1,082	13·7
Administrative County	166,057	2,240	13·4
England and Wales	30,717,355	527,929	17·1

The highest death-rates, 16·6 and 16·2 per 1,000 respectively, were recorded in the Luton Urban District and Eaton Socon Rural District; the lowest, 9·8 per 1,000, in the Eaton Bray Rural District.

The death-rate in 1896 for England and Wales was lower than the rate in any previous year, excepting 1894, and compared with the 10 years 1886 to 1895 showed a decrease of 1·7 per 1,000.

The total number of deaths registered in the County was 2,361. Of these 121 were recorded by the Medical Officers of Health as occurring outside their district.

It may here be mentioned that the gross death-rate should always be recorded with the death-rate corrected for non-residents, and it is hoped that Medical Officers will do their utmost to ensure accuracy in these returns.

There is no doubt that the death-rate, when properly estimated, is an excellent index of public health, and becomes particularly valuable when continued over a period of years; nevertheless the publication of abnormally low death-rates should be regarded with a considerable amount of suspicion, and upon investigation will generally prove to be fallacious. The error is generally due to the effect of public institutions, such as for example, a work-house or a hospital, situated just outside the district; or in the case of educational centres, the excessive proportion of young persons, who yield but a small number of deaths. The male

death-rate is moreover higher than the female death-rate, and consequently an excess of females in a district, which often occurs in health resorts, would also tend to lower the death-rate. Before therefore, contrasting the death-rate of one district with another, correction should be made for age, and sex distribution.

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, 161·8 per 1,000 births, was recorded in the Borough of Luton, followed by Biggleswade Urban and Rural Districts with 136 and 133 per 1,000 respectively. The lowest, 47·0 per 1,000, occurred in the Eaton Bray Rural 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, 1896
Urban Districts ...	2,273	277	121·8
Rural Districts ...	2,044	202	98·8
Administrative County	4,317	479	110·9
England and Wales ...	917,201	135,487	148

There is no doubt that most of this mortality is preventable, and largely due to ignorance and maternal neglect.

Dr. Poyntz-Wright, Eaton Socon Rural, writes :—"As to the causes of infantile mortality, the most important I take it is want of breast milk and a consequent improper dietary, followed by ignorance of all sanitary laws, and frequently indifference and neglect. In the lower classes I have found that mothers have not any idea how their young children should be fed when they are unable to be nursed at the breast, added to which, when the mothers are at work, the baby is relegated to the care of another child scarcely big enough to hold it in its arms, with the result that it is uncared for, exposed to all sorts of contingencies, and rarely fed at proper intervals."

The continuously high rate of infantile mortality in some of the Urban Districts is certainly a matter for serious reflection.

At Luton, the employment of women in industrial occupations may be responsible for a large proportion of it, but in other districts the lamentable ignorance which exists among the poor as to the proper principles of feeding infants, coupled with insanitary surroundings, appear to be the main contributory causes.

The effect of factory labour on infant mortality is shown in the following table compiled by the Medical Officer of Health for Staffordshire :—

Deaths in children under one year in three classes of Artisan Towns in Staffordshire.			
	Class I. Many women engaged in work.	Class II. Fewer women engaged in work.	Class III. Practically no women engaged in work.
10 years, 1881-90 ...	195	166	152
7 years, 1889-95 ...	203	175	165

The actual causes of death most frequently registered in the case of infants under one year appear to be premature birth, hereditary syphilis, debility, atrophy, inanition, gastro enteritis, diarrhoea, whooping cough, bronchitis, pneumonia, tubercular diseases, dentition and convulsions.

It is remarkable that the number of deaths from premature birth has much increased in recent years, the increase having been estimated by Dr. Newsholme as high as 40 per cent. The London tables of mortality show that 1,930 deaths were registered as due to this cause in 1886, and 2,534 deaths in 1896. It must also be remembered that a large number of deaths attributed to the various diseases mentioned above are indirectly the result of premature birth.

Dr. Vallin, in a report presented to the Academy of Medicine of France, on November 12th, 1895, says :—" We are obliged to regard as prematurely born all infants who do not weigh at birth 2 kil. 500 grammes (5 lb. 9 oz.); and the number of them is large, since they range from 15 to 30 in a 100 births. The delicate and minute care which these frail creatures demand, above all in winter, to preserve them from cold, is so great, that hitherto the majority of them have died."

The possibility of saving a large number of prematurely born infants has been recognised in France since 1878, and an ingenious apparatus known under the name of Coveuse was first

introduced at the Paris Maternity Hospital by Dr. Tarnier in 1880, and has been instrumental in saving a large number of these children. This apparatus however required constant attention, and could not be easily used. Various improvements have since been introduced, and an apparatus has now been constructed and patented which fulfils all the requirements formerly lacking. This apparatus, Altmann's patent, has been this year shown at the Victorian Exhibition, and it is stated that about 75 per cent. of premature or weakly born infants have been saved by the new apparatus in those continental cities where it is being employed.

The most important indications of the vitality of an infant are the weight and temperature, and if there be no congenital or inherited defect, the chance of saving a premature or weakly born infant depends entirely upon the weight and temperature of the body at the time of placing it in the incubator.

The following classification, based upon past results, shows how a new born infant's weight affects its chance of life on the average :—

1. All infants weighing less than 2 lb. 3 ozs. die on the day of their birth.
2. If the weight is from 2 lb. 3 ozs. to 3 lb. 5 ozs., nearly half of them are saved by the aid of Altmann's apparatus.
3. If the weight is from 3 lb. 5 ozs. to 4 lb. 7 ozs., 72 per cent. are saved.
4. If the weight is from 4 lb. 7 ozs. to 5 lb. 9 ozs., 90 per cent. are saved.
5. With children weighing more than 5 lb. 9 ozs. the percentage of mortality is so infinitesimal, that practically all are saved.

In view of these results it is urged by the exhibitors that every city of importance should possess a maternity or other public institution where incubators may be used. Certainly provision might easily be made for the establishment of such places in connection with the day nurseries and crèches which already exist in some manufacturing towns. The new apparatus is extremely simple, and a uniform temperature is automatically maintained. The incubator is a metal and glass case under a cubic yard in capacity, mounted upon a metal stand. In the front part are two swinging glass doors, which are made to close tightly. On the left hand side is a window through which the mother is able to see the child if the apparatus is placed next to her bed. The child rests on the coverlet of a fine wire hammock suspended from the four corners.

The air enters through a pipe about 4 in. in diameter, which is connected with an air-box placed on the left side of the apparatus, and, before entering, the air is made moist by passing it

through a small sheet of antiseptic absorbent wool, which is suspended in antiseptic or medicated water. The air then passes through dry wool, which retains the soot or other impurities of the atmosphere. From the filter it traverses another pipe which leads to the centre of the incubator. At the mouth of this is placed a round disc, which has the effect of uniformly distributing the atmosphere, and of preventing the air from coming in with a rush or strong draught. On the top of the apparatus a 3 ft. chimney, with a revolving fan, compels the exhausted air to escape. The uniform heating of the case is produced by hot water drawn from an external boiler heated by paraffin, gas, or electricity, the circulation being effected by a copper pipe running beneath the wire hammock. In the right hand wall is fixed a thermostat connected to a light chain, which suspends an aluminium cone-lid over the lamp of the boiler, and its expansions and contractions automatically control the temperature to the degree to which the apparatus is set.

A thermometer suspended upon the inner side of one of the glass doors enables the attendant to observe the interior temperature of the apparatus, whilst a hygrometer indicates the moisture.

The infants are weighed for the first five weeks both before and after taking nourishment. They are fed every two hours during the day, and every three hours during the night. The best indication of progress is the weight and temperature of the infant and the amount of nourishment taken.

They are usually fed on part breast milk and part sterilized milk, and it may be necessary to force it. If possible breast milk is always given in preference to all others. The child is easily seen in the incubator, and immediately it cries it is taken out and fed or cleansed.

Children are kept in the incubators from 7 to 12 weeks.

The temperature of the nursery and incubator is kept at 80° F.

No skilled attendants are necessary, and the apparatus can be used in private houses as well as in public institutions.

It is proposed to place incubator stations in London and other large towns, and on receipt of telegram the apparatus will be despatched on hire for any length of time.

Whether it is advantageous to procure the survival of the premature, weakly and unfit, is a matter of public opinion. It is however stated, that at the annual reunion held in Paris of all the children reared in incubators, no retardation or deterioration of either mental or physical powers have been observed, and the lives thus preserved to the State are in every way as useful as those of persons reared in ordinary circumstances.

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	1,158	329	28·4
Rural Districts	1,082	425	39·2
The County	2,240	754	33·6

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 diarrhoea. Diphtheria now includes croup.

Dysentery and cholera, whether English or Asiatic, would be classified as diarrhoeal 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, 1896.	ZYMOTIC DEATHS.	ZYMOTIC DEATH RATE PER 1,000 POPULATION. 1896.
Urban Districts ...	87,563	136	1·5
Rural Districts ..	78,494	96	1·2
Administrative County	166,057	232	1·3
England and Wales ...	30,717,355	66,936	2·18

The highest zymotic death rate, 2·5 per 1,000, occurred in the Luton Urban District, and was apparently due to an outbreak of measles which caused 31 deaths.

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

Variola.

Only one case of small pox was notified in the County during the year 1896. It occurred at Luton and was removed to the Spittlesea hospital.

No extension took place.

Vaccination.

The result of the epidemic of small pox at Gloucester and the long delayed publication of the report of the Royal Commission on vaccination drew a considerable amount of public attention to the value and safety of re-vaccination. The result of the Commission was to still further establish vaccination as the primary preventive measure for small-pox. The report is signed by Lord Herschell, the Chairman; Judge Meadows White, Q.C.; Mr. John S. Dugdale, Q.C.; Sir Edwin Galsworthy, Chairman of the Metropolitan Asylums Board; Sir Charles Dalrymple, M.P.; Mr. Samuel Whitbread, ex-M.P., and Mr. John A. Bright, ex-M.P. It is also signed by the following members of the medical profession: Sir James Paget, Bart.; Sir W. Guyer Hunter, ex-M.P.; Prof. Michael Foster, and Mr. Jonathan Hutchinson.

With regard to the efficacy of vaccination, the conclusions which the above-named gentlemen arrived at are as follows:—

1. That it diminishes the liability to be attacked by the disease.
2. That it modifies the character of the disease, and renders it (*a*) less fatal, and (*b*) of a milder or less severe type.
3. That the protection it affords against attacks of the disease is greatest during the years immediately succeeding the operation of vaccination. It is impossible to fix with precision the length of this period of highest protection. Though not in all cases the same, if a period is to be fixed, it might, we think, fairly be said to cover, in general, a period of nine or ten years.
4. That after the lapse of the period of highest protective potency, the efficacy of vaccination to protect against attack rapidly diminishes, but that it is still considerable in the next quinquennium, and possibly never altogether ceases.
5. That its power to modify the character of the disease is also greatest in the period in which its power to protect from attack is greatest, but that its power thus to modify the disease does not diminish as rapidly as its protective influence against attacks, and its efficacy during the later periods of life to modify the disease is still very considerable.
6. That re-vaccination restores the protection which lapse of time has diminished, but the evidence shows that this protection again diminishes, and that, to ensure the highest degree of protection which vaccination can give, the operation should be at intervals repeated.
7. That the beneficial effects of vaccination are most experienced by those in whose case it has been most thorough. We think it may fairly be concluded that

where the vaccine matter is inserted in three or four places, it is more effectual than when introduced into one or two places only, and that if the vaccination marks are of an area of half a square inch, they indicate a better state of protection than if their area be at all considerably below this.

Dr. W. J. Collins, formerly a Vice-President of the London Society for the Abolition of Compulsory Vaccination, and Mr. J. A. Picton, lately M.P. for Leicester, dissent from the Report as a whole, and rely upon ordinary preventive measures, which they summarise as follows:—

1. Prompt notification of any illness suspected to be small-pox. Improved instruction in the diagnosis of small-pox.
2. A hospital, suitably isolated, of adequate accommodation, in permanent readiness, and capable of extension if required. No other disease to be treated at the same time in the same place.
3. A vigilant sanitary staff ready to deal promptly with first cases, and, if necessary, to make a house-to-house inspection. The Medical Officer of Health to receive such remuneration as to render him independent of private practice.
4. Prompt removal to hospital by special ambulance of all cases which cannot be properly isolated at home. Telephonic communication between Health Office and hospital.
5. Destruction of infected clothing and bedding, and thorough disinfection of room or house immediately after removal of the patient.
6. Daily observation (including, where possible, taking the temperature and inspection for rash) of all persons who have been in close contact with the patient during his illness; such supervision to be carried out either in quarantine stations (away from the hospital) or at their own homes.
7. Closure of schools on the occasion of the occurrence of small-pox among the scholars or teachers.
8. Hospitals and quarantine stations to be comfortable and attractive, and so administered as to secure the confidence of the public. Hospital treatment to be free to all classes, and compensation to be paid to those detained or otherwise inconvenienced in the public interest, at the public expense.
9. Tramps entering casual wards to be medically inspected, their clothing to be disinfected, and bath provided. The measures for detection and isolation of small-pox

in common lodging houses, suggested in section 507 of the Report to be carried out.

10. International notification of the presence of small-pox, and special vigilance at seaports in communication with infected places, after the plan adopted in the case of cholera.
11. Attention to general sanitation, prevention of overcrowding, abundant water supply, and frequent removal of refuse.

Scarlet Fever.

The number of cases of scarlet fever reported in the County during 1896 was 710. Of these 236 occurred at Luton, and 100 at Bedford.

The disease must have been of mild type, as only 17 deaths were recorded. Of these 13 occurred in the Urban Districts and 4 in the Rural Districts.

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 is 156, and the number of deaths 31, of which 18 occurred in the Urban District and 13 in the Rural District, giving a case mortality of 19·8 per cent.

The disease was most prevalent in the Biggleswade Rural District, where an outbreak occurred at Hatley Cockayne, a little village about two miles to the east of Potton. The whole parish contains only 20 inhabited houses, and the total population is about 80. In this small population 10 notifications of Diphtheria were received, and 23 cases of throat illness occurred.

Dr. Prior reports that the invasion of the disease was so sudden that it was impracticable to remove the first patients, and it appears that the Isolation Hospital belonging to the Biggleswade Rural District Council was not at the time available for diphtheria cases, all the beds being reserved for cases of enteric fever, consequently nearly all the patients were treated at their own homes. In this small but severe epidemic there was abundant evidence of contagion and transmission from family to family and from person to person, but the absolutely original case was not discovered.

Enteric Fever.

Altogether 92 cases of this disease were notified in the County during the year 1896, of which 57 occurred in the Biggleswade Rural District, and 16 in the Borough of Luton.

9 deaths were registered, of which 5 occurred in the Urban, and 4 in the Rural Districts.

It is satisfactory to observe that greater attention is directed to the drainage system of dwellings, and to the necessity of adequate flushing.

Recent investigations by the Local Government Board have shown that enteric fever, though essentially a water-borne disease, may be communicated by sewage irrigated shell-fish, as well as by some other kinds of food.

The great element of danger from personal infection has been receiving increased attention ; the frequency with which nurses attending enteric fever cases in hospitals contract the disease themselves may be mentioned in this connection.

Dr. Prior (Biggleswade Rural), reports that of the 57 notifications there were 21 removals and 3 deaths. 51 of the cases occurred at Morhanger, Chalton and Blunham. Although the disease was of a mild type, the outbreak was one of the most extensive village epidemics which he has met with during the past twenty years, and as respects the absolute origin of the outbreak, it was more easy for him to say what it was not than what it was. Water from several of the wells at Morhanger and Chalton was analysed and pronounced unfit for drinking, but the wells had no communication and were situated at considerable distances from one another.

Milk was not the cause, as it was obtained from at least three distinct sources.

The villages were repeatedly and carefully visited, and there never existed any local nuisance of sufficient potency to impregnate the whole country with deleterious miasmata.

The first cases were notified on February 19th, and the last on November 5th.

Dr. Prior further reports, that had the first cases been removed to hospital as was repeatedly urged, it is probable that June would have seen the termination of the outbreak. There was abundant evidence of the infectiousness of the disease in its passage from house to house, and from individual to individual.

The polluted condition of the water supply subsequently formed the subject of a Local Government Board enquiry, and the necessity of a wholesome and adequate water supply for the Biggleswade Rural District has become evident.

The Borough of Luton is the next highest in the incidence of enteric fever, 16 cases having occurred there during the year. Of these 16 cases 6 died, giving a high case mortality of 37·5 per cent.

The Medical Officer of Health for Eaton Socon writes :—

“In nearly all the cases of enteric fever which have occurred, insanitary conditions and bad water were present, but even then it is often difficult to define the cause unless certain points are conceded. Whilst it is an undisputed fact that there is a specific poison in connection with this disease which, under favourable conditions, is capable of reproducing itself *ad libitum*—more especially if it gets into drinking water—there are constantly cases cropping up which appear to preclude the possibility of its having been produced by the specific bacilli, or whatever the productive agent may be, and the question is inevitably forced upon us, whether given the existence of such conditions as faecal accumulations, imperfect drainage, and water polluted with faecal or organic matter, it is a *sine qua non* that for the production of typhoid fever from these conditions the specific poison must be present in one or all of them? Is it impossible for a person associated with the above to contract this disease unless they have been exposed to, and been in contact with or have swallowed the specific virus in their drinking water? I can recall cases more than seldom in isolated rural spots, where there has been no record of typhoid for years and years, or possibly within memory, where no member of the family has for months been from home, and where no stranger has visited, but still where there are any amount of insanitary features, but no possibility of the presence of specific poison, and yet typhoid has appeared. How it is to be accounted for, I know not, unless indeed one is forced to the conclusion that this disease can, and at times does, arise *de novo* from some one of the insanitary conditions above mentioned, or may be taken as an air-borne disease which defies alike both time and distance.”

Measles.

In common with apparently the whole of the Midland Counties Measles was epidemic in many parts of the County, and is still rife in several.

The disease is included in the scheduled list of notifications in the Eaton Socon Rural District, and 101 cases were notified in that District during the year.

The total number of deaths registered was 76, of which 42 occurred in the Urban and 34 in the Rural.

No other notifiable disease yields so high a record, both for case incidence and mortality.

Opinions differ in the County as to the advisability of adding Measles to the list of notifiable diseases.

Dr. Sworder, Luton Borough, writes :—" During the year under review there has been a widespread epidemic of this disease, and it is probable that few susceptible children among the working classes have escaped. Mothers generally regard this disease as a trivial one, and make no attempt to isolate the cases as they occur. Another factor which largely tends to increase the spread is that before the characteristic rash appears, there is a period of some three days, during which the patients suffer from severe catarrh, the discharges of which are no doubt highly infectious ; thus the disease is not recognised until it has been communicated to other members of the community. This fact alone makes the compulsory notification of measles cases, in my opinion, undesirable and generally useless. There are many districts which have measles included in the list of notifiable diseases, although to most authorities it seems an unnecessary expense. Thirty-one deaths were referred to this disease alone during the past year, giving a rate per thousand of '97, the largest which has been recorded in this district during the past 17 years."

Dr. Poyntz-Wright, Eaton Socon Rural, is strongly in favour of the notification of measles, in order that a child suffering from the ailment, and other children in the same dwelling, should be at once excluded from school, and if needful, the school closed.

In his district every case of measles is notified, but in view of the heavy expenditure incurred, he thinks it would be well to make a trial of notifying only the first cases occurring in each dwelling. The sanitary officials would at once become aware of the disease, and would exclude all children in the house from school.

The notification of measles and whooping cough has engaged the attention of the Local Government Board, and on the whole it does seem very desirable that Medical Officers of Health should have knowledge of the occurrence of measles in households, some members of which are attending the elementary schools, and if notification applied to first cases only, the question of expense would hardly be a matter of consideration.

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

Whooping Cough.

The total number of deaths from whooping cough during the year was 29, as compared with 44 in the previous year. Six occurred in the Urban and 23 in the Rural Districts.

The districts most affected were the Rural Districts of Biggleswade, Luton, and Woburn.

The observations made with regard to measles apply almost equally to whooping cough, and the measures necessary for the prevention of its spread are practically identical. A great deal of the mortality would be avoided if the disease were regarded more seriously, and the patient properly nursed and kept warm.

Diarrhœa and Dysentery.

The number of deaths registered from this cause in the County was 65, of which 49 occurred in the Urban and 16 in the Rural.

Luton is the only place where there was an epidemic, with regard to which the Medical Officer reports:—"As the past summer was remarkable for its lengthy period of very dry and hot weather, and as we know that the high temperature of the soil is the chief factor in determining a large epidemic of diarrhœa, it is not surprising to find that 27 deaths from the disease occurred in the quarter ending September 30th, all of which deaths, excepting one, were those of children under one year of age. Fourteen were registered in July, and the remaining thirteen in August, in which month none occurred after the 19th, showing that the epidemic ceased at the onset of the wet weather. Of the fourteen deaths in July, only four took place in the first half of the month, and the epidemic reached its height—that is judging from the number of deaths—at the end of July and the beginning of August, when as many as nine occurred in one week. There was only one other death from this disease during the year, and that occurred in the second quarter."

Influenza.

Influenza is beginning to be classified among the so-called zymotic diseases, and has been accorded a place in six of the death returns of the County.

It appears to have been prevalent in the majority of both Urban and Rural Districts, but never at any time became epidemic.

The districts which appear to have had the highest incidence were the Boroughs of Bedford and Luton, and the Biggleswade and Eaton Socon Rural Districts.

Altogether 29 deaths were directly attributed to it, 14 in the Urban and 15 in the Rural Districts.

Phthisis.

There was again a satisfactory decrease in the number of deaths registered from this cause as compared with previous years, viz., 147 as against 187, and 211 in the two preceding years.

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. 1896.	PHTHISIS DEATHS.	PHTHISIS DEATH RATE PER 1,000 POPULATION. 1896.
Urban Districts	87,563	97	1.1
Rural Districts	78,494	50	0.6
Administrative County	166,057	147	0.8

The highest rate, 3.0 per 1,000, was recorded in the Ampthill Urban District, followed by Leighton Buzzard, 2.5 per 1,000; the lowest, 0.2 per 1,000, in the Eaton Bray Rural District.

This disease is the pulmonary form of the more general affection known as consumption or tuberculosis, and is the cause of as many deaths in England and Wales as small-pox, scarlet fever, diphtheria, enteric fever, and diarrhoea put together.

The following Table shows the number of deaths occurring in England and Wales for the ten years, 1886 to 1895.

DEATHS FROM PHTHISIS, ENGLAND AND WALES.

1886.	1887.	1888.	1889.	1890.
47,872	44,935	44,248	44,738	48,366
1891.	1892.	1893.	1894.	1895.
46,515	43,323	43,632	41,641	42,490

DEATH RATE PER MILLION LIVING.*

1886.	1887.	1888.	1889.	1890.
1,739	1,615	1,568	1,573	1,682
1891.	1892.	1893.	1894.	1895.
1,599	1,468	1,468	1,385	1,398

* For comparative purposes the above death rates per million may be reduced to death rates per 1,000 of the population, by placing a decimal point where the comma now is.

If we add the other tubercular diseases, it appears that about one-fifth of the human species die from these causes.

During recent years much attention has been directed to its causation and the channels by which it is most frequently spread.

It has been shown that it is essentially a preventable disease, as preventable as small-pox or enteric fever, and much more so than scarlet fever or diphtheria, but, when once established, no permanent cure has as yet been discovered, though great hopes may be placed in the development of serum therapeutics.

There is no doubt that were the causation and prevention of tuberculosis to receive but a small proportion of the solicitude that is bestowed upon other national evils, much greater practical results would be obtained and thousands of useful lives preserved to the state.

The influence of season on phthisis in England and Wales is shown by the fact that the greatest number of deaths occur in the months of March and April, and the fewest in September and October. Whether this is quite correct for the Midland Counties is somewhat questionable.

Dr. Horace Sworder, Luton Borough, has given special attention to the prevalence of this disease in his district, and reports as follows for 1896 :—

"Only 31 deaths were referred to phthisis, viz., 7 in the first quarter, 10 in the second, 6 in the third, and 8 in the fourth. The phthisis mortality is undoubtedly declining. In 1895 there were 41 deaths; 44 in 1894, and 43 in 1893; the average for the preceding 14 years being 50, while that of the whole of the last 18 years is 47·7. It is quite reasonable to expect that when the Storm Water and Sewerage Scheme is completed, the mortality will still further decline. The two chief causes of our rather high death rate from phthisis are undoubtedly the nature of the trade and the dampness of the soil. The former can be somewhat reduced by the proper application of the sanitary laws relating to factories and workshops, and the latter has been lessened by the money unstintingly spent in the past on the proper disposal of our sewage."

In view of the fact that two of the chief causes of tuberculosis are well within our preventive grasp—the ingestion of tuberculous meat and milk—it is only a question of time and of public opinion, till the slaughtering of cattle is carried out in proper premises and under skilled supervision, and more stringent regulations with regard to inspection of milch cattle and destruction of those affected with tuberculosis are enforced.

Now that the detection of bovine tuberculosis has been facilitated by means of the tuberculin test, the question arises whether the local authority should not require milk vendors to produce, if required, a certificate to the effect that the cows supplying milk have been subjected to this test and proved satisfactory.

Many public institutions in the south of England already insist upon this precaution.

Cancer.

Judging from the number of deaths registered from "cancer," it would appear that a considerable increase is taking place throughout the country. Whether this is due to improved diagnosis or to an actual increase in the number of cases is not clear.

The term as generally used includes all malignant growths and not merely the carcinomata. More attention has been directed to its etiology within recent years, and several medical officers now devote a special heading to it.

It is hoped that the medical officers of both the Urban and Rural Districts will furnish some information with regard to it in their next annual reports, and give their views as to its distribution within the County, and possible etiology.

The disease is especially alluded to in the Luton Borough Report, where 14 deaths were recorded and 5 in the Rural Districts of Ampthill and Eaton Socon.

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.

The advantages of this Act have been pointed out in many previous reports, and it is difficult to understand why this Sanitary Authority still hesitates to adopt the first essential element in the prevention of zymotic diseases. In all the other districts where it is in force, the medical officers are unanimous as to its beneficial influence, even in districts where hospital accommodation has not yet been provided. No friction has ever been experienced, and the expense has been insignificant.

Infectious Disease Prevention.

This important question has been fully dealt with in former Reports.

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.

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 Luton Urban and the Woburn and Eaton Socon Rural Districts. It is hoped that the other districts will recognise its advantages and do likewise.

Hospitals for Infectious Disease.

But little progress was made in this direction during the year, although the subject has received the attention of one or two District Councils, and also of the County generally.

A special Report upon the accommodation within the County and a tentative scheme to obviate the existing deficiency will be found on page 58.

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.

Dr. Poyntz-Wright, who has given special attention to the subject of disinfection as practised both at home and abroad, advocates the use of the Equifex spray producer, by means of which a solution of corrosive sublimate (1 in 1,000) is thrown in a fine spray over the walls and ceiling of the room to be disinfected.

During the past two years this apparatus has been used in several outbreaks of small-pox with satisfactory results, and is employed in many of the Isolation Hospitals throughout the country.

The disinfection of bedding, clothing, &c., cannot however be carried out except by means of a steam disinfecter.

Among the most important of the apparatus in general use may be mentioned Washington Lyon's apparatus, and Thresh's current steam disinfecter.

There is no doubt of the efficiency of the Washington Lyon machine, but the outlay is occasionally prohibitive.

Thresh's apparatus is very simple, is entirely free from mechanical appliances, and much less expensive. The principle

depends upon the passage of a continuous current of steam through the disinfecting chamber, given off from a solution of chloride of calcium, which raises the temperature of the steam to about 220°.

Reck's portable disinfecting apparatus has been found very serviceable in scattered rural districts.

Water Supply.

The condition of water supplies of many of the districts continues very unsatisfactory, and remains a source of continual danger in the event of an outbreak of any of the specific water-borne diseases.

At Ampthill the provision of a wholesome water supply still remains in abeyance, and the Local Government Board has found it necessary to issue an Order requiring the Urban District Council to perform their duty in the matter of providing a supply of water within a specified limited period.

One of the difficulties appears to have been to locate a place where water could be found, and recourse was had to a water diviner, who indicated several such places. Against this it was alleged that the reports of the Geological Surveyor to the Government showed that a proper supply of water could not be found where the diviner had indicated its existence.

Objection having been made by several ratepayers to the expense incurred in the employment of the water diviner, the Auditor decided to surcharge the Councillors with the payments which they had authorised, to the extent of £13 8s. 7d., as in his opinion Local Authorities were not justified in spending public money in exercising powers of this kind.

At Kempston the water supply is derived from shallow wells at various distances from cesspits, and an analysis of the water of a few of these wells is recommended.

Dr. Prior, in reporting on the water supply of the Bedford Rural District, mentions that "The improvement of water supply in villages is generally to be effected in one of two methods; either (1) by the digging of fresh wells in more suitable localities at a better distance from houses, and from sources of pollution, or (2) by bringing a good supply of unquestionable purity through pipes for a considerable distance, and by the erection of stand-pipes at suitable spots in the village or villages through which it passes. To carry out this latter method the intervention of some wealthy resident or proprietor is generally necessary, in fact the expense is apt to run far beyond the resources of an ordinary agricultural village; but the first method is what has been going on, and is still going on, at various points in this district."

In the Biggleswade Rural District the condition of the water supplies of Moggerhanger and Chalton occasioned an inspection by Dr. G. S. Buchanan on behalf of the Local Government Board. He showed that the existing wells of these places are

exposed to opportunities of dangerous pollution, such as those arising from waste water of houses, and from faultily constructed privy pits and cesspools. He goes on to state that it is desirable "That where a well stands in a yard in proximity to dwellings, adequate provision should be made by means of suitable surface drains or otherwise, for the disposal of the slop water of the dwellings, elsewhere than on to, or into the soil of the yard. Similarly the construction of the privy pits and cesspools of the district should be amended, more especially where these are in relation with wells. They should be reduced in capacity, so as to require frequent removal of their contents, and above all, they should be lined with concrete or other impervious material. It may be observed that the operation of 'cleansing,' which had been performed in the case of certain of the Moggerhanger wells, unfavourably reported on by the analysts—a process comprised in emptying the well, and scraping and limewhiting its brickwork—cannot be regarded as affording protection from the sources of pollution to which I have more particularly referred."

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

"The water supplies of the several districts are constantly receiving attention, which they always require where there is no regular and sufficient supply of pure water from a system of waterworks. Where this cannot be provided, the condition of the water supply is nearly always most unsatisfactory and is ever a cause of anxiety, entailing never ending work with, I fear, little adequate result. It is impossible that any water supply can be good which is afforded from shallow wells, badly made, open to surface percolation, and more than frequently situate near to such filth and pollution as arises from drains, cesspools, pigs, and farm yard produce."

The Medical Officer for the Woburn Rural District says :—

"The depths of water supply, to which attention was called in 1895, appear to remain much as heretofore, at least I have not heard of any alteration in the villages of Hockliffe or Tilsworth, in the former of these more especially, considering the repeated visits and reports which were made, it is high time that something should be done."

No doubt the question of supply in Rural Districts which are far away from waterworks, and must be dependent upon springs or wells is a difficult one. Every effort should, however, be made to ensure purity, and the wells should be deep enough to tap the ground water, and be adequately protected from contamination from surface percolation.

Pollution of Rivers and Streams.

No mention is made in any of the reports of any specific pollution of the rivers Ouse, Ivel, or Lea, but an inspection of

Biggleswade Urban District by the County Medical Officer of Health showed that direct sewage pollution was taking place from three outlets of their sewerage system into the river Ivel.

No doubt an inspection of other districts in the vicinity of these rivers would reveal multiple sources of sewage pollution, either direct from sewage outfalls or indirect from sewage farm effluents or contaminated contributory streams.

Drainage, Sewerage, and Disposal of Excrement.

Considerable activity has been displayed by one or two authorities in improving the conditions of drainage and sewerage but much remains to be done.

In one or two of the Reports mention is made of the flushing of sewers and drains, but this does not appear to be generally carried out, although it is a most necessary operation, and if systematically performed there would seldom be any ground for complaints of effluvia from sewer ventilators.

At Ampthill no progress has been made with regard to these important requirements during the year.

A scheme for re-sewering the town is still reported as under consideration.

At Biggleswade the defective condition of the sewerage system attracted the attention of the County Council, and a special Report with regard to this will be found elsewhere. The Medical Officer reports that "it appears possible that immediate steps will be taken to secure this much desired improvement," "and that an improved water supply will follow its train."

At Dunstable the Medical Officer earnestly advises his Council to lose no time in carrying out an adequate system of drainage which he feels sure will in the future be a great and lasting benefit to the inhabitants of the Borough and add materially to its prosperity.

At Kempston the pail privy system generally prevails, the slop and waste water being received into cesspits, many of which are uncemented. A proper system of drainage appears to be an urgent requirement for this district.

At Luton a great deal of work appears to have been carried out during the past eighteen months to improve the sewerage and drainage of the town, and a scheme for the better disposal of storm water will shortly be carried out.

In the Ampthill Rural District the drainage of the villages of Gravenhurst, Shillington, and Westoning has been considerably improved.

In the Eaton Socon Rural District the Medical Officer was instructed to draw the attention of the St. Neots Urban Council to the fact of the St. Neots night soil excreta being brought by their contractor over St. Neots bridge and deposited within the Eaton Socon area, close to the neighbourhood of several houses, whereby at times a great nuisance was created. This has been satisfactorily dealt with and the nuisance has now ceased.

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.

Ampthill 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.

The ultimate disposal of house refuse has been under consideration of one or two local authorities, the Medical Officers of which ask for land on which to treat and dispose of it.

No doubt the best way of dealing with it is by means of heat, and in some towns the combustion of refuse by means of destructors has been utilised for the supply of electric light, the generation of steam, and for other municipal purposes.

The question of electricity and dust destruction is on trial in Shoreditch, where a combined municipal undertaking, consisting of a central electricity station worked by steam supplied from a destructor, capable of destroying all the household refuse of Shoreditch, has been erected upon a common site in the centre of the Borough. Public baths and wash-houses, also heated from the destructor cells, and a public library and museum have likewise been erected, whilst on an adjacent site provision has been made by the London County Council for a recreation ground and technical institute and museum, which will absorb the municipal technical schools of the Shoreditch Vestry.

It may here be mentioned, that in the event of a Sanitary Authority failing to provide a system of public scavenging, the Local Government Board are empowered under section 42 of the Public Health Act, 1875, to require by Order, if they think

fit, any Local Authority themselves to undertake or contract for the removal of house refuse from premises, and the cleansing of earth closets, privies, ashpits, and cesspools.

House Sanitation.

Improvement in the sanitary condition of the dwellings of the working classes can only be attained by a systematic and periodical house to house inspection and the utilisation of those statutory powers which enable a Sanitary Authority to effectually deal with defects of which all districts, Urban and Rural, have examples. Though the difficulty of obtaining a magisterial order for closure or demolition so long as the house is actually in occupation may, however, have something to do with the rarity of prosecutions of this kind.

Sanitary Authorities should be urged to adopt bye-laws with regard to New Streets and Buildings, and to take measures for securing the through ventilation of such houses as are without such provision, owing to lack of back windows or doors. Attention should especially be given to the danger arising from dampness of walls and foundations of houses, due to the absence of proper eave-spouting and down spouts, want of damp-proof courses, or to dilapidated condition of roofing or other structural defects.

Nuisances arising from overcrowding should be dealt with under section 91 of the Public Health Act, 1875. Unwholesome dwellings which can be put into an habitable condition, and only require temporary closure pending alterations, should be proceeded with under this Act.

The reconstruction and improvement of dwellings can be obtained under the Housing of the Working Classes Act, on the representation by the Medical Officer of Health that a house is so dangerous to health as to be unfit for habitation. In cases not actually requiring demolition, the obtainment of a magistrate's order to close often leads to such an improvement in the condition and surroundings of the dwellings as to render them again fit for habitation.

The insanitary conditions in which the inhabitants of some of the poorer and less cared for districts live is occasionally mentioned in the Reports, and here and there efforts have been made to improve them. Attention has been drawn in previous County Reports to some of these conditions, such as confined yards, absence of proper drainage and sewerage, pollution of the soil and atmosphere by privy middens, and the absence of proper systems of surface conservancy.

The Reports of the Medical Officers of Health are unanimous in condemnation of the privy middens and their injurious influence upon the health of localities and the prevalence of enteric fever.

Factories and Workshops.

The periodical inspection of factories and workshops is specially alluded to in three or four of the Reports, and no doubt has been carried out in all the districts.

The sanitary condition of premises where a large proportion of the population have to spend their days is a matter of vital importance, and the beneficial influence of a conscientious and competent inspection of workplaces is very great ; yet this does not appear to have been fully recognised, and the inspection of workplaces is left till favourable opportunity occurs, instead of being systematically carried out.

The responsibility of Sanitary Authorities with regard to them has been very materially increased by the Factory and Workshops Act, 1895, which came into operation on the 1st January, 1896.

It may be mentioned that overcrowding is now defined, a minimum of 250 cubic feet being allotted to each person, which is increased to 400 cubic feet during any period of overtime. It is also required that a notice be kept exhibited in each room stating the number of persons to be employed. These notices are usually supplied on cards and can be hung up in every room.

Bakehouses.

The powers and duties of Sanitary Authorities with regard to bakehouses, and the regulations relating to them are prescribed under the Factory Acts, 1878 and 1883, and some important amendments were introduced by the Factory and Workshops Acts, 1891 and 1895. Sub-section 3 of section 27 of the new Act provides that a place underground shall not be used as a bakehouse, unless it was so used at the commencement of the Act (*i.e.*, 1st January, 1896), and if any place is so used in contravention of the Act, it shall be deemed to be a workshop not kept in conformity with the Act of 1888.

Schools.

Special reference is made to the sanitary condition of schools by the Medical Officers of the Ampthill Urban, Luton, and Eaton Socon Rural Districts, where a systematic inspection of school premises, class rooms and drainage appears to have been undertaken.

Outbreaks of measles necessitating school closure are reported from Slipend, in the Luton Rural District, the Bedford Street and Woburn Street Schools in the Ampthill Urban District, and the Hitchin Road Schools in the Luton Borough District.

School closure for scarlet fever was necessary at Clophill and Shillington in the Ampthill Rural District, and in the Leighton Buzzard Urban District.

There is no doubt that schools play a most important part in the dissemination of scarlet fever, diphtheria, measles and whooping cough, and that their closure, if generally enforced throughout an infected district, is followed by a remarkable reduction in the prevalence of these diseases when epidemic.

In large towns, with many elementary schools, the fall in the notification of infectious disorders, which occurs so frequently during the month of August, is recognised as generally due to the universal closure of schools for the summer vacation.

The Medical Officer for Eaton Socon Rural District regrets that Local Authorities have no power to close other schools, and alludes to the prevalence of respiratory diseases and rheumatic ailments among children who are compelled to attend schools a long distance from home during wet seasons. He goes on to say :—

“ The conclusion is irresistible that, under such circumstances as I have related, infinite harm is done to the health of young children, and surely a child sitting down to school thoroughly cold and wet through is scarcely in a fit condition to receive mental tuition. It may be the law, but it must be possible that some modification in the regulations can be made, so that it need not be necessary for a parent to be under compulsion to run the risk of injuring his child's health in order to obey a legal mandate that, to say the least of it, is frequently injurious in its action. On enquiry at various schools, I find that in one or two instances the master or mistress makes a note of the days that are pouring wet, and the parents of children who do not attend on these days, and who at the same time live at long distances from the school, are not always prosecuted, but I fear that such instances are few and far between.”

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 I can ascertain, proper regulations are only in force in the Borough of Luton, Kempston Urban District, and the Eaton Socon Rural District.

It is to be hoped that those authorities who have not yet adopted the Dairies, Cowsheds, and Milkshops Order will shortly recognise the great danger to the public health which the present order of things involves.

It is well known that milk is capable of acting as a vehicle for certain infectious diseases, and also may be in itself infective. This is particularly the case in tuberculosis and diphtheria, in which it has been demonstrated that milk derived from animals so affected is capable of producing the disease in human beings. It is of the utmost importance, therefore, that the milk of tuberculous cows should not be consumed, and although such may be

rendered innocuous by boiling or high sterilization, yet it must be remembered that the prolonged use of boiled milk as the sole article of diet is liable to produce scurvy, unless especial means are taken to prevent it. No such liability, however, exists in milk sterilized for 15 minutes at the temperature of 185° F.

The detection of tuberculosis in cattle has been rendered comparatively certain by the injection of tuberculin, and it has become the practice in some public institutions to require milk vendors to produce a certificate that their cows have been subjected to the test and proved satisfactory.

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.

At Leighton Buzzard a great nuisance is reported to have been caused by offal boiling on the premises of a butcher. The practice has, however, been prohibited.

The slaughter of cattle within the County is entirely carried on in private slaughter houses, many of which are situated in populous localities, are ill-constructed, and without proper appliances.

Under the Public Health Act, 1875, any Urban Authority may, if they think fit, provide slaughter houses, and they shall make bye-laws with respect to the management and charges for the use of any slaughter houses so provided.

For the purpose of enabling any Urban Authority to regulate slaughter houses within their district, the provisions of the Towns Improvement Clauses Act, 1847, with respect to slaughter houses, shall be incorporated with the Public Health Act.

Slaughter houses in existence before the Local Government Acts were in force have to be registered, and new ones must be licensed, and can be regularly inspected and subjected to bye-laws under the Public Health Amendment Act, 1890, the licences must be renewed every year, and if the occupier of any licensed slaughter house is convicted under Sections 116-119 of the 1875 Act, the licence may be revoked.

It is very necessary that the slaughtering of cattle should be done under skilled supervision. Much of the meat from tuberculous animals can safely be eaten if every particle of tubercle is skilfully removed, and if precautions are taken to avoid the contamination with infective matter of those portions that are safe. These precautions, however, can only be ensured when all slaughtering is done in public abattoirs, under the eye of independent inspectors trained for the purpose.

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 the year 1896.

Article Submitted for Analysis.	No. of Genuine Samples.	No. of Adulterated Samples.	Remarks as to Adulteration.
Arrowroot	5		
Antimonial Wine ...	1		
Beer	1		
Biscuits	1		
Bread... ..	1		
Butter	17		
Carbonate of Soda ...	1		
Cheese... ..	5		
Chocolate Bars ...	1		
Chocolate Cream ...	1		
Citric Acid		1	Contained $\frac{1}{4}\%$ Calcium Sulphate.
Clove Pepper	1		
Cocoa		1	Contained Starchy Farina 30%, Sugar 35%, and Cocoa 35%.
Coffee and Chicory ...	5		
Coffee	7		
Condensed Milk ...	1		
Cornflour	1		
Cream of Tartar ...	2		
Currant Cake	1		
Damson Jam	1		
Flour	3		
Gin	2	1	Contained $1\frac{1}{4}\%$ water.
Ginger... ..	4		
Glycerine	1		
Ground Ginger ...	4		
Ground Mace... ..	2		
Honey	1		
Lard	9		
Margarine	1		
Milk	13	6	Three samples contained from 2 to 3% water beyond the normal. Three samples from 23 to 75% deficient in butter fat.
Mixed Pickles	1		
Mustard	3		
Oatmeal	4		
Pea Flour	1		
Pepper... ..	7		
Plum Jam	1		
Raspberry Jam ...	1		
Sausages (Pork) ...	1		
Sugar	8		
Sweetmeats	8		
Sweet Spirit of Nitre...		1	Deficient in Nitrous Ether. A deteriorated sample.
Tapioca	6		
Tarturic Acid... ..	1		
Tea	8		
Tincture of Rhubarb...	1		
Tinned Peas	1		
Vinegar	2		
Whisky	3		
White Wax		1	Contained 50% Paraffin.

NOTE.—All samples were submitted by the Officer specially appointed to carry out the provisions of the Statute.

There were 3 prosecutions during the year, in all of which the offenders were convicted and fined.

At Luton 57 samples were submitted to the Public Analyst, 49 of milk and 8 of butter.

Eight samples of milk were found to be adulterated, and proceedings were resorted to in 7 instances, the defendants being fined sums varying from 15s. 6d. to £6 8s. 6d. Eleven samples of milk were returned as very poor.

Dr. Sworder, Luton Borough, writes:—

“If the general public were aware of the danger they are exposed to by the dilution of their milk with the water, obtained only too frequently from suspicious sources, they would take more interest in these milk prosecutions, and give the cold shoulder to any milk vendor who has been found guilty of such adulteration. A second consideration possibly more serious, because so far reaching, is that of a gradual starvation of those infants who are allowed a limited quantity of milk per diem; previous dilution of the milk to perhaps the extent of one-third or one-half, not entering into the calculations of the housewife.”

With this exception, 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.

Meteorology.

Meteorology receives attention in the Eaton Socon Rural District.

The rainfall per month is given, and shows that in spite of one of the wettest Autumns ever known the total for the year—18'96 inches—was 2 to 3 inches below the normal amount.

General Sanitation.

No Inspector's Report has been sent in from Ampthill or the Biggleswade Urban Districts, but it is hoped that in future years a tabulated statement of the work of the Sanitary Inspector will be appended to the Report of the Medical Officer of Health of these districts.

No doubt the primary duty of the Sanitary Inspector lies in the abatement of nuisances, but he should also possess an accurate knowledge of the sanitary condition of the streets and houses within his district. This can be acquired only by means of a systematic house to house inspection, by which many serious defects are frequently disclosed, which would otherwise have remained undetected.

Such inspection is best carried out under the direction of the Medical Officer of Health, who has the responsibility of investigating the conditions which affect the health of his district, and

whose decision is necessary before taking legal proceedings. It is therefore essential that the Medical Officer of Health should alone be held responsible for the administration of his department, and should have the control of those who carry out his directions.

This system is in vogue in all the large towns of England and in places where the salary of the Sanitary Inspectors is large enough to allow them to devote their whole time to the duties, but in some of the Rural Districts the office of Inspector of Nuisances is combined with several others quite incompatible with the proper discharge of his duties.

The Medical Officer for the Eaton Socon Rural District alludes to this question in the following words :—

"In large towns and cities the officer appointed is always a competent man with a wide experience of his duties, and his whole time is given up to them. This is all as it should be. What I take exception to, however, is the mode of appointment of Inspectors in Rural and small Urban Districts in which the action of District Councils calls for remonstrance. The salaries of these appointments are small, and never sufficient for a man to live upon, and, as a necessary sequence, they are associated with other appointments in connection with the same district, mostly that of Relieving Officer or Surveyor, possibly also as Vaccination and School Board Officer, thrown in to make up a living.

The duties of these appointments are widely apart, and a man who is conversant with one set of duties is invariably ignorant of the other. Particular care is taken by the Guardians and District Councils that they do not elect anyone as Relieving Officer or Surveyor, unless he produces abundant evidence as to his practical knowledge of the work he proposes to undertake. With regard, however, to the sanitary appointment, a question is hardly ever asked, and it is assumed that if a man can make roads and perform Relieving Officer's work, he is at once fit to undertake the duties of a Sanitary Inspector."

Bye-laws and Special Reports.

It would be of great assistance in comprehending the conditions which prevail in each district if Medical Officers would kindly furnish information in their next Annual Reports with respect to Permissive Acts and Bye-laws in operation in their districts.

A list of these was given in last year's County Reports, and special thanks are due to Dr. Horace Sworder, Dr. Poyntz-Wright and Dr. Fegen, for having kindly furnished information with regard to these.

Special reports have been received from Dr. Fegen with regard to an outbreak of diphtheria at Flitwick during the latter part of December and early part of January last, and the Report of Dr. G. S. Buchanan to the Local Government Board on the prevalence of diphtheria at Hatley Cockayne, in the Biggleswade Rural District, and upon the water supply of the village of Moggerhanger, in the same district, together with the Report of Dr. S. W. Wheaton, on the sanitary condition of Eaton Bray, and upon the administration of the Rural District Council, have been duly received, and have afforded valuable information.

RESOLUTIONS OF THE COUNTY COUNCIL
WITH REGARD TO SANITATION.

PROCEEDINGS of the COUNTY COUNCIL
WITH REGARD TO SANITATION.

PROCEEDINGS OF THE COUNTY COUNCIL
WITH REGARD TO SANITATION.

Bedfordshire County Council.

SANITARY CONDITION OF EATON BRAY.

In November, 1895, the County Medical Officer of Health was instructed to report upon the sanitary condition of Eaton Bray.

This Report, which will be found in the Appendix to the County Medical Officer's of Health Report for 1895, was considered by the General Purposes Committee in January, 1896, and the following recommendations were made to the County Council :—

“ In view of the fact that there have been outbreaks of Enteric Fever (Typhoid), Diphtheria, and Scarlet Fever, it is no matter of surprise that the general zymotic death-rates in this Parish are greatly in excess of those in the rest of the Rural District, or of the County at large, or of the whole of England and Wales. It is evident that to produce such a death-rate, a very great amount of illness must have existed in the Parish. The zymotic death-rate and the prevalence of Typhoid are in themselves suggestive of defective sanitation. The Infectious Disease (Notification) Act is in force in this district, and your Committee recommend that the Council should urge upon the District Council the extreme desirability of instituting prosecutions in all cases of failure to notify. An isolation hospital has been provided for the joint use of the Leighton Buzzard Urban and the Eaton Bray Rural Districts. The annual number of admissions is very small, and it is evident that but few of the cases which arise are removed to the hospital. Your Committee are of opinion that disinfection should be carried out under the personal supervision of the Sanitary Inspector and that sufficient apparatus for public disinfection should be provided. They also recommend that the District Councils should be strongly urged to adopt the Infectious Disease (Prevention) Act, 1890; that immediate steps should be taken by the District Council to procure a wholesome supply of water for the Parish; that they should take steps to abolish privy middens, and that cemented receptacles should be provided excluding surface water, and a system of scavenging adopted; that greater attention should be paid by the District Council to the question of house sanitation, and that Part III. of the Public Health (Amendment) Act, 1890, be adopted; that a Code of Bye-laws based upon the model

series of the Local Government Board should be framed, and that the existing Building Bye-laws should be properly enforced.

"Your Committee are of opinion that the numerous appointments held by the Inspector of Nuisances of this District render it almost impossible for him to effectually supervise the sanitary condition of the district. Your Committee advise that copies of the Report of the County Medical Officer of Health, and of this Report to your Committee, should be forwarded to the Eaton Bray Rural District Council, with a request that the recommendations may receive their speedy attention, and an intimation that a further inspection of their District will be made at a future date."

In the following October enquiry was made from the District Council as to the action, if any, which they had taken in this matter, but no information was obtained.

The County Medical Officer was therefore instructed to make a further inspection of the Parish, and to Report thereon direct to the County Council.

The Report is here reproduced :—

(Council, 6th November, 1896).

109. 96

BEDFORDSHIRE COUNTY COUNCIL.

Report by the County Medical Officer on the Re-inspection of Eaton Bray.

MY LORDS AND GENTLEMEN,

In accordance with your instructions I re-inspected Eaton Bray on October 21, in company with Dr. H. W. A. Sandell, the District Medical Officer of Health.

I was happy to observe that a few of the most insanitary cottages had been closed, and that an attempt had been made to render some dwellings more fit for habitation.

In other respects the sanitary condition of the District remains the same as set forth in my Special Report presented to the County Council in January last, and to which I venture to refer your attention.

That the amount of sickness and the conditions of life prevailing in the District continue as unfavourable as then reported may be gathered from the Report of the Medical Officer of Health for 1895, which shows that out of twelve cases of enteric fever coming to his knowledge, eleven occurred at Eaton Bray, and that the general and zymotic deaths were again excessive.

The general and zymotic death rates for 1895 in the Parish of Eaton Bray, the Eaton Bray Rural District, the Rural Districts of the County, and in England and Wales, are compared in the following table.

Localities.	Estimated Population, 1895.	General Death-rate per 1,000 of the Population.	Zymotic Death-rate per 1,000 of the Population.
Eaton Bray Parish.....	1,330	24·06	6·01
Eaton Bray Rural District.....	3,440	22·08	2·90
Rural Districts, County.....	82,098	16·12	1·01
England and Wales	39,136,218	18·7	2·14

It will be observed that in Eaton Bray these death rates were considerably higher than in 1894.

It appears that beyond the few improvements above mentioned, none of the "sanitary requirements" to which the attention of the District Council was specifically directed, have been carried out.

The water supply remains contaminated, and an analysis of the water of 12 of the wells, made at my request by the Medical Officer of Health, shows that all of them are polluted, more or less seriously.

The nuisances arising from the privy middens and the saturated condition of the yards and ground around so many of the dwellings, continue unabated, and no serious attempt has been made to generally provide a proper system of disposal of excrement and refuse.

In view, therefore, of the conditions that have been revealed, it remains for the County Council to decide whether the time has not arrived when they should make an earnest endeavour to bring about those sanitary reforms which are so urgently required in this Parish, and exercise those powers which have been conferred upon them by Section 299 of the Public Health Act, 1875, and Section 16 of the Local Government Act, 1888.

I have the honour to be,

My Lords and Gentlemen,

Your obedient Servant,

LEONARD WILDE.

31st October, 1896.

This Report was considered by the County Council, and instructions were given for a representation to be made to the

Local Government Board to the effect that the Public Health Act, 1875, had not been properly enforced in the District, particularly with regard to water supply and sewerage.

Eventually, in April, 1897, the District was visited by Dr. S. W. Wheaton on behalf of the Local Government Board, whose Report confirmed that of the County Medical Officer.

The matter therefore now rests with the Local Government Board.

REPORT on the Sanitary Condition of the Biggleswade Urban District by the County Medical Officer of Health.

The inspection of the district was undertaken in the following circumstances:—In 1891, the attention of the Highways and Bridges Committee of the Bedfordshire County Council was called to the fact that owing to the entire absence of any system of sewerage in the Parish of Biggleswade, the Main Road drains were improperly used as sewers for house drainage, and that complaint had been made of the serious nuisance arising therefrom. No action was at that time taken by the Council, as it was thought desirable to wait until the Order for the formation of a Local Board in that Parish had been confirmed when the newly constituted Board would be invested with full powers to enable them to deal with the question. The Order received the confirmation of the Local Government Board in February, 1892. In July, 1892, the County Council drew the attention of the Biggleswade Local Board to the absence of any system of sewerage in their District and to the insanitary conditions which resulted, and requested them to "take steps to have their District effectually drained within the meaning of the Public Health Act, 1875, Section 15." In reply, the Board stated that the question was one which was about to receive the serious attention of the Board. Nothing was however done, and at a Meeting, held on the 1st May last, the Clerk of the Council was instructed to communicate with the Biggleswade Urban District Council and inform them that unless within six months from the date of such communication they adopted a satisfactory scheme for the proper drainage and sewerage of their District, the County Council would cause a Representation to be made to the Local Government Board. This communication was sent on the 19th May, and no information as to the adoption of any scheme having

been received at the time of the Meeting of the Council in November last, I was instructed to make an inspection of the District and report upon its sanitary condition.

The town of Biggleswade is situated in the Ivel Valley, nine miles E. S.E. of Bedford. The soil is chiefly gravel on sand, and the River Ivel intersects the district, receiving several tributaries.

The district covers an area of 4,310 acres, much of which is laid out in market gardens for the supply of the London Markets. It was constituted a separate Urban District in 1892. The population was estimated in 1895, at 4,943. The density varies very considerably, and large tracts of open country separate many groups of dwellings. The main road is well laid, kerbed, and channelled, and the footpaths paved. The town is lit with gas. The rateable value amounts to £31,366, and the assessable value to £15,279.

PREVALENCE OF DISEASE.—Mortality statistics and records of the infectious diseases occurring in the town are available since 1894. In that year there was a remarkable absence of infectious disease, and the various death rates showed no material increase above the average for the Urban Districts in the County. In 1895 measles was epidemic and proved extremely fatal. The twenty deaths registered from this cause raised both the general and zymotic death rates and the infantile mortality considerably above the average.

During the present year, ill defined throat illness has been more than usually prevalent.

The various death rates in Biggleswade and in the Urban Districts of the County are compared in the following Table:—

	Biggleswade.		Urban Districts of the County.	
	1894.	1895.	1894.	1895.
Population estimated to middle of year ...	4,860	4,943	79,750	81,381
Birth rate per 1,000 of population ...	29'4	31'1	27'2	25'9
Corrected general death rate per 1,000 ...	13'2	19'9	14'1	15'4
Zymotic death rate per 1,000 ...	1'8	5'1	1'4	1'5
Death rate from Phthisis ...	1'6	0'61	1'4	1'3
Death rate from respiratory diseases ...	1'02	1'84	—	—
Deaths under one year to 1,000 births ...	126	214	137	161

INFECTIOUS DISEASE PREVENTION.—The Infectious Disease (Notification) Act and the Infectious Disease Prevention Act are both in force.

A well situated joint hospital has been provided for the Biggleswade Urban and Rural Districts. Possibly I saw the hospital under unfavourable circumstances, as the caretaker had

just been changed. There appeared to me to be an absence of that cleanliness, neatness, and comfort in the wards which are essential to the success, and expected from a properly conducted municipal infectious hospital. I was informed that the furniture was taken over from an old small-pox hospital which had been erected during an outbreak in 1871. The bedsteads provided are not adapted to cases of acute illness, and straw mattresses were in use, although I was told that others had been ordered. A proper ambulance has been provided for the conveyance of infectious sick to the hospital, and a separate hot air disinfecting apparatus (Nelson's patent) is available. The excreta are dealt with in earth closets and the slop sinks discharge into a cesspool.

The disinfection of premises after the occurrence of infectious illnesses is undertaken by the District Council. It is carried out by means of sulphurous acid gas. Disinfectants are supplied gratuitously.

An efficient apparatus for the public disinfection of bedding, clothing, &c., by steam has not been provided.

WATER SUPPLY.—There is an abundant supply of water in the district, but it is derived entirely from wells, many of which are situated in back yards surrounded by obvious sources of pollution. Among the chief of these may be mentioned the soakage from the ubiquitous privy midden and the fouling of the soil of unpaved yards by slop water which is thrown anywhere near a surface drain gulley, frequently to be found in close proximity to a well.

The absence of a system of sewerage is responsible for much of the contamination which at present exists, and it is not surprising to learn that samples of water taken from time to time from some of these wells, and analysed by the Medical Officer of Health, were found polluted to a considerable extent.

In his Annual Report for 1892, Dr. Prior drew the attention of the Council to the condition of the water supply, and then asked them to decide whether a pure supply should be obtained from fresh sources or from a distance.

DRAINAGE, SEWERAGE, AND DISPOSAL OF EXCREMENT.—No system of sewerage exists.

The roadside drains which were originally constructed to carry off surface water, now partly fulfil the office of sewers, and in 1894 they were reported by the Medical Officer of Health as choked and almost useless. (Shortmead Street.) It is estimated that about 450 houses discharge slop water into these drains, and that about 50 water closets have been connected with them. They discharge their contents by three outlets directly into the River Ivel.

Privy middens abound throughout the district, and the majority of those I inspected were full. In Anchor yard the floor of the privy was sodden with sewage, which oozed up through the loose boards whenever they were trodden upon. Not a few are situated in confined back premises within a few feet of the dwellings, and render the surrounding atmosphere foetid and unwholesome.

I was given to understand that a scheme of sewerage and sewage disposal would shortly be considered by the District Council. It is proposed to acquire 35 acres of land for "broad irrigation." This would entail sewerage of the town, and a pumping station at the sewage farm. There would be a fall of 1 in 550 feet in the sewerage system and 1 in 600 feet in the outfall conduit. The effluent would find its way into the Sutton Brook and thus into the River Ivel.

It is to be hoped that some efficient drainage scheme will be adopted without delay, inasmuch as most of the insanitary conditions prevailing in the district are due to the absence of any means of excrement disposal. The Reports of the Medical Officer of Health show that he has annually alluded to the necessity for the construction of sewers since 1893.

DISPOSAL OF REFUSE.—House refuse is removed from every house once a week. It is carried out by contract, two men and one cart being employed. It is efficiently performed.

The onus of cleansing and emptying privies is, however, thrown upon the occupier, which may account for their full condition, though the large amount of garden land in the neighbourhood gives ready facilities for disposal. A satisfactory remedy is provided by section 47, sub-section 3, of the Public Health Act, 1875.

POLLUTION OF RIVERS.—The River Ivel is supposed to take its origin near Baldock, in Hertfordshire, but its principal branch rises in the north-western slope of the Chiltern Hills, a little to the north-east of Dunstable. Its flow is north-east, and after a course of 30 miles it unites with the Ouse at the village of Tempsford, seven miles below Biggleswade. It is navigable to the town, and receives numerous tributaries, among which may be mentioned the Sutton Brook.

The surface drains of the town have three outlets into the river, one near the bridge at the bottom of the town, one in Mr. Daniels' grounds at Saint Andrew's, and a third near the Biggleswade Mill.

That the liquid discharged from any of these outlets is crude sewage might be surmised from the fact before mentioned that the slop drains of 450 houses and 50 closets are connected with them. In order that the facts might be more precisely stated, I had samples taken from the mouth of each of these outlets and

submitted to Dr. Stevenson, the County Analyst, for analysis. It appears, however, that when the samples were taken, the river was higher than the drain outlets, and consequently the samples were diluted with river water. The result of his analyses and report thereon are appended, from which it will be seen that crude sewage is being discharged into the river to a very considerable extent, in direct contravention of the Rivers Pollution Prevention Act, 1893, which provides that any Sanitary Authority which permits sewage to be discharged into a stream from sewers under their control shall be guilty of an offence if they allow the pollution to continue.

HOUSE SANITATION.—The style and construction of the houses differ very considerably, the majority are well built and surrounded by ample open spaces.

On the other hand, marked overcrowding on area exists in some parts, notably in the district known as Cow Fair Lands and in certain groups of buildings.

Houses built back to back are met with in Chapel Place, and others unprovided with any opening except in the front are to be found in Well Yard, Cow Fair Lands, Nash's Row, and other places.

A considerable number of cottages have only one bedroom and that is unprovided with a fireplace, overcrowding is therefore difficult to prevent, and a vitiated atmosphere impossible to avoid.

The outdoor premises belonging to most of the houses are ample in size, but in some of the localities mentioned above they are very confined. Very few of the yards are paved, or even properly levelled to provide for ready surface drainage. In wet weather these unlevelled yards become water-logged and sodden, leading to dampness beneath the houses. Further, the unwholesomeness is increased by the careless way in which slop water is disposed of by the inhabitants. The necessity of abolishing, as far as practicable, all sources of surface pollution around dwellings is unquestionable, and needs careful consideration.

PERMISSIVE ACTS AND BYE-LAWS.—The two Acts dealing with infectious diseases have been adopted as before stated.

The Public Health Acts (Amendment) Act, 1890, is also in force, and Regulations have been made under the Dairies, Cowsheds, and Milkshops Orders, 1885 and 1886.

Bye-laws with regard to the Prevention of Nuisances, Common Lodging houses, New Streets and Buildings are in operation.

SANITARY ADMINISTRATION.—The sanitary staff consists of the Medical Officer of Health and one Sanitary Inspector. The Highways and Buildings are under the control of the Surveyor.

The Council have been fortunate in securing the services of Dr. Prior as Medical Officer of Health and he is ably seconded by Mr. Miller, the Sanitary Inspector.

Periodical house to house inspections of parts of the District appear to have been duly carried out, and the removal of unwholesome conditions has been attended to as efficiently as the present circumstances and local opinion permit. Some of the private premises as already intimated need to be firmly dealt with.

SANITARY REQUIREMENTS.

1. The provision of a system of sewerage and sewage disposal is most urgently needed. The abolition of privy middens would necessarily follow. Until this is realised, the cleansing and emptying of these filth receptacles should be undertaken by the Council, and systematically attended to.
2. A wholesome water supply.
3. An efficient apparatus for the public disinfection of bedding, clothing, &c.
4. Improvement in the administration and equipment of the Isolation Hospital.
5. Improvement in the house sanitation and surface conservancy of certain groups of dwellings.

In conclusion I have to thank the Clerk of the Biggleswade Council for affording me facilities to inspect the District, and also the Medical Officer of Health and the Sanitary Inspector for kindly supplying me with all the information it was in their power to give, and rendering every assistance.

LEONARD WILDE.

Palace Chambers,
Westminster,
December 4th, 1896.

County Analyst's Analyses of the Liquid taken from the mouth of the Biggleswade Drain Outlets into the River Ivel, November 6th, 1896.

Name and Description of Sample.	Colour.	Odour.	Turbidity.	Reaction.	GRAINS PER GALLON.								
					Total Solids.	Loss on Ignition.	Combined Chlorine.	Equal to Common Salt.	Nitrogen as Nitrates.	Nitrites.	Ammonia.	Albuminoid Ammonia.	Oxygen required to oxidize organic matter
Sample 1.—Taken from the mouth of the drain which discharges into river near the bridge	Yellowish	Strong Sewage	Turbid and contains Sewage Fungus	Slightly Alkaline	41.44	5.04	4.06	6.69	0.05	None.	1.680	0.120	0.495
Sample 2.—Taken from the mouth of the drain in Mr. Daniels' property, St. Andrews.	Blackish	Strong Sewage	Turbid and contains Sewage Fungus	Slightly Alkaline	36.68	3.64	3.22	5.31	0.27	Heavy Traces.	0.965	0.090	0.278
Sample 3.—Taken from the mouth of the drain near the mill.	None	None	Very slightly Turbid	Slightly Alkaline	27.72	1.96	1.26	2.08	0.27	Traces.	0.017	0.015	0.061

REMARKS BY DR. STEVENSON, F.R.C.P., F.I.C.

"I am of opinion that Nos. 1 and 2 are both highly polluted with sewage, and are quite unfit to be discharged into a river without further treatment. They are foul ill-smelling liquids, abounding in sewage fungus and in raw sewage. Nos. 3 contains sewage, but only in relatively small amount. Its admission into a river will, I believe, not be attended with risk of creating a nuisance."

This Report was considered by the General Purposes Committee on the 9th January, 1897, when it was further reported that the Biggleswade Urban District Council had passed a resolution adopting a system of sewerage with pumping station and broad irrigation.

In these circumstances the Committee recommended that the consideration of the Report be postponed for six months, but in the meanwhile a print of the Report be forwarded to the Biggleswade Urban District Council.

The County Medical Officer of Health has recently been informed that tenders have been issued for the construction of the sewerage scheme.

Pollution of the River Hiz at Arlesey.

In July, 1896, the Committee had under their consideration a letter of complaint from Mr. Thos. M. Howson, of Arlesey, relative to the pollution of the River Hiz, at Arlesey.

A Special Sub-Committee was appointed to inquire into the matter and their Report was considered and adopted.

It was recommended that the attention of the Biggleswade Rural District Council be called to the serious condition of Arlesey disclosed in the Report of the Sub-Committee, and that the District Council be urged to take immediate steps to remedy the insanitary condition of the parish.

REPORT of the Sub-Committee appointed to inspect and report as to the alleged pollution of the River Hiz at Arlesey.

The Sub-Committee beg to report that on the 19th May last, they, accompanied by the Clerk of the Council and the County Surveyor, visited Arlesey for the purpose of inquiring into the complaint made by Mr. T. M. Howson to the General Purposes Committee as to the pollution of the River Hiz.

The Sub-Committee were met by Mr. Howson, the Rev. Mr. Scott, Vicar of Arlesey, and Mr. John Ell. The point at which the pollution complained of by Mr. Howson occurs is marked A on the plan which will be submitted by the County Surveyor to the Council. At this point is the outfall of a brook which rises on the west side of the Three Counties Asylum Estate and flows partly as an open stream and partly by means of culverts through the village of Arlesey. The Sub-Committee proceeded in the first place to inspect the outfall of the brook at the point A. The water flowing down the brook was found to be thick

and black and extremely foul, and the bed of the brook contained a deep filthy deposit. The water discharged into the River Hiz at the point A caused a considerable discoloration for many yards from the point of discharge. The smell was extremely offensive, and the Sub-Committee have no doubt whatever but that at this point there is very serious sewage pollution. In order to trace the origin of this pollution the Sub-Committee then proceeded to inspect the brook for the whole of its length up to the source.

From the point A to the point marked B on the plan the brook is an open watercourse, and its condition for the whole of that length is very similar to that described as existing at the outfall. From the point B the watercourse passes by means of a Culvert under the Great Northern Station, the culvert being continued to the point marked C on the plan, near the Lamb Inn, where it again becomes an open watercourse and flows within a few yards of the doors of several cottages.

The Sub-Committee were informed by some occupiers of these cottages that the stench from the brook at this point pervades their cottages, and that the brook had that morning been cleaned out. The smell, however, was still very objectionable.

This is one of the most populous parts of the village of Arlesey, and it is evident that the slop drainage of a great number of the houses in the immediate neighbourhood finds its way into this brook, many of the house drains in fact being actually connected with the brook. Between the points C and D the stream is chiefly open, but small portions of it are culverted. Near the point D a drain enters the watercourse which conveys the overflow from dumb wells which receive the drainage of a large number of houses, the contents of the dumb wells being pumped into the brook three times a week. The same drain also receives the blood and drainage from a slaughter house. The occupier of one of the dwelling houses at the point D complained of the smell of the stream. The Sub-Committee proceeded from this point up the stream to its source at the point marked E on the plan. The stream at this point receives the effluent from the Three Counties Asylum Sewage Farm. On the day in question the effluent was turbid, and in the opinion of the sub-committee extremely unsatisfactory. They also found that water is discharged from the Asylum Gas Works under conditions which after heavy rains must cause it to be carried into the brook.

The Sub-Committee are of opinion that the attention of the Asylum Authorities should be called to this matter, so as to insure that in future the water flowing into the stream from the Asylum Estate shall be of a harmless character.

The Sub-Committee have no hesitation in describing the condition of this stream from the point D to the point A as being

foul in the extreme and a source of serious danger to the inhabitants of the village and the cause of undoubted river pollution. There is no system of drainage of any kind in this, the most thickly populated, part of the village,—indeed there is no system of drainage or sewerage in the village.

In some parts of the village the road-drain is utilized for house drainage, the effluent going direct into the river without any treatment whatever.

The village of Arlesey illustrates in a forcible manner a condition of things which exists and is steadily increasing in many parts of this County. In rural districts, where the essential features of a rural district are maintained,—that is to say, where houses are placed on garden ground of sufficient area to admit of the disposition of excreta and sewage, by means of properly constructed earth closets and cemented sewerage tanks—no difficulties as regards river pollution or water supply need or ought to arise, but in almost all cases where a population is rapidly springing up no such provision is made and no regard is given as to the future. Builders run up houses with a view to obtain the greatest amount of rent from the area under their control, and all the conditions of town life or of urban districts are introduced into rural districts without their corresponding advantages and conveniences. Thus it comes to pass that the drains of the Highway Authority, together with any rivers, brooks, or water courses that may be conveniently placed for this purpose are made to do the duty of sewers.

The Sub-Committee are of opinion that the attention of the Biggleswade Rural District Council should be called to the condition of this village, and to the urgent necessity for steps being taken to remedy the present insanitary condition,

W. FRANCIS HIGGINS, Chairman.

E. E. DYMOND.

H. TRETHEWY.

HERBERT OWEN WILLIAMS.

NOTE.—On 18th March, 1897, an Inspector of the Local Government Board held a local inquiry at Arlesey relative to an application by the Biggleswade Rural District Council for powers to compulsorily acquire lands for the purpose of sewerage, sewage disposal, and water supply.

Infectious Hospital accommodation within the County.

The question of infectious hospital accommodation within the County was under the consideration of the General Purposes Committee on several occasions during the year, and in view of the present inadequacy of Infectious Hospitals in the County, and of the improbability that the question would be dealt with by the several Sanitary Authorities individually, the Committee appointed a special Sub-Committee in October, consisting of Alderman Whitbread and Councillors Lord St. John, Carter, and Higgins, together with the Chairman and Vice-Chairman of the Council, to confer with the County Medical Officer of Health upon the question of the provision of Isolation Hospitals for the County; to prepare schemes for the provision of such accommodation; and to report thereon to a future Committee.

The Report of the County Medical Officer of Health on the existing Isolation Hospitals in the Administrative County is attached.

Report by the County Medical Officer of Health on the Hospital Accommodation within the County.

It should be the aim of every Sanitary Authority to afford Hospital accommodation for all cases of diphtheria, scarlet fever, enteric fever, and small-pox, where isolation cannot be efficiently carried out at home.

The position of the districts with regard to Isolation Hospitals is shown in the appended Table.

It will be observed that only seven Sanitary Authorities have made any attempt to provide Hospital Accommodation. Of these the towns of Bedford, Biggleswade, and Leighton Buzzard appear to be fairly equipped, although Bedford will shortly be obliged to relinquish the Fever Hospital which is attached to the Bedford Infirmary. Luton has provided additional accommodation, but at present it is still somewhat below its requirements.

The Rural Districts of Biggleswade and Eaton Bray have the joint use of the Hospitals in the Biggleswade and Leighton Buzzard Urban Districts, and the Bedford Rural District has hitherto had the privilege of sending cases to the Bedford Fever Hospital under an agreement with the Governors of the Infirmary, but this Hospital will in a short time cease to exist.

The remaining seven Sanitary Authorities have not provided any Infectious Hospitals, although in some the question has recently received a good deal of attention.

It is obvious that the Infectious Hospital Accommodation within the County is inadequate to meet the requirements of an area of nearly 300,000 acres with a population of 166,000.

The number of beds to be provided for a district or combination of districts is generally calculated as one bed per 1,000 of

the population, but much depends upon the special circumstances of the district and the class of population. A poor and crowded district will naturally require more than a scattered rural or a residential district.

According to this ratio the County should possess 166 beds for infectious diseases, whereas the actual number provided is 104, or if we deduct the 24 which are about to be relinquished at the Bedford Infirmary only 80, a deficiency of no less than 86 beds.

One half of the districts in the County have no Isolation Hospital at all.

Separate small-pox accommodation has been reserved at Bedford and Leighton Buzzard, which is also available for the neighbouring Rural Districts.

In several of the existing Hospitals a charge is made for maintenance.

Section 132 of the Public Health Act, 1875, empowers the Local Sanitary Authority to recover the cost of maintenance from the patients. It appears, however, that usually where the patients are very poor this power is not used, and the cost is thrown upon the rates.

No doubt some reasonable charge should be made for patients received into a Hospital from outside the district for which it has been provided, but to exact payment from the inhabitants of the district is a very undesirable procedure, isolation being carried out for the benefit of the community at large rather than for that of the individual.

Where private accommodation is desired, it must of course be paid for, and no rate-supported Hospital under the control of a Municipal Authority is now considered complete without such.

The views of many of the District Medical Officers as to the urgency of providing Hospitals where none exist have been alluded to in my Annual Reports for the last two years, and I refer attention to them as indicating the feeling in the various districts with regard to this important question.

Dr. C. M. Fegen (Amphill Rural) writes:—"Owing to the absence of any Isolation Hospital it has been found utterly impossible to cope with any outbreak of a serious nature (*vide* the recent epidemic of scarlet fever, at Shillington), and I would most strongly urge that steps should be at once taken to remedy this defect."

Dr. Poyntz-Wright, Eaton Socon, writes (1895 Report):—"I do not think that any unprejudiced person can study the above facts without admitting the moral that they so forcibly point. If ever there was an instance in which the paramount importance of an Isolation Hospital was conclusively proved, it is surely this one. Here is an outbreak of eleven cases of small-pox, with two deaths. It is positively certain that the second case who died, contracted the disease from the first case, his wife. It is also

equally certain that he did not contract the disease until some time after his wife was declared to be suffering from it. Had there been an Isolation Hospital of any sort, to which the first case could have been removed upon the day on which the disease was recognized, and her room have been immediately disinfected, there can be no reasonable doubt that her husband, who was perfectly well at the time, and even for days after, would have escaped the disease, and the outbreak would have begun and ended in the one case and that, without loss of life. As it was, I firmly believe that the want of any arrangement for isolation is entirely answerable for the last ten cases which occurred, and for the loss of two lives. This a very serious consideration, too serious by far to be lightly passed over or ignored. It most undoubtedly throws a heavy responsibility upon the shoulders of those in whose hands the matter rests. For nine consecutive years I have, with no uncertain voice, urged the authorities, under whom I serve, to make some arrangement for the isolation of first cases of serious infectious disease, and in the face of the facts that I have just recorded, as touching this outbreak, I once again, more earnestly than ever, ask my District Councils to give the question of an Isolation Hospital their very gravest and most careful attention, not viewing the question alone from a pecuniary standpoint, but as a matter involving the issues of life and death, and as a portion of that great trust which is committed to their hands, viz. :—The health and the welfare of those resident in their districts. It is urged by many that if such a hospital were established it would be a useless expense, and possibly might not be required for years. If so, I say well and good, and all the better that it should not be required. The question at issue, however, does not lie in the fact of the possession of a hospital when it is not required, but in the vital importance of having one on the spot when it is required, and at a moment's notice."

Dr. Morcom, Dunstable, 1895, reported that the proper and efficient treatment of infectious diseases cannot be properly carried out without Notification and Hospital Isolation, and suggested a conjoint hospital scheme for the Boroughs of Luton and Dunstable, and the Luton and Markyate Rural District Councils.

Dr. Prior, Bedford Rural, 1896, writes :—

"For a period of several years we have been in the habit, in the case of patients requiring removal, of availing ourselves either of the Bedford Fever Hospital, which is attached to the Infirmary, or of the Small-pox Hospital, which is the property of the Board of Guardians. The arrangement has not worked thoroughly satisfactorily, but it will shortly be brought to an abrupt conclusion. It is therefore imperative that a site should be selected, and the erection of a new Infectious Diseases Hospital commenced forthwith. The site must be central for the convenience of patients brought from a distance. I have found that the difficulty of moving patients increases with the distance from the

Hospital, and that the consent of parents in the case of children is given with more and more reluctance ; beyond a distance of six miles this difficulty materially increases, and it entails an additional and unpleasant amount of responsibility on the Medical Officer when recommending removal. The site should also be within easy distance of the Town of Bedford, so as to give greater facility for obtaining medical assistance, not only upon ordinary occasions, but also in such emergencies as are sure to occur among this class of cases, many of which no doubt would be of a severe character.

"It would be hard to select a spot where some of the contributing villages would not be nine to ten miles distant, and if the site is not as central as possible, the Hospital would be practically useless to some villages. I know of no parishes where these conditions can be adequately fulfilled unless it be Biddenham, Clapham, Goldington, and perhaps Cardington. Clapham is the most central parish of the District, but it is a little difficult of access from the east and north-east.

"Should this Hospital be designed for the Rural District alone, or should other Districts be included either as joint proprietors or as contributors *pro rata* for patients sent ? The Bedford Rural District at present contains a population of about 19,500, the Kempston Urban District about 4,000, the Bedford Urban 32,000, altogether in round numbers about 55,000. At Biggleswade we have had experience of a hospital designed for a population of some 27,000, and it has been found that there is scarcely enough to keep up a regular staff, and that the fluctuations sure to occur when epidemic disease is about, are apt to tax very seriously the Hospital accommodation as well as the energies of the staff and the other resources of the establishment. Now, in a Hospital of double the size, more and better sub-division could be obtained ; two or even three infectious diseases might be treated at the same time with less trouble and risk, fluctuations would be less severely felt, and a competent staff could be kept up without so much alternate crowding and then enforced vacation for possibly weeks at a time. Again, the multiplication of these sort of places may become of itself a serious evil, and I incline on the whole to the opinion that one well-appointed Hospital for the entire Union and District, including two out-lying Parishes, would be the best solution of the difficulty. I confess, however, that I see little prospect of this being carried out, unless views are altered."

It is undoubtedly the duty of Sanitary Authorities to protect the public from infectious diseases, and powers of compulsory isolation have been conferred upon them. In exercising these powers the interest of the patient must be considered as well as that of the public. It should be remembered that Isolation Hospitals are not in any way charitable institutions. They are maintained by the ratepayers as much for the benefit of the community as for the welfare of the individual. At a General

Hospital a patient seeks admission of his own free will and merely for his own good, but a sufferer from infectious disease, whether ratepayer or not, is removed to an Isolation Hospital for the good of others as well as himself, and has therefore a right to expect that everything shall be done to ensure comfort and lessen the risks of illness.

From both points of view the advantages of Hospital Isolation are very great.

The removal of first cases will prevent or limit an epidemic which might otherwise have been costly. Not only is the mortality in such hospitals lower than that prevailing among patients treated at home, but early removal prevents the spread of infection and enables other members of the family to resume their occupation and avoid the distress incurred by loss of employment. The greater comfort of the patient is moreover assured, as he is not long confined to one room and has the advantage of fresh air and companions during convalescence.

The Public Health Act, 1875, enables Sanitary Authorities to unite for the purpose of establishing Infectious Hospitals, but much more comprehensive powers are given under the Isolation Hospitals Act, 1893, a summary of which has been prepared by the Clerk of the County Council. By taking advantage of this Act, the local outlay for adequate hospital accommodation may be considerably reduced and it may be pointed out that unless a hospital is constituted under this Act, a County Council is not empowered to contribute a capital sum towards the expenses. Thus a hospital constituted under Section 297 of the Public Health Act, 1875, can receive no financial assistance from the County rates.

In submitting a scheme for the consideration of the County Council, and through them of the Authorities concerned, it is not intended to interfere in any way with the discretion of Sanitary Authorities who may prefer to provide for their own areas by different combinations or independently.

It may be stated that the present scheme is presented as a basis for discussion and admits of modification or extension, and it is suggested that a conference of the various Authorities in the County should be convened by the County Council, at which the question can be fully discussed and explained and a comprehensive scheme decided upon.

It is far preferable that two or three fully equipped and specially constructed hospitals 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.

Suggested Scheme.

*At or near
Flitwick.*

A Hospital for Ampthill Urban District, Ampthill Rural District, and Woburn Rural District—25 beds.

Houghton Regis. A Hospital for Dunstable Borough, Luton Rural District, Markyate Rural District, and Eaton Bray Rural District—20 beds.

Oakley. A Hospital for the Bedford Rural District and the Kempston Urban District—24 beds.

The Biggleswade Urban and Rural Districts are provided for, but it is suggested that the existing Hospital should be made available for Eaton Socon Rural District, and that these Authorities be jointly asked to erect a small probationary or emergency block.

If this scheme were carried out, it would only involve the building of three small Hospitals, but it should be remembered that the provision existing at Luton Borough, though generally speaking much superior to anything in other parts of the County, on the showing of their own Sanitary Committee, is inadequate, and that at Bedford will shortly cease to exist.*

With regard to permanent Small-pox hospitals, it must be taken for granted in any scheme that small-pox cases cannot be treated in the same Hospitals or even on the same site as other cases. It is considered that two such Hospitals, each serving a 15 or 20 miles radius, would go far towards meeting the requirements of the County. In the meantime, and until they are provided, arrangements would have to be made, in the event of an outbreak, for providing temporary accommodation, or for sending sufferers to institutions that will take them in, if such institutions can be found, which is often not the case. This, obviously, is an expensive course and has many inconveniences; and therefore the erection of permanent Small-pox Hospitals in the near future is most expedient, and even urgent.

It is not necessary that I should here refer to all the essentials of a properly equipped Hospital, but the necessity for ambulances, disinfecting apparatus, and proper nursing is of supreme importance. Without an ambulance it is impossible to deal effectually with infectious disease. This may be provided under Section 123 of the Public Health Act, 1875, or under the Isolation Hospitals Act, 1893. Under the latter Act arrangements may be made for the training of nurses as attendants on patients suffering from infectious disease either inside or outside the Hospital, a charge being permitted for attendance of such nurses outside the Hospital.

The question arises to what extent the County Council should be asked to grant financial aid towards establishing Isolation Hospitals, or towards the maintenance of such Hospitals when erected.

The expenses to be incurred in respect of any Isolation Hospital are classified under the Isolation Hospital Act as structural, establishment, and patients' expenses.

* If these two Boroughs were in favour of conjoint schemes with neighbouring authorities, larger Hospitals would be proposed, which would decrease the cost of establishment and also of maintenance, and materially increase their efficiency.

“ ‘Structural Expenses’ include the original cost of providing the Hospital, including the purchase (if any) of the site, and the furnishing such Hospital with the necessary appliances and furniture required for the purpose of receiving patients ; also any permanent extension or enlargement of the Hospital, or any alteration or repair of the drainage, and any structural repairs ; but shall not include ordinary repairs, painting, cleaning, or the renewal or keeping in order of the appliances and furniture, or the supply of new appliances or furniture.”

“ All expenses incurred by a County Council in and about the formation of a hospital district, including the costs of any inquiries and the expenses of obtaining land and other preliminary expenses, shall be deemed to be structural expenses.”

“ ‘Establishment Expenses’ mean the cost of keeping the Hospital, its appliances and furniture, in a state requisite for the comfort of the patients, also the salaries of the doctors, nurses, servants, and all other expenses for maintaining the Hospital in a fit state for the reception of patients.”

“ ‘Patients’ Expenses’ mean the cost of conveying, removing, feeding, providing medicines, disinfecting, and all other things required for patients individually, exclusive of structural and establishment expenses.”

The contributions of the various Authorities constituting a hospital district are generally based on the rateable value of the respective districts, though in certain localities both population and other circumstances have also to be considered in apportioning the cost both of construction and of maintenance.

I think it will be conceded that it is very desirable that the County Council should make some contribution to the funds of such Hospitals, otherwise they would secure no direct representation on the Hospital Committees. It is no doubt the desire of the County Council to get these institutions built and established and ready for any emergency. They should therefore bear their share of the structural expenses and leave the question of maintenance for future consideration.

The general principles to be held in view by all authorities who are about to establish Isolation Hospitals for their districts are very concisely set forth and illustrated in the memorandum recently issued by the Local Government Board on the Provision of Isolation Hospital Accommodation by Local Authorities. It should be read by Members of all such Councils.

Palace Chambers,
Westminster,
15th January, 1897

LEONARD WILDE.

HOSPITAL PROVISION IN THE VARIOUS DISTRICTS OF THE ADMINISTRATIVE COUNTY OF BEDFORD.

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

During the year Dr. C. G. Stein resigned the appointment of Medical Officer of Health, and Dr. Wm. J. Taylor was appointed in his stead.

He presents a Report dealing with the whole of the year, although his appointment only dates from the 2nd June. If in his next Annual Report, he would be kind enough to furnish specific information under the following headings, it would be much appreciated, and greatly lessen the difficulties of compilation.

PREVALENCE OF DISEASE.

MEANS OF PREVENTION OF INFECTIOUS DISEASE.

WATER SUPPLY.

SEWERAGE AND SEWAGE DISPOSAL.

REMOVAL OF REFUSE, &c.

POLLUTION OF STREAMS AND WATERCOURSES.

PREMISES REGULATED BY SANITARY AUTHORITIES.

HOUSE SANITATION.

ADOPTION OF PERMISSIVE ACTS AND BYE-LAWS.

GENERAL SANITATION AND ADMINISTRATION.

Prevalence of Disease.—The Notification Act is in force, and 16 cases were notified during the year.

Scarlet Fever	...	...	...	...	3
Enteric Fever	...	...	...	...	8
Puerperal Fever	...	...	...	...	1
Erysipelas	...	...	...	...	4
TOTAL ..					16

A severe epidemic of measles occurred in the autumn, which necessitated the closure of schools in Bedford Street and Woburn Street.

Seven deaths from phthisis were registered.

Infectious Disease Prevention.—As above stated the Notification Act is in force, but no Hospital exists for the isolation of early cases of infectious disease.

The Medical Officer reports that he brought the matter before the notice of the Council in September last, but its consideration was unhappily postponed. He then pointed out the advantages of Isolation Hospitals as a means of preventing the spread of infection from persons who cannot be properly isolated in their own homes.

No mention is made of the method or means of disinfecting premises after the occurrence of infectious illness.

Water Supply.—The provision of a wholesome and adequate water supply still remains in abeyance, but the Council hopes soon to obtain a pure water supply for the town, which is much needed.

Sewerage and Sewage Disposal.—No progress has been made with regard to these important requirements during the year. A scheme for re-sewering the town is reported as under consideration.

During the latter part of the year the Sewage Farm has received special attention with a view to improving the effluent, which the Medical Officer considers has now been improved,

Removal of Refuse.—A system of public scavenging is highly spoken of, and house refuse continues to be removed twice weekly.

Schools.—The sanitary condition of the Bedford Street Schools is alluded to: Moule's dry earth closets have been provided for the girls' and infants' school, and the closets for the boys' schools are connected with the new sewer in Bedford Street. The Woburn Street School continues unconnected with any sewer.

Premises Regulated by Sanitary Authorities.—Two old slaughter houses have been abolished during the year, and one

new one erected. There are now four private slaughter houses, all of which are reported in a satisfactory condition.

The bakehouses and dairies have been regularly inspected and their sanitary condition maintained.

No mention is made of the action taken with regard to factories and workshops.

BOROUGH OF BEDFORD.

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

Area in acres, 2,223.

Estimated population, 32,725.

	1891.	1892.	1893.	1894.	1895.	1896.
Population estimated to middle of year	28,023	28,701	29,562	29,985	31,005	32,725
Birth rate per 1,000 of population ...	25'2	22'3	22'4	24'1	22'4	22'6
Corrected General death rate ...	13'21	15'74	13'29	11'40	13'50	10'4
Zymotic death rate per 1,000 ...	1'2	1'3	1'2	'8	1'6	0'9
Death rate from phthisis ...	'99	'87	1'01	1'0	1'12	0'6
Death rate from respiratory diseases ...	2'2	2'5	2'4	1'4	1'83	1'1
Deaths under one year to 1,000 births	107	135	156	96	150	90'0
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

The statistics of this Borough show a satisfactory record extending over a period of seven years.

The birth rate continues rather low, which Dr. Prior considers is dependent upon the peculiar age constitution of the population, or at least of a large section of it.

The infantile mortality or proportion of deaths under one year to 1,000 births continues very satisfactory.

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 shewn in the following Table:—

DISEASE.	NUMBER OF NOTIFICATIONS	NUMBER REMOVED TO HOSPITAL.	NUMBER OF DEATHS.
Scarlet Fever	100	18	1
Diphtheria... ..	21	3	9
Erysipelas	18	0	0
Enteric Fever	1	0	1

Scarlet Fever of a mild type and low fatality prevailed during the year, a little disquietude being occasioned in July and

August by a rather sudden extension, which was thought to be produced by milk of a certain dealer, but after due enquiry this possible source of infection was negatived.

Premises Regulated by Sanitary Authorities.—Bakehouses, slaughter-houses, common lodging-houses, meat and other markets, have been duly inspected, and their sanitary condition is reported as satisfactory.

General Sanitation.—In the absence of information with regard to matters usually discussed under the headings suggested in my previous Reports, there is nothing in this Report calling for further comment.

Sanitary Inspector's Report for the year 1896 :—

Number of nuisances reported	157
" " discovered and abated on request	123
Cases in which there was no foundation for complaint ...	34
General inspections of premises	1,574
Insufficient water supply	88
Defective sanitary fittings	65
Disinfection of houses	9

BIGGLESWADE (URBAN).

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

Area in acres, 4,310. Estimated population, 4,830.

	1894.	1895.	1896.
Population estimated to middle of year	4,860	4,943	4,830
Birth rate per 1,000 of the population	29.4	31.1	29.0
Corrected general death rate per 1,000	13.2	19.9	15.3
Zymotic death rate per 1,000	1.8	5.1	1.6
Death rate from phthisis	1.6	0.61	2.2
Death rate from respiratory diseases	1.02	1.84	2.2
Deaths under one year to 1,000 births	126	214	136.0
Deaths over 65, percentage of total deaths	—	—	27.0

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

Scarlet fever	23
Diphtheria	20
Enteric Fever	2
Erysipelas	7

52

No grouping of zymotic diseases apparently occurred in the town, and nothing of importance was recorded.

Infectious Disease Prevention.—Only ten cases of scarlet fever were admitted to the Infectious Hospital from Biggleswade during the year.

General Sanitation.—Dr. Prior mentions that the sewerage of Biggleswade has attracted the attention of the County Council, and it appears possible that immediate steps will be taken to secure this much desired improvement, and that an improved water supply may follow in its train.

A special Report on the sanitary condition of Biggleswade, particularly with regard to the sewerage and water supply, will be found on page 48.

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

The mortality rates continue satisfactory. The number of deaths under one year to 1,000 births is only 65·6 per 1,000, whereas no less than 42 per cent. of the total number of deaths occurred in persons over 65 years of age. Should this record continue, it will tend to show that the conditions of life prevailing in the district are favourable to longevity, and that a very high proportion of children pass safely through the most dangerous period of life, the first year.

Prevalence of Disease.—The Infectious Disease (Notification) Act came into force in August last, and eight cases were notified up to the end of the year, viz. :—

Scarlet Fever	...	...	...	...	6
Erysipelas	...	...	...	...	2
					<u>8</u>

The Medical Officer speaks very highly of the working of the Act, and thinks that an extension of scarlet fever in the Borough

was prevented by its adoption. Whooping cough was somewhat prevalent in the beginning of the year, and two deaths were registered from it.

Infectious Disease Prevention.—Now that the early notification of infectious disease 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.

The Medical Officer reports that the want of a disinfecting apparatus is much felt when there is an outbreak of infectious disease, and he hopes that his Council will soon provide one.

Water Supply.—The water supply of the town is now good and efficient, but Dr. Morcom mentions that he would like to see less houses depending on their supply from deep wells.

Sewerage and Disposal of Sewage.—These questions have been constantly before the Council during the past year; the aid of the County Surveyor has been sought, and much has been done to bring this important question to a conclusion. An expensive drainage scheme is certainly not a thing to be lightly undertaken, but the Medical Officer thinks the time has now arrived when something should be done, and earnestly advises his Council to carry out an adequate system of drainage.

Disposal of Refuse.—The scavenging has been carefully attended to during the year, prompt removal being especially aimed at.

The necessity of the Council obtaining a piece of land of their own where refuse could be properly treated is again urged.

Premises Regulated by Sanitary Authorities.—Factories, workshops, slaughter-houses, cow-sheds, and dairies have all been regularly and carefully inspected, and sanitary improvements and alterations, where necessary, have been carried out.

House Sanitation.—The sanitary condition of the houses of the working classes has certainly improved, and there is not much fault to find with them, but a more liberal use of limewash in some is desirable.

Adoption of Permissive Acts and Bye-laws.—Whether the Infectious Disease Prevention Act, 1890, and the Public Health Acts (Amendment) Act, 1890, have been adopted is not specially mentioned, but bye-laws are in course of revision by the Council, and when completed will no doubt be stringently carried out, and conduce to the health and comfort of the inhabitants.

General Sanitation.—The district has been systematically inspected both by the Medical Officer of Health and the Inspector

of Nuisances, and sanitary improvements, where practicable, have been carried out,

The Report of the Inspector of Nuisances shows that a large amount of sanitary work has been done during the year.

Mr. Benjamin George reports that the number of houses in the district is 1,275, of which 864 are supplied from the Public Water Company; the remainder deriving their supply from 174 wells.

Water closets inspected and repaired	...	...	152
Defective drains	..	...	47
Defective traps	...	...	24
Defective sinks	...	...	14
Wells pumped out	...	...	89
Ashbins emptied	...	...	785
Pigs improperly kept	...	...	9
Various nuisances and complaints	...	...	43
Bake-houses inspected	...	...	18
Slaughter-houses do.	...	...	8
Cow-sheds do.	...	...	11
Workshops do.	...	...	28
Lodging-house do.	...	...	1
Number of lodgers received in lodging-house during the year	...	...	5,408

KEMPSTON (URBAN).

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

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

	...	...	1896.
Population estimated to middle of year	...	...	4,000
Birth rate per 1,000 of the population	...	...	31·2
General death rate	...	...	10·5
Zymotic death rate per 1,000	...	...	1·2
Death rate from phthisis	...	...	1·2
Death rate from respiratory diseases	...	...	1·2

This district has only been recently constituted a separate Urban Authority; it previously formed part of the Bedford Rural District. The returns are only available for the last nine months of the year. The various rates have, however, been calculated from these returns as annual rates. They differ somewhat from those presented by the Medical Officer of Health, who has taken the deaths for the nine months, as the annual number, and has made no proportional allowance for the deaths which would have occurred in the first and heaviest quarter of the year.

Prevalence of Disease.—The Infectious Disease (Notification) Act has been adopted, but only two certificates were received namely, one puerperal fever and one diphtheria.

Infectious Disease Prevention.—In order that the Notification Act may be properly carried out, the Medical Officer recommends that accommodation for the prompt isolation of infectious cases be provided as soon as possible, and suggests an arrangement might be made with the Bedford Sanitary Authority.

Disinfectants are supplied gratuitously, and houses in which infectious illness has occurred are fumigated by means of sulphurous and carbolic acids. A proper steam disinfecting apparatus for bedding and clothing, etc., is advocated.

Water Supply.—The water supply of the district is derived from wells sunk at various depths and at various distances from cesspits, and where, in a large number of cases, the intervening sand and gravel had been removed previous to the erection of dwellings, many of them are surrounded by obvious sources of pollution by leakage from uncemented cesspits.

The analysis of the water of a few of the wells is recommended.

Drainage and Disposal of Excrement.—At present no common system of drainage exists. The pail-privy system generally prevails, the slop and waste water being received into cesspits, many of which are uncemented. A proper system of drainage would appear to be an urgent requirement for this district.

Disposal of Refuse.—A system of scavenging has been adopted by the Council, which provides for the weekly emptying of the pails, and the periodical cleansing of the cesspools and ash-pits. Two scavengers are employed, and about 340 closet pails are dealt with each week. Since the system came into force the improvement in the sanitary condition of the district has been marked, but the system has not been sufficiently long in existence to allow of a definite opinion being expressed upon it.

Premises Regulated by Sanitary Authorities.—Slaughter-houses and bake-houses have been systematically inspected, and their sanitary condition maintained. Regulations under the Dairies, Cow-sheds, and Milk-shops Order, 1885, should be adopted.

House Sanitation.—The housing accommodation, generally speaking, does not call for comment. In some localities the dwellings are somewhat damp, due to want of surface drainage. The bedrooms in a number of houses, especially in Bunyan Road, are small and not provided with fire-places.

Adoption of Permissive Acts and Bye-laws.—The Infectious Disease (Notification) Act, and Parts I., II., and III. of the Public Health Amendment Acts, 1890, have been adopted.

With the advice and assistance of the Medical Officer, a series of bye-laws should be framed and submitted to the Local Government Board.

General Sanitation and Administration.—The district is under the daily supervision of the Medical Officer of Health,

who is making every endeavour to bring his district up to a high standard of sanitary efficiency.

Mr. Foster, the Sanitary Inspector, submits the following Report of the work carried out in his department since August, 1896 :—

No proper receptacle to privy	19
Wells requiring cleansing and repairs...	7
Defective cesspools	4
Defective drains	22
Premises in dirty state	3
Spouting required to buildings...	5
Defective ashpits...	3
Sundry requirements, such as new gully tops, &c. ...	12
Disinfectants supplied	1

76

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.
Population estimated to middle of year	6,793	6,754	6,754	6,754	6,754
Birth rate per 1,000 of the population	28.4	27.5	22.3	26.3	25.0
Corrected General death rate per 1,000	18.4	17.4	17.1	14.6	12.1
Zymotic death rate per 1,000 ...	1.3	1.7	3.1	1.3	0.8
Death rate from phthisis	1.3	1.3	3.1	2.8	2.5
Death rate from respiratory diseases ..	5.3	2.9	1.9	2.0	2.8
Deaths under one year to 1,000 births	170.9	198.9	178.8	129.0	88.7
Deaths over 65, percentage of total deaths	—	—	—	—	34.1

Prevalence of Disease.—Scarlet fever was prevalent from time to time, necessitating the closure of the schools. Altogether 28 cases were brought to the knowledge of the Medical Officer of Health as occurring in the town. Three cases of diphtheria were also reported.

Infectious Disease Prevention.—Leighton Buzzard now remains the only Urban District within the County which has failed to adopt the Notification Act, although this procedure has been recommended and asked for annually for some years past.

The town apparently possesses adequate hospital accommodation, both for ordinary infectious disease and for small pox, and it is to be earnestly hoped that notification, the most essential element in the prevention of infectious disease, will now be added to the advantages of hospital isolation.

I am happy to be able to report that the Infectious Hospital has been much more extensively utilised during the year, no less than 14 out of 28 cases of scarlet fever reported, and two out of

the three cases of diphtheria being removed thereto. This compares very favourably with the return presented by the Medical Officer of Health for 1895, which stated that only one case of scarlet fever and two of diphtheria, all of which arose in the workhouse, were removed to the Isolation Hospital.

Dr. Hedges states that the hospital is intended for all classes, and he asks his Council to connect the building with the new water and sewerage works, and also to put a lamp in the yard-way between the fever and small pox hospitals, and that the approach road be repaired and made good, inasmuch as in its present state the patients are much jolted.

The houses and premises in which contagious illness has occurred are disinfected and fumigated by the Inspector. The method and means at the disposal of the Medical Officer for the prevention of infectious illness are not specifically mentioned. A steam disinfecter for bedding and clothing should be provided.

A properly constructed ambulance has been provided, but the place in which it is stationed is alluded to as both inconvenient and otherwise undesirable.

Water Supply.—The new waterworks are now completed, and a constant and plentiful supply available.

Public baths and wash-houses are very ably advocated.

Sewerage and Drainage.—A system of sewage removal has now been completed, and many houses in the town have been connected, and others are being dealt with as expeditiously as possible.

Removal of Refuse.—Whether public scavenging is undertaken by the Council has never been reported by the Medical Officer.

Pollution of Streams and Watercourses. (?)

Premises Regulated by Sanitary Authorities.—The slaughter-houses have been periodically inspected, and written notices served upon their occupiers to abate nuisances.

A nuisance arising from the boiling of offal was reported to the Medical Officer, and a Council order obtained abolishing the nuisance by prohibiting the practice.

The carcase of a heifer intended for use as dogs' meat was seized and found to be extensively diseased. It was accordingly destroyed at once by being burnt at the gasworks.

Thirteen bake-houses were visited.

Lodging-houses were duly inspected during the year, 3,943 males and 1,081 females, making a total of 5,024 persons, stayed in the lodging-houses. This seems a large number, but it is less by 764 than in the previous year 1895. It is certainly a somewhat remarkable total for a town the size of Leighton Buzzard, and adds to the risk of outbreaks of small pox and other air borne maladies which are so frequently conveyed by vagrants.

Whether any regulations have been framed under the Dairies Cowsheds Order, 1885, is not mentioned.

House Sanitation.—Building bye-laws are in force, and during the year plans have been approved by the Council for the erection of 16 dwelling-houses and five shops.

Adoption of Permissive Acts and Bye-laws. (?)

General Sanitation and Administration.—The Medical Officer of Health alludes to the excellent hygienic soil on which the town is built, its sheltered position, and adjacent pine woods, but regrets the dampness of the locality arising from recurring floods. The low lying portions of the town have been flooded twice between January and March of this year. He mentions that this state of things may and ought to be removed, the water should have more chance of getting away; some of the bridges are too low, but the water mills are the greatest hindrances. Most likely these matters will have the attention that they deserve in due course.

The accuracy of his remarks is supported by the somewhat high death rates from phthisis and respiratory diseases prevailing in the town.

Sanitary Inspector's Report for the year ending 31st December, 1896 :—

Building plans approved	...	...	...	21
Number of persons staying in lodging-houses	...	...	...	5,024
Overcrowding of houses	...	...	...	1
Seizure of diseased carcase	...	...	...	1
Inspection of slaughter-houses	...	...	...	11
Do. lodging-houses	...	...	...	3
Do. bake-houses	...	...	...	13
Number of notices served to abate nuisances	...	...	...	22

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.
Population estimated to middle of year	30,300	30,600	31,000	31,300	32,000
Birth rate per 1,000 of population	30.5	31.0	31.7	28.9	29.9
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
Death rate from phthisis	1.1	1.4	1.4	1.3	0.9
Death rate from respiratory diseases	2.5	2.09	2.6	1.7	1.7
Deaths under one year to 1,000 births	145.6	184.0	144.3	137.9	161.8
Deaths over 65, percentage of total deaths	—	—	—	—	24.5

Dr. Sworder presents an excellent Report, in which he shows that the death rate, although above that for the years 1894-5, is slightly below the average for the last five years.

The increase of the death rate was almost entirely caused by an increase of the zymotic death rate and to the large number of deaths from measles.

Prevalence of Disease.—The Infectious Disease Notification Act came into force on February 24th, 1896, and 307 certificates were received during the remainder of the year.

Scarlet Fever	...	...	...	...	...	236
Erysipelas	..	...	...	...	...	35
Typhoid	...	...	...	...	...	16
Diphtheria	...	...	...	...	...	13
Puerperal	...	...	...	...	...	3
Membranous Croup	...	...	...	...	...	2
Continued fever	...	...	...	...	...	1
Variola	...	...	...	...	...	1
						<hr/> 307

MEASLES.—A widespread epidemic of this disease occurred during the year, and it is probable that few susceptible children among the working classes escaped. Thirty-one deaths were registered, which gives a death rate of 0·97 per 1,000, the largest which has been recorded in this district during the past 17 years. The Hitchin Road Schools were closed for several weeks.

SCARLET FEVER was considerably prevalent throughout the year, but was of mild type and of low fatality, only nine deaths being registered.

ENTERIC FEVER.—There was no great incidence of this disease in any one portion of the town during the year. Only 16 cases were notified, 12 of which were removed to the hospital.

DIARRHŒA.—Twenty-seven deaths from diarrhœa occurred in the quarter ending September 30th, all of which, excepting one, were those of children under one year of age. Fourteen deaths were registered in July and the remaining 13 in August, in which month none occurred after the 19th, showing that the epidemic ceased at the onset of the wet weather.

INFLUENZA was endemic, but never at any time assumed epidemic proportions. The cases were of much milder type than previously observed.

PHTHISIS.—Thirty-one deaths were referred to phthisis, giving a rather high death rate of 2·5 per 1,000. The mortality from this disease is, however, declining; the average annual number of deaths for the preceding 18 years being 47·7. According to the Medical Officer the two chief causes of the rather high death rate from phthisis were undoubtedly the nature of the trade and the dampness of the soil. The former could be reduced by the proper application of the sanitary laws relating to factories and workshops, and the latter has been lessened by the money unstintingly spent in the past on the proper disposal of the sewage.

Infectious Disease Prevention.—The early notification of infectious disease has now been secured and proved very advantageous during the year.

The Isolation Hospital at Spittlesea has proved of continued service, 16 cases of scarlet fever, 12 of enteric fever, and one of variola being removed there during the year.

There is now a nurse matron and a staff nurse in charge, who carry on the work in a satisfactory manner.

Telephonic communication with Luton has been recently effected, and has proved of the utmost value.

A large portion of a site has been levelled so that tents or temporary structures can be immediately erected. Closets, lavatories, and cupboards have been added to both pavilions, conducing materially to their usefulness and comfort.

As soon as possible after the notification, infected houses are visited, general directions given, and the sanitary state of the property looked into, and any defects found are remedied with as much despatch as possible. Disinfectants are supplied gratuitously to all who apply for them at the office of the Sanitary Inspector. A proper steam disinfecting apparatus for the thorough disinfection of clothes and bedding is urgently required.

Vaccination.—Dr. Sworder rightly urges his Authority to make some representations to the Guardians to enforce the Vaccination Acts, and remarks that in the event of their refusal, upon them would rest the terrible responsibility for possibly a large mortality, numbers of disfigured or even blinded inhabitants, and a greatly damaged if not ruined trade.

Water Supply.—The small number of wells now remaining has still further decreased, and the Borough is almost entirely dependent upon the very pure and constant supply of the Luton Water Company. The result of two analyses of this water are shown below :—

	Sample A.	Sample B.
Total solids	36'0	36'5
Mineral solids	31'0	31'5
Loss on ignition	5'0	5'0
Chlorine	1'3	1'3
Nitrates	0'55	0'50
Saline ammonia	0'006	0'008
Albumenoid ammonia	0'006	0'006
Hardness	17'0	17'5

Sewerage and Drainage.—An enormous amount of work appears to have been carried out in the Borough during the past 18 months to improve the sewerage and drainage of the town.

A very great deal has been accomplished, and it is stated that a scheme for the better disposal of storm water and sewage is shortly to be carried out at very considerable expense.

Three additional ventilating shafts to the main sewers have been erected in Chapel Street, Queen Street, and Surrey Street, making a total of 37.

Removal of Refuse.—The removal of refuse is under municipal control, and I gather that the Corporation have their own teams. 11,049 loads of ashes and refuse were removed during the year.

The Inspector reports that the cost of collection and disposal of loads, including teams, is about 2s. 1½d. per load.

Owing to the large increase in the number of loads removed and the difficulty experienced with regard to its storage and disposal, the Inspector thinks it will soon be necessary to provide a Destructor for the town's refuse.

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

The bake-houses and slaughter-houses have been visited and found in a satisfactory condition. Not more than half of the slaughter-houses were originally built for the purpose to which they are now put.

The meat and fish markets have been systematically visited both by night and by day, and on no occasion was it necessary to seize any food as being unfit for human consumption.

FACTORIES AND WORKSHOPS.—Considerable attention has been devoted to the factories and workshops during the year, the Inspector reporting that on the whole they were in a fair sanitary condition.

FOODS AND DRUGS ACT.—Fifty-seven samples were submitted to the Public Analyst, namely, 49 of milk and eight of butter. Eight samples of milk were found to be adulterated. Prosecutions were resorted to in seven instances, and the culprits were fined sums varying from 15s. 6d. to £6 8s. 6d., including costs. Eleven samples of milk were returned as very poor.

House Sanitation.—A very large number of defects were discovered, and remedied as the result of the outbreak of enteric fever, and great improvement has taken place in this direction.

Adoption of Permissive Acts and Bye-laws.—The Infectious Disease Notification Act, 1889, and the Infectious Disease Prevention Act, 1890, have been adopted during the year.

Sanitary Requirements.—Most of the sanitary requirements mentioned in last year's Report have been provided, with the exception of a steam disinfecter. This is urgently asked for by the Medical Officer of Health, and is no doubt of vital necessity. The public disinfection of infected houses should be undertaken by the Authority.

Some separate accommodation for small pox is also wanted.

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 ending 31st December,
1896 :—

Defective drains and bell traps	...	...	...	...	467
No constant water supply to W.C.'s	...	...	...	...	262
Drains and closets blocked	...	...	...	...	203
Defective W.C.'s	...	...	...	...	162
Sinks not disconnected	...	...	...	...	42
Workrooms requiring whitewashing	...	...	...	...	32
Offensive smells and accumulations	...	...	...	...	24
Defective ashpits	...	...	...	...	21
No ventilating pipes to drains	...	...	...	...	21
No intercepting traps	...	...	...	...	17
Defective channels and waste pipes to sinks	...	...	...	...	16
Insanitary privies	...	...	...	...	9
Defective ventilating pipes	...	...	...	...	9
No receptacles for ashes	...	...	...	...	8
No separate sanitary accommodation for females	...	...	...	...	7
Insanitary dwellings	...	...	...	...	5
No drains to stables	...	...	...	...	4
Defective ventilation in workrooms	...	...	...	...	3
Overcrowded workrooms	...	...	...	...	3
Defective cesspits	...	...	...	...	2
No dung pits to stables	...	...	...	...	2
No water supply to house	...	...	...	...	1
Other nuisances	...	...	...	...	109

TOTAL 1,429

THE HISTORY OF THE UNITED STATES

OF THE UNITED STATES OF AMERICA

FROM 1776 TO 1876

BY

JOHN P. FLETCHER

OF THE

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RURAL DISTRICTS.

THE END OF THE WORLD

AMPTHILL (RURAL).

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

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

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

The Medical Officer of Health presents a very able Report, and special thanks are due to him for having kindly furnished specific information under the headings requested, and a complete set of statistics relating to his district.

Prevalence of Disease.—The Infectious Disease Notification Act has been in force since March, 1896, and 123 certificates were received during the remainder of the year, viz. :—

Scarlet fever	89
Erysipelas	21
Diphtheria	9
Puerperal fever	1
Typhoid fever	3

123

Scarlet Fever of mild type and causing only three deaths was prevalent throughout the district, but became epidemic at Gravenhurst and Shillington. Its origin is ascribed to recrudescence of a previous outbreak, and its progress was unchecked owing to the absence of any means of complete isolation.

An outbreak at the school house at Clophill occurred in February, and necessitated the closure of the schools.

Measles was epidemic in the autumn at Flitwick and Millbrook, but ran a fairly mild course. The outbreak was an extension of a recent epidemic in the town of Ampthill, and there was an extension from Flitwick to Westoning.

Cancer was responsible for no less than 14 deaths in this District. Some particulars as to the etiology of this disease would be valuable in view of the rate in which it appears to be increasing.

Infectious Disease Prevention.—It would greatly add to the efficiency of the Infectious Disease Notification Act if an Isolation Hospital were provided for the district, and if the Infectious Disease Prevention Act, 1890, were adopted.

For the last two years the Medical Officer has urgently recommended the provision of hospital accommodation, and he attributes the spread of the scarlet fever outbreak at Gravenhurst to the absence of any such building.

Disinfectants are supplied gratuitously, and houses in which infectious disease has occurred are fumigated by the Sanitary Authority.

Every effort is made to secure the co-operation of the School Authorities in getting early information as to outbreaks of infectious illness in the respective villages and schools.

Water Supply.—The water supply of the district was fully detailed in last year's Report, and the Medical Officer now reports that there is a distinct improvement, both in the quality and quantity during the past year, but there is still room for further improvement, which he hopes will be effected at an early date.

Sewerage and Sewage Disposal.—The drainage of the villages of Gravenhurst, Shillington and Westoning has been considerably improved.

House Sanitation.—The general condition of the houses of the working classes is reported as good, and only one case of overcrowding was notified during the year.

Premises Regulated by Sanitary Authorities.—Slaughter-houses have been visited and inspected, and brought into line with modern requirements. The action taken with regard to bakehouses, cowsheds, dairies, &c., is not mentioned in this year's Report.

Adoption of Permissive Acts and Bye-laws.—Only the Notification Act appears to be in force, but the adoption of other permissive acts is highly to be recommended.

General Sanitation and Administration.—The District is under the effective supervision of the Medical Officer of Health and the Sanitary Inspector. All parts have been duly visited, and much useful work appears to be carried out and every effort made to raise the sanitary standard of the District.

Sanitary Inspector's Report :—

Defective Closets	...	...	...	...	33
Defective drains...	...	...	...	...	32
Deficient and defective water supply	...	...	...	...	13
Houses disinfected	...	...	...	...	71
Dwellings in a dilapidated state	...	...	...	...	13
Wells repaired and cleansed	...	...	...	...	4
Ditches cleansed	...	...	...	...	11
Certificates granted for new houses	...	...	...	...	18
Cases of overcrowding	...	...	...	...	1
Accumulations of offensive matters, privy vaults, and dirty premises	...	...	...	...	11

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

The area of this district has again undergone some modification owing to the Urban portion of Kempston having been constituted a separate district since March 31st, 1896. The Medical Officer calculates the present extent at 94,271 acres.

Prevalence of Disease.—The Infectious Diseases Notification Act has been in force since 1890. The number of certificates received during the year was as follows :—

Scarlet fever	...	...	...	84
Diphtheria	...	...	...	11
Membranous croup	...	...	...	2
Enteric fever	...	...	...	1
Puerperal fever	...	...	...	2
Erysipelas	...	...	...	25

125

Scarlet fever was somewhat prevalent at Renhold, and also in the Barford District; it was kept up in Wootton partly in consequence of the repeated refusals of removal of the first cases.

Diphtheria is reported as having been somewhat rife at Clapham.

Infectious Disease Prevention.—With regard to the arrangements for Hospital accommodation for infectious cases, the Medical Officer reports to the following effect:—

“For a period of several years the District Council has been in the habit, in the case of patients requiring removal, of availing themselves of either the Bedford Fever Hospital, which is attached to the Infirmary, or of the Small-pox Hospital, which is the property of the Guardians. The arrangement has not, however, worked satisfactorily, and it will shortly be brought to an abrupt conclusion; the Authorities of the Bedford Infirmary have given notice that no further cases will be received into the Hospital after November 1st. It is therefore imperative that a site should be selected and the erection of a new Infectious Disease Hospital commenced forthwith.”

The Medical Officer further reports that the Rural District Council are considering the matter with energy and promptitude, and he recommends that the site should be within easy distance of the Town of Bedford, so as to give greater facility for obtaining medical assistance, not only upon ordinary occasions, but also in such emergencies as are sure to occur among this class of cases, many of which no doubt would be of severe character.

It would be hard to select a spot where some of the contributing villages would not be nine or ten miles distant, and if the site is not as central as possible, the Hospital would be practically useless to some villages.

Dr. Prior knows of no parishes where these conditions can be adequately fulfilled unless it be, Biddenham, Clapham, Goldington, and perhaps Cardington. Clapham is the most central parish of the district, but it is a little difficult of access from the East and North-east.

A Joint Hospital for the Bedford Urban and Rural District and the Kempston Urban District is recommended, in order that two or three infectious diseases may be treated at the same time with less trouble and risk, and a competent staff maintained.

Water Supply.—Some improvement in the water supply has been effected in some of the villages by digging fresh wells in more suitable localities, at a greater distance from houses and sources of pollution.

The water supply of Wilshamstead has received attention during the year, and the Medical Officer recommends the establishment of two public wells at Wilstead, in localities which he has already pointed out.

Premises Regulated by Sanitary Authorities.—There are no factories and few work rooms in the District. No case of overcrowding has been reported in these establishments, nor has attention been directed to any sanitary defect.

Whether any supervision is exercised over the cowsheds, dairies and milkshops, bakehouses and slaughterhouses, is not specifically stated.

General Sanitation and Administration—Some reference to the method of disposal of excrement and refuse, house sanitation, adoption of permissive Acts and Bye-laws, and method of disinfection, would be very useful for comparative purposes.

Sanitary Inspector's Report for the year 1896:—

Foul privies and foul accumulations	101
Defective privy accommodation	15
Defective drainage	69
Pigsty nuisances... ..	14
Houses dilapidated and unfit for habitation	4
Houses and premises requiring disinfection	16
Other nuisances arising from—No drains, damp foundations, no water supply, foul ditches, and overcrowding	32
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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.
Population estimated to middle of year ...	21,799	20,851	20,824	21,700
Birth rate per 1,000 of the population ...	30.7	28.9	30.4	29.0
Corrected general death rate	15.65	14.1	17.3	15.08
Zymotic death rate per 1,000	1.7	1.05	1.5	1.8
Death rate from phthisis	1.0	1.1	1.3	0.6
Death rate from respiratory diseases	2.7	1.1	2.4	1.8
Deaths under one year to 1,000 births ...	107.0	91.0	153.0	133.0
Deaths over 65, percentage of total deaths	—	—	—	32.0

Prevalence of Disease.—The Notification Act has been in force since 1890, and 218 certificates were received during the year.

Scarlatina	55
Diphtheria	47
Enteric Fever	57
Membranous Croup	1
Erysipelas	58
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The great majority of the scarlet fever cases occurred in Stotfold; there were also cases at Arlesey, Sutton and Morhanger. The Medical Officer attributes much of the prevalence in Stotfold to the persistent refusal of removal for the patients.

Diphtheria.—Only three deaths from diphtheria were registered, a very small proportion of the cases notified. The disease however assumed epidemic proportions at Hatley Cockayne, a little village about two miles to the east of Potton, and was the subject of an enquiry by Dr. G. S. Buchanan, of the Local Government Board.

The whole Parish, 1,175 acres in extent, contains only 20 inhabited houses, the total population being about 80. In this small population 10 notifications of diphtheria were received, and altogether 23 cases of throat illness occurred.

Dr. Prior reports that the invasion of the disease was so sudden that it was impracticable to remove the first patients, and it appears that the Isolation Hospital belonging to the Biggleswade Rural District Council was not at the time available for diphtheria cases, all the beds being reserved for cases of enteric fever, and consequently nearly all the patients were treated at their own homes.

In this small but severe epidemic there was abundant evidence of contagion and transmission from family to family, and from person to person, but the absolutely original case was not discovered.

Enteric Fever.—Six of the cases of enteric fever occurred in various parts of the district, and were unconnected with each other. The remaining 51 cases occurred at Morhanger, Chalton and Blunham. There were 21 removals to hospital and 3 deaths.

Dr. Prior is inclined to attribute the outbreak to direct infection from person to person.

An analysis of the water of several of the wells of Morhanger and Chalton, showed that sewage pollution had taken place, and rendered them unfit for drinking.

Infectious Disease Prevention.—Early notification has been secured and an Isolation Hospital exists, which has been of the greatest service to the Urban and Rural Districts for many years, and was of great utility during 1896.

The number of cases admitted from the two districts, and the number of deaths, are shown in the accompanying Table :—

DISEASE.	NUMBER OF ADMISSIONS.	BIGGLESWADE URBAN.	BIGGLESWADE RURAL.	NUMBER OF DEATHS.
Enteric fever ...	21	0	21	1
Scarlet fever ...	18	10	8	0
Diphtheria ...	4	0	4	0

Water Supply.—A special Report by Dr. G. S. Buchanan on the water supply of Moggerhanger and Chalton has been forwarded to the County Council by the Local Government Board.

The village of Moggerhanger contains some 350 inhabitants, and is situate about $1\frac{1}{2}$ miles to the south-west of Blunham Station.

Chalton, a hamlet of about 90 inhabitants, is situated about three quarters of a mile from Moggerhanger, on the road from the latter village to Blunham Station.

The wells of Moggerhanger, about a dozen in number, are of old construction and dry steined. They are about 20 feet or more in depth, and are fed by surface water, which percolates into them through the layers of glacial drift which overlie the Oxford clay.

Some houses in Chalton obtain water from one or two wells, which in depth and construction correspond with those of Moggerhanger; others obtain water from a pond beside the high road from Blunham to Moggerhanger. Many of these wells are surrounded by obvious sources of pollution, and the analytical report on the water obtained from wells in Bedford Road Yard, Chalton Terrace, from a field-well in Moggerhanger supplying 8 houses, and from a pond at Chalton supplying 13 houses, all showed that the water was grossly contaminated, and quite unfit for drinking.

In considering what remedy it is practicable to apply to the present faulty conditions of water supply in Moggerhanger and Chalton, Dr. Buchanan remarks that it is necessary to inquire whether any source of water, other than wells fed by surface water, can be obtained for these villages. Unfortunately it is not obvious that any such supply can be made available, but it is evident that opportunities of dangerous pollution, such as those arising from waste water of houses and from faultily constructed privy pits and cesspools, can be largely reduced.

A wholesome and adequate water supply is no doubt a very urgent requirement for this district.

Sewerage and Sewage Disposal.

Removal of Refuse, &c.

Pollution of Streams & Watercourses.

Premises Regulated by Sanitary Authorities.

House Sanitation.

Adoption of Permissive Acts and Bye-laws.

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

General Sanitation and Administration.—All parts of the District have been regularly inspected from time to time by the Medical Officer of Health and the Sanitary Inspector, Mr. Miller, and the District is under effective supervision.

A little information with regard to the matters under the headings mentioned above would be much appreciated.

Sanitary Inspector's Report for the year 1896:—

Defective drainage	...	...	...	...	40
Defective water supply...	...	...	...	...	11
Privy nuisances ...	...	...	...	...	20
Pigsty nuisances...	...	...	...	...	15
Foul accumulations	...	...	...	...	62
Dirty and dilapidated houses	...	...	...	...	7
Houses disinfected	...	...	...	...	62
Other nuisances ...	...	...	...	...	10

EATON BRAY (RURAL)

Medical Officer of Health.—H.W.A. SANDELL, M.R.C.S., L.R.C.P.

Area in acres, 8,891.

Census population, 3,440.

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

Dr. Sandell presents some valuable statistics, which will be very useful for comparative purposes, and are therefore given below in full.

Parish.	Population.	Acreage.	Number of Inhabited Houses to each Parish.	Number of Inmates in each House.
EATON BRAY	1,330	2,416	293	5·22
HEATH-AND-REACH	1,090	2,390	249	4·37
STANBRIDGE	402	1,514	100	4·02
EGGINGTON	268	1,372	60	4·46
BILLINGTON	350	1,209	85	4·11
Total	3,440	8,891	787	4·37

The Rates of the Population to the acre—2·58.

Parishes.	Population.	Deaths.	General Death rate per 1,000	Corrected Death rate per 1,000.	Zymotic Deaths.	Rate per 1,000.
EATON BRAY	1,330	16·1	12·78	12·03	2	1·50
HEATH-AND-REACH	1,090	6	5·50	5·50	2	1·83
EGGINGTON	268	4	14·92	14·92	nil.	—
BILLINGTON	350	3	8·60	8·60	nil.	—
STANBRIDGE	402	5	12·43	12·43	nil.	—
Totals, 1896	3,440	34 (1)	10·17	9·88	4	1·16
Totals, 1895	3,440	71 (5)	22·08	20·63	10	2·90

DEATHS—ANALYSIS AS TO AGES, 1896, 1895, 1894.

Age.	Number.	Per cent. 1896.	Per cent. 1895.	Per cent. 1894.
Deaths under 1 year...	4	10·81	22·53	26·56
„ „ 5 years.	1	2·70	2·81	15·62
„ „ 15 „	1	2·70	2·81	3·12
„ „ 25 „	2	5·40	7·04	6·25
„ „ 60 „	10	27·02	30·98	21·87
„ over 60 „	13	35·13	33·80	26·56

EATON BRAY BIRTH RATE, 1896.

Parishes.	Population.	Births.	Birth rate as per 1,000 of Population.	Under 1 year Infant death rate per 1,000 of Registered population
EATON BRAY ..	1,330	37	27.81	27.02
HEATH-AND-REACH	1,090	28	25.68	37.71
EGGINGTON ...	268	6	22.38	166.66
STANBRIDGE ...	402	7	17.41	0.00
BILLINGTON...	350	7	20.00	142.85
Totals, 1896	3,440	85	24.70	47.05
Totals, 1895	3,440	90	26.16	177.77

Up to the time of going to press no Report on this district had reached the County Council.

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.
Population estimated to middle of year ...	3,744	3,708	3,620
Birth rate per 1,000 of the population ...	—	24.54	23.7
Corrected general death rate ...	17.48	20.49	16.2
Zymotic death rate per 1,000 ...	1.3	1.34	0.8
Death rate from phthisis ...	2.4	1.32	0.5
Death rate from respiratory diseases ...	3.4	3.22	3.0
Deaths under one year to 1,000 births ...	—	132.9	58.0
Deaths over 65, percentage of total deaths ...	—	—	46.6

Dr. Poyntz-Wright presents an excellent report, and particular thanks are due to him for having kindly given special details under the headings requested in my last year's Report.

Prevalence of Disease.—The Notification Act has been adopted since 1890, and 120 cases were notified during the year, as follows:—

Measles ...	101
Scarlet fever ...	2
Diphtheria ...	13
Erysipelas ..	3
Puerperal Fever ...	1

120

Measles was epidemic chiefly in the villages of Over Dean and Eaton Socon. An outbreak also occurred at the Workhouse. The epidemic was of mild type, only 1 death having been registered.

Of the 13 cases of diphtheria, 9 occurred at Pertenhall, and the condition of the premises around showed a highly deplorable

state of affairs. Stringent measures were at once taken and the premises put into sanitary repair within a week.

Infectious Disease Prevention.—The advantages of the Notification Act continues to be almost nullified by the absence of any Isolation Hospital, nor has the Medical Officer any means for removal of first cases of infectious disease from the houses. It is impossible for him to express more strongly than he did in his Report for 1895 the absolute necessity for the provision of such a building.

Houses in which infectious disease have occurred are disinfected and disinfectants supplied.

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

Water Supply.—The condition of the water supply has received constant attention. It is impossible however that any water supply can be good which is afforded from shallow wells, badly made, open to surface percolation, and more than frequently situate near to such filth and pollution as arises from drains, cesspools, pigs and farm yard produce.

Drainage and Sewerage.—Every effort has been made to amend the condition of house drainage, and as far as possible to abolish, where practicable, the old foul privy middens by the substitution of earth closets, &c.

In July last the Medical Officer was instructed to draw the attention of the St. Neot's Urban Council to the fact of the St. Neot's night soil excreta being brought by their contractor over St. Neot's bridge, and being deposited within the Eaton Socon area, close to the neighbourhood of several houses, whereby at times a great nuisance was created. This has been satisfactorily dealt with, and the nuisance has now ceased.

Removal of Refuse.—No specific information is afforded with regard to this.

Premises Regulated by Sanitary Authorities.—The dairies, cowsheds, bakehouses and slaughterhouses, have been regularly inspected and their sanitary condition maintained.

House Sanitation.—The condition of the cottage dwellings has received attention. One house at Woodhouse Farm was found to be unfit for habitation, owing to dilapidations which have since been made good.

Adoption of Permissive Acts and Bye-laws.—The Infectious Disease Notification Act, Infectious Disease Prevention Act, and Public Health Acts Amendment Act, are all adopted.

A series of model bye-laws are also in operation.

General Sanitation and Administration.—The District has been frequently inspected by the Medical Officer of Health 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 important hygienic remarks by Dr. Poyntz-Wright are quoted in the first part of my Report.

Sanitary Inspector's Report :—

Number of complaints received during the year	...	...	...	...	...	8
Number of houses, premises, &c., inspected	...	...	...	...	...	43
Number of re-inspections of houses, premises, &c.	...	...	...	...	...	46
Orders issued for sanitary amendments of houses and premises	...	...	...	...	...	6
Houses disinfected after illness of an infectious character...	...	...	...	...	...	3
House drains repaired, cleansed, trapped, &c.	...	...	...	...	...	5
Privies and water closets repaired, &c.	...	...	...	...	...	2
Water supply—wells sunk	...	...	...	...	...	2
cleansed	...	...	...	...	...	7
Dust removal—number of communications received and attended to	...	...	...	...	...	3
Removal of accumulations of dung, stagnant water, animal and other refuse	...	...	...	...	...	6
Bake-houses inspected	...	...	...	...	...	6
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.
Population estimated to middle of year	8,275	8,308
Birth rate per 1,000 of the population	26.5	23.4
Corrected general death rate	13.6	12.5
Zymotic death rate per 1,000	0.8	1.8
Death rate from phthisis	0.84	0.7
Death rate from respiratory diseases	1.81	1.3
Deaths under 1 year to 1,000 births	109.0	117.9
Deaths over 65, percentage of total deaths	—	33.9

The Medical Officer presents an excellent Report, and special thanks are due to him for having given particular information under the headings suggested.

Prevalence of Disease.—The Infectious Disease Notification Act is in force and the number of cases certified during the year was as follows :—

Scarlet Fever	...	...	...	42
Diphtheria	...	...	...	7
Enteric Fever	...	...	...	3
Erysipelas	...	...	...	4

Measles was very prevalent in the Caddington district during the latter months of the year, necessitating the closure of schools at Slip End. Dr. Morcom seems inclined to include measles in the schedule of the Notification Act.

Cases of throat illness of a decidedly infective character were numerous among the scholars attending the Board Schools at Streatley. At this school the tank containing the water supply for drinking and culinary purposes had its overflow pipe communicating directly with the cesspool.

Whooping cough was epidemic at Caddington and Totternhoe.

Scarlet fever was prevalent during the summer and autumn in the Houghton Regis and Luton Rural Districts, but happily without any fatal case arising.

Infectious Disease Prevention.—Early notification is happily secured, but the Medical Officer again calls the attention of his Council to the want of an Isolation Hospital and a proper disinfecting apparatus.

He recommends a joint hospital for the use of the Luton Rural and the neighbouring Sanitary Authorities, and hopes that this important step will not be much longer delayed.

Houses in which infectious disease has occurred are disinfected by the Council's Officers, but a steam disinfector for bedding, clothing, etc., as before said, is much wanted.

Vaccination.—This is still in abeyance in the district, and no effort is made to carry out the provisions of the vaccination laws, a laxity which, as the Medical Officer truly says, must surely have a disastrous effect in the future.

Drainage and Sewage Disposal.—The acquisition of Urban powers for certain parts of the district will ensure great improvement in the future, but taken as a whole, the drainage and sewage disposal are fairly satisfactory, many improvements having been carried out during the year.

Removal of Refuse.—The frequent and regular removal of refuse has always been insisted upon with very good results.

Water Supply.—The water supply of the district generally is good, the public well supply especially, and where cases of contamination have arisen they are generally owing to pollution from surface drainage, while in many of the more rural parts of the district there is still the danger of pollution from middens, privies, and farm-yards, unless the greatest care is exercised.

Premises Regulated by Sanitary Authorities.—Factories, workshops, bake-houses, slaughter-houses, milk-shops, dairies, and cow-sheds have all been regularly inspected, and their sanitary condition maintained.

Messrs. Waterlow & Sons' factory at Houghton maintains its high character for perfect sanitation, although in some of the workshops there is a tendency to overcrowding, and the ventilation in many of them is still far from perfect.

House Sanitation.—The sanitary condition of the houses of the poorer classes shows a gradual improvement year by year. A few cases of overcrowding have been noticed, and a check has been put on the practice as far as circumstances permitted.

Schools.—During the year the schools at Upper Houghton Regis, Streatley, and Slip End have been closed for a period owing to infectious disease. The schools generally are in a satisfactory hygienic condition, but especial attention should be given to the purity of the water supplied to children during school hours, and to the sanitary condition of the outside offices.

Adoption of Permissive Acts and Bye-laws.—The County Medical Officer would be much obliged if Dr. Morcom would kindly state whether any of the permissive acts and bye-laws are in force in his district beyond the Notification Act.

General Sanitation and Administration.—The district is under efficient supervision, and has been regularly and systematically inspected, and much useful work has been carried out under the Inspector of Nuisances. Dr. Morcom alludes with gratification to the satisfactory vital statistics which prevail in his locality.

Sanitary Inspector's Report for the year ending 31st December, 1896:—

Houses (internally) cleansed and purified	...	...	38
Houses disinfected after infectious disease	...	...	18
Removal of ashes, dung, &c.	...	...	8
Emptying closets, dumbwells, clearing out drains, &c.	...	...	33
Water supply	...	...	3
Removal of animals improperly kept	...	...	1
Ashpits, closets, &c. (structural) repaired	...	...	14
Bake-houses, slaughter-houses and cowsheds inspected	...	...	41
Smoke nuisances	...	...	Nil
Legal proceedings	...	...	Nil

WOBURN (RURAL)

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

Area in acres, Census population,

	1892.	1893.	1894.	1895.	1896.
Population estimated to middle of year	9,200	9,230	9,230	9,200	9,200
Birth rate per 1,000 of population	23.3	23.3	24.38	24.45	24.4
Corrected general death rate	17.97	16.36	15.92	18.8	13.9
Zymotic death rate per 1,000	0.9	0.7	0.8	0.21	0.9
Death rate from phthisis	0.8	1.3	0.6	1.19	0.8
Death rate from respiratory diseases	3.2	2.4	3.3	3.15	1.0
Deaths under one year to 1,000 births	111	100	97	151	80.3
Deaths over 65, percentage of total deaths	—	—	—	—	39.0

The vital statistics of this district continue highly satisfactory, and the death rate for 1896 was the lowest yet recorded in the district.

Prevalence of Disease.—Scarlet fever was somewhat prevalent during the entire year, 42 cases coming to the knowledge of the Medical Officer of Health. The disease was of mild type, and there was no death. Aspley Guise was the parish principally affected.

Diphtheria.—Six cases were reported, four of which were fatal. Five deaths from whooping cough were registered, which shows that this disease must have been somewhat rife in the locality.

Infectious Disease Prevention.—The Infectious Disease Notification Act has been in force since July 1st, 1896, and 28 certificates were received up the end of the year.

The Medical Officer congratulates his Council on having adopted this most useful Act, and now hopes that Hospital accommodation will ere long be provided.

Dr. Prior laments the universal neglect of vaccination which now prevails, and points out that under the circumstances the present immunity from small-pox can hardly be expected to continue.

Whether disinfection is undertaken by the Council and disinfectants supplied gratuitously, or what are the method and means at the disposal of the Medical Officer for the prevention of infectious illness, is not specifically mentioned this year.

Water Supply.—The condition of the water supply to which attention was called in 1895 remains much as heretofore, no alteration having taken place in the villages of Hockliffe or Tils-worth. In the former of these more especially it is high time that something should be done.

Disposal of Excrement and Removal of Refuse (?)

Premises regulated by Sanitary Authorities. (?)

House Sanitation (?)

Adoption of Permissive Acts and Bye-laws.—The Infectious Disease Notification Act, Infectious Disease Prevention Act, and Part III. of the Public Health Acts Amendment Act, 1890, were all adopted during the year.

General Sanitation.—All parts of the district have been frequently inspected both by the Medical Officer of Health and the Sanitary Inspector, and complaints immediately attended to.

Sanitary Inspector's Report for the year ended 31st December,
1896 :—

Foul accumulations	...	...	...	...	6
Defective or over-flowing privies	...	...	...	...	30
Slaughter-house nuisance	...	...	...	...	1
Defective water supply	...	...	...	...	2
Dilapidated and overcrowded houses	...	...	...	...	9
Pigsty nuisances	...	...	...	...	5
Defective drainage	...	...	...	...	10
Other nuisances	...	...	...	...	4
					<hr/>
					67

Section 1. The Board of Directors of the Corporation shall have the honor to certify that the following is a true and correct copy of the original of the same as the same appears in the records of the Corporation.

Section 2. The Board of Directors of the Corporation shall have the honor to certify that the following is a true and correct copy of the original of the same as the same appears in the records of the Corporation.

Section 3. The Board of Directors of the Corporation shall have the honor to certify that the following is a true and correct copy of the original of the same as the same appears in the records of the Corporation.

Section 4. The Board of Directors of the Corporation shall have the honor to certify that the following is a true and correct copy of the original of the same as the same appears in the records of the Corporation.

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Section 10. The Board of Directors of the Corporation shall have the honor to certify that the following is a true and correct copy of the original of the same as the same appears in the records of the Corporation.

APPENDIX.

CONTINUED OF BEDFORD

COUNTY OF BEDFORD.

Year ending 31st December, 1896.

TABLE A. (URBAN).

TABLE giving Area, Population, Births and Deaths in each of the Urban Sanitary Districts of the County.

Infectious Diseases (Prevention) Act in force.	Notification Act in force.	Infantile Mortality Deaths under one year per 1,000 Births.	Senior Mortality Deaths over 65, percentage of total Deaths.	Annual Rates per thousand of estimated population.					Total Deaths Registered	Births.	Estimated Population 1896.	No. of Acres to a Person.	Area (Acres).	Medical Officer of Health.	Urban Sanitary Districts. (In Districts marked by an Asterisk the Rates are calculated, after correction for Non-residents.)
				Birth Rate.	Death Rate.	Zymotic Death rate.	Phthisis Death rate.	Respiratory Death rate.							
p	Yes	No		21.3	14.3*	0.8	3.0	2.6	38	49	Census. 2,294	0.7	1,742	William J. Taylor, L.R.C.S., L.R.C.P.	...
p	Yes	Yes		22.6	10.4*	0.9	0.6	1.1	364	741	32,725	0.06	2,223	C. E. Prior, M.D., F.R.C.S.	...
p	Yes	Yes		29.0	15.3*	1.6	2.2	2.2	96	140	4,830	0.8	4,310	C. E. Prior, M.D., F.R.C.S.	BIGGLESWADE *
p	Yes	No		26.0	13.7	0.4	1.0	1.8	68	122	4,960	0.09	453	A. Morcom, L.R.C.S., L.M., &c.	DUNSTABLE
p	Yes	No		31.2	10.5	1.2	1.2	1.2	32	94	4,000	0.3	1,204	George Butters, M.B., C.M.	KEMPSTON †
p	No	Yes		25.0	12.1*	0.8	2.5	2.8	88	169	6,754	0.2	1,700	J. A. Hedges, M.R.C.S., L.S.A.	LEIGHTON BUZZARD *
Yes	Yes	Yes		29.9	16.6	2.5	0.9	1.7	533	958	32,000	—	3,134	Horace Sworder, M.R.C.S., L.R.C.P.	LUTON

† The mortality returns for this recently constituted Urban District are only available for last nine months of the year. The rates have, however, been calculated as annual death rates from these returns.

COUNTY OF BEDFORD. Year ending 31st December, 1896.

TABLE C (RURAL).

TABLE, giving Area, Population, Births and Deaths in each of the Rural Sanitary Districts of the County.

Infectious Diseases (Prevention) Act in force.	Notification Act in force.	Infectious Hospital in force.	RURAL SANITARY DISTRICTS.		Medical Officer of Health.	Area (Acres).	Estimated Population 1896.	No. of Acres to a Person.	Births.	Total Deaths registered.	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.
			1	2							Birth Rate.	Death Rate.	Zymotic Death Rate.	Phthisis Death Rate.	Respiratory Death Rate.		
No	Yes	No	AMPTHILL	...	C. M. Fegen, M.R.C.S., L.R.C.P. Dip. State. Med.	40,332	12,726	3.1	304	164	23.9	12.86	1.1	0.7	0.8	82.2	43.2
?	Yes	†	BEDFORD*	...	C. E. Prior, M.D., F.R.C.S.	94,271	19,500	4.8	518	276	25.3	13.36*	0.4	0.4	1.5	81.0	44.0
?	Yes	Yes	BIGGLESWADE*	...	C. E. Prior, M.D., F.R.C.S.	53,721	21,700	2.4	631	374	29.0	15.08*	1.8	0.6	1.8	133.0	32.0
No	Yes	Yes	EATON BRAY*	...	H. W. A. Sandell, M.R.C.S., L.R.C.P.	8,891	3,440	2.5	85	34	24.7	9.88*	0.5	0.2	1.4	47.0	38.2
Yes	Yes	No	EATON SOCON	...	T. Poyntz-Wright, M.R.C.S., L.S.A.	16,684	3,620	4.4	86	60	23.7	16.2	0.8	0.5	3.0	58.0	46.6
?	Yes	No	LUTON*	...	A. Morcom, L.R.C.S., L.M.	30,966	8,308	3.7	195	106	23.4	12.5*	1.8	0.7	1.3	117.9	33.9
Yes	Yes	No	WOBBURN	...	C. E. Prior, M.D., F.R.C.S.	29,603	9,200	3.2	225	128	24.4	13.9	0.9	0.8	1.0	80.0	39.0

† Not available after November 1.

No.		Date		Description		Amount	
1	1880	Jan 1	to	Balance		100.00	
2	1880	Jan 1	to	Jan 1			
3	1880	Jan 1	to	Jan 1			
4	1880	Jan 1	to	Jan 1			
5	1880	Jan 1	to	Jan 1			
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99	1880	Jan 1	to	Jan 1			
100	1880	Jan 1	to	Jan 1			

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