

[Report of the Medical Officer of Health for Croydon].

Contributors

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With the author's Compts.

*See specially
p.p. 13, 20, 21, 22, 13.17.*

HEALTH REPORT

FOR

1897

OF THE

Croydon Rural District

BY THE

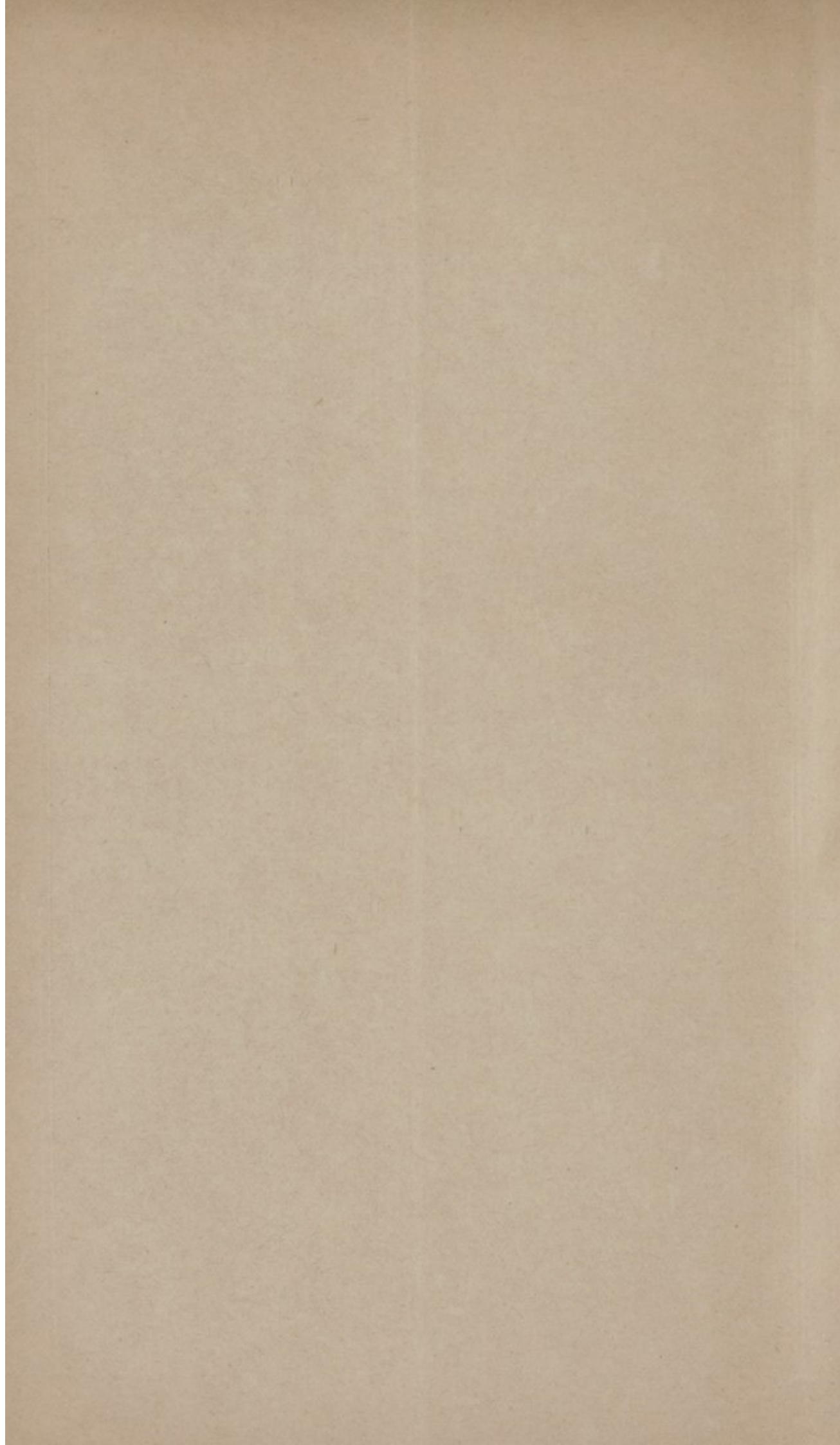
MEDICAL OFFICER OF HEALTH.

Submitted to the Public Health Committee,

February 17th, 1898.

CROYDON:

PRINTED BY ANDRESS & CO., "REVIEW" OFFICE, DERBY ROAD.



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MONTHLY REPORT

1897

REPORT OF THE

COMMISSIONER OF THE

HEALTH REPORT

OF THE

CROYDON RURAL DISTRICT,

1897.

*To the Members of the Croydon Rural District
Council.*

I have the honour to present the Annual Health Report and Statistical Tables for the year 1897, in accordance with the Orders of the Local Government Board.

The general death-rate for the year was very low, namely, 11.6 per 1,000 persons living. There was, however, a considerable prevalence of scarlet fever in parts of the District, and an unusually large mortality from diarrhœa.

The water supply of the District has been specially alluded to in the report, and also some points in connection with the housing of the working classes.

I have the honour to remain,

Your obedient servant,

L. W. DARRA MAIR,

Medical Officer of Health.

February 17th, 1898.

HEALTH REPORT

CROYDON RURAL DISTRICT

1907

To the Members of the Croydon Rural District

Croydon

I have the honor to acknowledge the receipt of your letter of the 10th inst. in relation to the health of the district for the year 1907.

The health of the district for the year 1907 was generally good, and the mortality rate was low. The number of deaths was 12, and the number of births was 108.

The number of cases of smallpox was 1, and the number of cases of measles was 15. The number of cases of scarlet fever was 10, and the number of cases of diphtheria was 5.

I have the honor to be, Sir, your obedient servant.

W. H. BAKER, M.D.
Medical Officer of Health

REPORT.

I.—AREA AND POPULATION.

The District consists of nine Parishes, having an aggregate area of 22,766 acres, extending with a horse-shoe-like contour from Raynes Park in the west to the boundary of Kent, near Wickham, in the east; and from Tooting and Wimbledon in the north to Coulsdon Common, near Caterham, in the south.

Exclusive of public institutions, its population increased from 21,160 at the census of 1881 to 26,233 at that of 1891, and assuming that a similar ratio of increase has been maintained since the latter date, the number of persons may be estimated to have been 30,000 at the middle of 1897, consisting of 14,300 males and 15,700 females.

Although six years have elapsed since the last census, the returns of inhabited houses indicate that this estimate is accurate for the District as a whole, but in the individual parishes there is now great difficulty in judging the population, for the estimates derived from the number of inhabited houses in each case differ more or less considerably from those based on the assumption that the ratios of increase or decrease have remained the same since 1891.

Table I. in the Appendix shows the population of each Parish on which the vital statistics of the year have been calculated, but, for the above reason, the figures cannot pretend to strict accuracy. As a rule, a mean between the two extremes has been taken, so that the birth and death rates may not be represented as too low on the one

hand nor too high on the other. The difficulty has arisen particularly in connection with Beddington, Merton, Mitcham, and Sanderstead. For example, in Mitcham, an estimate based on the inhabited houses would represent the population as 11,872, and one based on the ratio of increase as 12,550. The estimate adopted for the vital statistics is 12,100, although it is quite possible that 12,550 may more nearly represent the exact truth.

NATURAL INCREASE.

The natural increase of the population during the year, that is, the excess of births over deaths, was 474, as compared with 417 and 379 in 1895 and 1896 respectively. It has amounted to 2,936 since the census of 1891.

II.—VITAL STATISTICS.

BIRTHS.

The number of *births* registered in this District during the year was 821, of which 402 were of males and 419 of females. The births of 21 children, $2\frac{1}{2}$ per cent. of the total births, were registered as illegitimate.

The *birth-rate* for the year was 27·4 per 1,000 as compared with an average of 28·2 for the preceding ten years, and 29·7 throughout England and Wales in 1897.

Births in 1897.

Parish.	Registered Births.			Birth-rate per 1000 of population.
	Males.	Females	Total.	
Addington	4	10	14	20·9
Beddington	26	31	57	19·0
Coulsdon	52	57	109	27·3
Merton	49	54	103	27·8
Mitcham	189	200	389	32·1
Morden	17	10	27	31·4
Sanderstead	9	4	13	19·1
Wallington	52	41	93	20·7
Woodmansterne	4	12	16	32·6

DEATHS.

Exclusive of those in public institutions, the deaths registered during the year numbered 316, to which must be added 27 deaths of residents in the District which occurred in institutions in Croydon, and 4 which occurred in the Surrey County Asylum at Brookwood, making a total of 347, of which 186 were deaths of males and 161 those of females.

This mortality corresponds to a *death-rate* of 11·56 per 1,000, as compared with 13·2 in 1896, an average of 12·4 during the preceding ten years, and 17·4 throughout England and Wales during 1897.

Mortality in 1897. *

Parish.	Deaths.			Death-rate per 1,000 of population.
	Males.	Females	Total.	
Addington	5	2	7	10·4
Beddington	17	16	33	11·0 (12·8)†
Coulsdon	15	19	34	8·5 (9·2)†
Merton	24	21	45	12·2
Mitcham	94	76	170	14·0
Morden	5	4	9	10·4
Sanderstead	3	0	3	4·4
Wallington	19	20	39	8·7
Woodmansterne	4	3	7	14·3

* Exclusive of the deaths of non-residents occurring in public institutions in the District, but inclusive of the deaths of residents occurring in public institutions outside the District.

† The figures in brackets represent the rates for Beddington and Coulsdon based on a population excluding the Female Orphan Asylum, Russell Hill School, and Reedham Orphanage.

MORTALITY AT DIFFERENT AGES.

Infantile Mortality.—The number of infants under one year of age who died in 1897 was 80, and the *infantile death-rate*, which is always stated as the proportion of deaths to registered births, was 97 per 1,000 births, as compared with 137 in 1896, an average of 112 during the ten years 1887 to 1896, and 156 for England and Wales during 1897.

In the individual parishes this rate was *nil* in Sanderstead 54 in Coulsdon, 62 in Woodmansterne, 71 in Addington, 78 in Morden, 87 in Merton, 103 in Mitcham, and 140 both in Beddington and Wallington.

The deaths of *children under 5 years of age* numbered 121, or 35 per cent. of the deaths at all ages, and those of persons of *65 years of age and upwards* numbered 92, or 26 per cent. of the total deaths.

CAUSES OF DEATH.

The deaths registered in 1897 included 28 from diarrhœa, 9 from whooping-cough, 5 from measles, 5 from scarlet-fever, 4 from diphtheria, and three from "fever" (typhoid). Thus 54 deaths were attributed to these zymotic diseases, corresponding to a *zymotic death-rate* of 1·80 per 1,000, as compared with 2·01 in 1896, an annual average of 1·72 during the years 1887 to 1896, and 2·15 in England and Wales in 1897.

In the individual parishes, this rate was *nil* in Addington, Sanderstead, and Woodmansterne, 0·54 in Merton, 0·66 in Wallington, 1·15 in Coulsdon, 1·18 in Morden, 2·0 in Beddington, and 3·05 in Mitcham.

The mortality from the various diseases mentioned was below or equal to the annual average, except that from diarrhœa, which was much higher—in fact, nearly double the average. Of the 28 deaths from this disease, 22 were among infants under one year of age, and as many as 20 occurred in the parish of Mitcham, representing a death-rate of 1·5 from this disease alone for that parish, which is very high. The corresponding death-rate from this malady in England and Wales was 0·86, and in the 33 large towns 1·24 per 1,000.

The deaths from *phthisis* or *pulmonary consumption* numbered 33, representing a death-rate of 1·1 per 1,000, as compared with 0·92 in 1896.

The deaths from other *pulmonary diseases* numbered 45, equivalent to a death-rate of 1·5 per 1,000.

To different forms of *violence*, 14 deaths were referred, being in the proportion of 0·46 per 1,000, as compared with 0·62 in England and Wales.

The total deaths registered included 23 cases, or 6·6 per cent., in which *inquests* were held, 12 being due to natural causes, 7 to accident, and 4 to suicide. Five deaths were *uncertified*, 2 being ascribed to failure of the heart's action, and the remainder to chronic rheumatism, tubercular lung, and apoplectic fit.

The following table shows the principal vital statistics for each quarter of the year :—

	Birth-rate.	Death-rate.	Zymotic Death-rate.	Infantile Death-rate.
First Quarter	28·1	12·0	0·93	81
Second Quarter	24·6	12·5	1·86	81
Third Quarter	31·1	11·3	4·26	142
Fourth Quarter	25·6	10·4	0·13	78
The Year	27·4	11·6	1·80	97

DEATHS IN PUBLIC INSTITUTIONS.

The deaths in public institutions numbered 228, of which 172 occurred at Cane Hill Asylum, in Coulsdon, 54 at the Holborn Workhouse, and two at the Holborn Schools, in Mitcham. These deaths included 41 which were ascribed to pulmonary consumption, 28 to other pulmonary diseases, 1 to whooping cough, and 2 to violence. They also included 7 cases in which inquests were held, 1 at Cane Hill being ascribed to asphyxia during an epileptic fit, 1 at Holborn Workhouse to suicide, and the remainder to natural causes.

III.—INFECTIOUS DISEASE.

The Infectious Disease (Notification) Act has been in force in the District since the early part of 1890; in July, 1890, measles was added to the list of notifiable diseases, and in 1894 diarrhœa was made notifiable for a few weeks. The Infectious Disease (Prevention) Act is also in force in the District.

As anticipated in the last annual report, 1897 has been a scarlet fever year, the previous one of marked prevalence having been 1893. Mitcham was specially involved, and 190 cases occurred there, as compared with 122 in 1893. The disease was very mild throughout the District.

Measles was the only other disease which showed undue prevalence, and also occurred specially in Mitcham as a comparatively slight recrudescence of the extensive epidemic of 1896.

The total cost during the year of notifications by medical practitioners was £63 2s.

The detailed history of the behaviour of the more important infectious diseases during the year is as follows:—

Small-pox.—Three cases of small-pox occurred during the year 1897.

The first case occurred in a country house in Woodmansterne Parish, at the end of January, the victim being a young man, 20 years of age, who was in the habit of going daily to an office in London. He first complained of illness on January 21st, the rash made its appearance on the 24th, and he was removed to the Small-pox Hospital, at Highgate, on the 26th, under a private arrangement. On the 25th, every member of the household was vaccinated, except a domestic, who had been re-vaccinated a short time previously. Success attended

these re-vaccinations in every case, except in another lad, in whom it failed, not only then, but also after a second operation on January 30th. This lad provided the second case, the rash making its appearance on February 7th, exactly 14 days after the date of his last contact with the previous patient. He was removed to Hospital on the 7th. Neither of these patients had undergone vaccination since infancy.

The third case occurred at the end of March, in another part of the District, namely, at Bandon Hill, in the Parish of Beddington. The patient first complained of illness on March 29th, the rash made its appearance on the 31st, and he was safely removed in the Council's ambulance on April 2nd, to the new Small-pox Hospital at South Mimms, Barnet, a distance of about 35 miles. The three remaining members of this household were successfully re-vaccinated on April 1st, neither they nor the patient having been vaccinated since infancy. No further case occurred.

The origin of this case was traced. The patient was employed at a private disinfecting station at Hackbridge, Wallington, and on March 17th he was required to disinfect a quantity of clothing and bedding, which he had removed on that day from a house at Burgh Heath, in a neighbouring Rural District, and which had been used by a patient suffering from small-pox.

"Fever."—This term includes enteric or typhoid, continued, and other forms of ill-defined fever. Thirteen attacks, all of them cases of enteric, were notified during the year, this number being somewhat less than the average, which for the previous 7 years had been 15 annually.

The first case was reported in February in a young girl at a house in Smithambottom, Coulsdon, and its true nature was not ascertained until after death, which occurred at the

Croydon General Hospital, to which institution she had been admitted as suffering from septicæmia. A young girl in Mitcham also contracted enteric fever in February : her home had several sanitary defects, and more than one case of diarrhoeal illness occurred there.

In March two cases of a very doubtful character occurred, one in an adult woman at Beddington Corner, who had suffered from the same disease in 1893, and who died rather suddenly after an illness of 10 days' duration. The first diagnosis was influenza. The other and still more doubtful case occurred at Kenley in a young girl, who was taken ill suddenly on March 1st, speedily became semi-conscious, and, after severe epileptiform convulsions on the 4th, died on the same day in a state of coma with Cheyne-Stokes respiration. In neither of these cases was I successful in obtaining a post-mortem examination.

In May a case at Mitcham and a case at Wallington occurred, neither of which could be definitely accounted for. In June a lad living at Collierswood was attacked, and it seemed possible that a habit of playing in a polluted roadside stream (Graveney Brook) may have caused the illness ; while in July a solitary case occurred in Merton which could not be accounted for.

During September 4 cases were reported, 2 of which were in Mitcham, 1 at Beddington Corner, and 1 in South Beddington. Three of these cases were contracted while the patients were away from home for the summer holiday, and the other probably arose from the patient drinking water from the river Wandle at Beddington Corner, where it is mixed with the effluent of the Croydon sewage farm. The last case reported occurred in December, the patient being a lady living in Wallington, and it is supposed that oysters were the exciting cause.

Puerperal Fever.—Two cases of this disease were reported, one in April at a house in Beddington Corner, the other in December at a cottage near the Mitcham Road, in the Parish of Beddington. The last case was fatal.

Diphtheria (including Membranous Croup).—During the year 35 cases of diphtheria were notified, as compared with 46 in the preceding year, and an annual average of 33 during the previous 7 years. On the whole, it was less prevalent than it has been since 1892 (1895 excepted), and was certainly much more mild in character than it has been for many years, 4 deaths only having been recorded. There is no doubt that more cases are now notified as diphtheria than was the case some years ago; mainly, I think, because bacteriology—the resort to which, in these cases, is encouraged in this District in every way, and is becoming more and more generally used—has shown that the ordinary severe clinical symptoms are not essential to the disease. The notification of these mild or doubtful cases is especially important here, for the District is so close to the vast population of London, where the more or less constant prevalence of this disease may be said to be one of the problems of the day, that it would be too sanguine to look for its complete absence, and one can only hope to keep it under control, and that is only possible if every focus of infection is made known.

The disease showed itself at the beginning of the year at Beddington Corner, 2 cases occurring in continuation of the slight prevalence there at the close of 1896. A solitary case also occurred at Collierswood, in a house where another inmate was simultaneously attacked with scarlet fever. In March, the first of a scattered series of cases occurred in connection with the Village School at Addington, and 2 further cases occurred in 2 houses in Collierswood. The disease also appeared in a house in Wallington. All these cases were extremely mild.

In April, a visitor introduced the disease into another house in Wallington, and a case in another house in the same Parish occurred in May. During these two months 3 very severe cases, two of which were fatal, occurred in 3 houses in Lonesome, Mitcham, and all three were contracted at a school in the adjoining Parish of Streatham. Two further cases occurred in 2 houses in Collierswood in May and June, and an attack in a patient suffering from scarlet fever in Morden was notified. The second case in connection with Addington School was reported in the latter month. In July the third case from this school occurred in a house in Sanderstead Parish, and in September another child was attacked in the same house. In the latter month a solitary case occurred at the Russell Hill School, Purley, an institution, and a lady in Kenley contracted the disease from a sister whom she had been nursing at the seaside.

During October 4 cases occurred in widely separated parts of the district, in houses at Badger's Hole, Addington, in the Sanderstead Road, near Croydon, at South Beddington, and in the High Street, Merton; and in November 2 cases in Mitcham were reported. In the last month of the year 8 cases were notified, 2 in another house in High Street, Merton, and the remainder in 5 houses in Mitcham. Half the children who were attacked in Mitcham during the last two months of the year attended a new school which was opened as recently as May last.

Scarlet Fever.—The forecast made in the previous annual report, that the year 1897 would probably be one of scarlet-fever prevalence in this district, has been, unfortunately, fulfilled, and, if anything, to a greater extent than was anticipated. This disease shows a tendency to recur in populous districts at intervals of from four to five years; and since it had been, comparatively speaking, absent from this district since 1892

and 1893, it was expected that, if it was introduced (an always probable event, owing to our geographical position), it would readily spread, especially in the most densely populated parts.

Of the nine parishes in the district, the disease showed itself more or less in eight, and in all 240 cases occurred in 156 private houses, while 22 occurred in institutions. This number means that about $\cdot 8$ per cent. of the population were attacked, the proportion varying from $\cdot 1$ per cent. in Coulsdon to $1\cdot 6$ in Mitcham.

In the parish of Mitcham, the population of which is over 12,000, there occurred 190 cases in 128 houses. The disease first showed itself in two houses early in January, but nothing of importance occurred until March, during which month seven houses in different parts of the parish were invaded, after which a rapid spread took place, and the prevalence became nearly general. The number of cases increased in April, and the disease assumed epidemic proportions during May and the beginning of June, but after this there was a rapid decline. During August and September the disease subsided almost completely, but October witnessed a fresh increase, which was maintained until the end of the year. The course of events is shown month by month in the table on page 18.

The recrudescence which took place in the autumn and winter months may be attributed to the tendency which scarlet fever possesses in this country of becoming more prevalent at that season, but the epidemic of May and June was at its height at a time when, as a rule, the disease shows a minimum prevalence, and was obviously due to the special cause at work, namely, its comparative absence, especially from this parish, during the preceding five years. Other important factors in the rapid spread which took place were the overcrowding of the population which now exists in parts

of Mitcham, especially in its central part, for which the disease throughout showed a preference, and a coincident outbreak of measles which led to great confusion between the two diseases, patients, in some cases, suffering from both concurrently. Unknown cases, too, must have occurred, and in four families the existence of the disease was found to have been concealed, to the detriment, no doubt, of many others.

Schools at first did not exercise any important influence, but later on it became apparent that they were facilitating the increase of the epidemic, and there was a general closure for a short time.

The type of the disease was on the whole very mild. Five deaths were recorded, a fatality of about $2\frac{1}{2}$ per cent. of the known cases. One of these deaths, however, occurred on the second day of illness, and the diagnosis was extremely doubtful, while two more occurred in two brothers, members of a family which, it is of interest to note, had previously proved itself in more than one branch to be peculiarly liable to a dangerous type of scarlet fever.

As regards the other parishes, there occurred during the first quarter 4 cases in a house in Beddington, 3 in a house at Addington, and solitary cases in Woodmansterne and Merton. During the second quarter 10 cases occurred in 6 houses in Merton, 2 in 2 houses in Morden, 2 in a house at Addington, and solitary cases at Kenley, and at Hooley, Coulsdon.

During the third quarter solitary cases were reported in Kenley, Beddington and Merton, while in the last three months, besides 2 cases in 2 houses at Raynes Park, Merton, and solitary cases at Purley and Woodmansterne, there was a sharp outbreak of 12 cases in 6 houses at Beddington Corner, the disease having been probably conveyed from Mitcham.

The disease also appeared in two institutions. Seven cases occurred early in the year at the Female Orphan Asylum, Beddington, resulting from the premature return of a patient from a convalescent home, and 15 cases occurred towards the end of the year at the Holborn Union Schools in Mitcham.

Measles.—This disease, which was so prevalent in 1896 in 3 Parishes, again made its appearance in 1897. Cases occurred in 6 Parishes, but it was in Mitcham only that there was anything like a marked prevalence. In all, 162 cases were ascertained to have occurred in 99 private houses throughout the year, and there were also 5 cases at the Holborn Schools.

In Mitcham the disease first appeared at the end of March, not long after the first cases of scarlet fever occurred, and during April it extended rather rapidly, and remained prevalent during May, as well as April, but in June there was a rapid decline, and by the end of July the disease had disappeared. There were no more cases until the last two months of the year, when 7 occurred in 5 houses.

Although measles began to prevail almost simultaneously with scarlet fever, it spread much more rapidly, for, whereas the former reached its height in April and the beginning of May, the latter did not do so until May and June, the reason being the greater infectivity of measles. With the exception of the 7 cases at the end of the year, 117 cases of measles occurred in Mitcham in 70 houses, and there were 5 deaths, or a fatality of $4\frac{1}{4}$ per cent. of the ascertained cases. The disease was, therefore, more dangerous than scarlet fever, the fatality from which was $2\frac{1}{2}$ per cent., in 190 cases. But the type of measles was, comparatively speaking, severe, and a large proportion of the sufferers were children under 3 years of age. The fatality in 1896 in the much larger epidemic of 626 cases was considerably less, namely, $1\frac{1}{2}$ per cent.

The incidence of scarlet fever and measles in Mitcham during the various months of 1897 is shown in the following table :—

Scarlet Fever and Measles in Mitcham, 1897.

Four Weeks ending	Ascertained Cases.		Houses Invaded.	
	Scarlet Fever	Measles.	Scarlet Fever	Measles.
Feb. 21	2	—	2	—
March 21	9	1	7	1
April 18	8	33	7	22
May 16	31	55	23	30
June 13	31	19	22	12
July 11	21	8	12	4
Aug. 8	19	1	10	1
Sept. 5	13	—	7	—
Oct. 3	5	—	4	—
Oct. 31	17	—	10	—
Nov. 28	15	2	12	2
Dec. 31	19	5	13	3
Total	190	124	129	75

As regards the other parishes, there occurred during the first quarter 2 cases in a house in Kenley, and solitary cases in Coulsdon village, Purley, and Smithambottom, while during the second quarter there were 6 cases in 4 houses in Merton, and a case in Beddington. During the third quarter 4 cases occurred in a house in Wallington, 2 in a house at Smithambottom, and 2 in a house at Bandon Hill, while during the last quarter of the year there were 6 cases in 4 houses in Wallington, a case at Purley, and 11 in 6 houses in Merton.

Rabies.—In August a lad in Mitcham was bitten in the face by a dog, certified by the County Veterinary Surgeon to be rabid; and in December a woman was bitten on the finger by another dog suffering from the same disease. Both underwent Pasteur's preventive inoculation treatment in Paris, at the Council's expense, and at the close of the year both were in good health.

IV.—PREVENTIVE MEASURES.

The Isolation Hospital, which the Council determined in 1895 to erect at Beddington Corner, is now in course of construction. As described before, there will be 28 beds for scarlet fever, diphtheria, and typhoid fever cases. The total cost of the buildings, including furniture, &c., will be £17,500, and its construction should be completed by the end of 1898.

Progress has been made, too, towards the provision of a hospital for the isolation of small-pox. The Borough of Croydon, the Urban District of Wimbledon, and this District, with an aggregate population of about 180,000, have agreed to combine for this purpose, and an unopposed Local Government Board Enquiry was held in December, as to the proposed Provisional Order required to effect the combination. When the necessary sanction is obtained, a site will have to be selected for the hospital, which, it is proposed, will contain 50 beds.

The arrangement made by this Council in 1896 with the Croydon Corporation, to admit cases of scarlet fever, diphtheria, and typhoid fever from this District into their hospital at Waddon, was continued during 1897, and a somewhat similar understanding exists between the Corporation and Board of Guardians for the accommodation of "pauper" patients.

As a result of these arrangements, 104 scarlet fever patients were admitted from this District under the Council's agreement, and 32 under that of the Guardians, while 3 were removed to hospital as private patients, so that altogether 58 per cent. of the cases notified were isolated in hospital. Besides these, 6 cases of diphtheria and two of typhoid fever were removed under the auspices of the Council, and 2 cases of typhoid fever were removed as pauper and private respectively.

The accommodation for scarlet fever patients was not always available when it was wanted. During May and June its absence was rather critical, for the epidemic in Mitcham was then increasing rapidly, and again in the last month of the year it occurred inconveniently. The cause on both occasions was, it appears, an outbreak of measles in the wards. There have been two or three "return cases," that is, cases where the return home of a child from hospital has been succeeded in a few days by another attack in the same family. These "return cases" may be described as the bane of all scarlet fever hospitals, however well managed, but it is sufficient to say that the proportion here was very low as compared with some other hospitals.

It is, perhaps, unnecessary to add that the accommodation which the Council has secured at this hospital has been, notwithstanding the expense, a source of grateful satisfaction to all, while the patients have never done otherwise than express themselves as delighted with the care and attention bestowed upon them.

The three small-pox patients were also treated in hospital, the first two by private agreement at the Highgate Small-pox Hospital in London, and the other, at the Council's expense, at the recently-arranged hospital at South Mimms, Barnet. In the latter case the patient, who had a severe attack, was safely conveyed a distance of some 35 miles.

The ambulance which the Council purchased in 1895 was used for all cases removed at the Council's expense, and has proved satisfactory and very comfortable. It will be desirable, however, to procure another later on when the hospital is completed.

The routine preventive and precautionary measures described in previous reports have been pursued steadily. These involve visits and revisits to every infected house, and

the giving of advice as to isolation when patients are not removed, and other measures for preventing the spread of disease. The total visits paid by the sanitary officers to infected houses numbered 1,360, of which 935 were in connection with scarlet fever, 157 with measles, 116 with diphtheria, 46 with typhoid, 22 with small-pox, and the remainder in connection with erysipelas, puerperal fever, and infantile diarrhœa.

Enquiries are made as to the origin of every case, various particulars as to milk and water supply, sanitary surroundings, &c., are obtained by the Inspectors and recorded on forms supplied to them; and immediate notice is sent to any Day or Sunday School involved, prohibiting attendance by the children of infected households. In the small-pox cases this prohibition extended to places of work as well for 14 days, the Council paying, in one instance, full compensation for loss of wages.

It was necessary, also, to close certain schools. In Mitcham all Day and Sunday Schools were closed from May 2nd to 16th, on account of measles and scarlet fever, except those at Singlegate, which were closed from May 30th to June 27th. Later on, Killick's Road School, in Mitcham, was closed from December 5th to 19th on account of scarlet fever, and the elementary School at Beddington Corner was closed for the fortnight ending December 6th. The plan of excluding children living in certain streets, apparent centres of infection, was also tried in Mitcham in June, with fairly satisfactory results.

For the first time in this District, proceedings were taken during the year against an individual for wilful exposure of an infected person, and also against three others for failure to notify scarlet fever. A fine of 15s. was imposed in each case. In the latter cases, in which deliberate concealment was

proved, it had been intended to prosecute for the offence of wilful exposure; but it appeared that the public Board School, where the exposure took place, could not be regarded as a "public place" within the meaning of Section 126 of the Public Health Act, 1875. It certainly seems incomprehensible that the most important place where such an offence can be committed should not have been provided for in the Act.

During infectious illnesses disinfectants are supplied free of cost, and upon the receipt of a medical certificate that infection is at an end, the infected room or house is "fumigated" with sulphur dioxide gas, all clothing and bedding is removed for steam disinfection at Croydon (pending the completion of the hospital), and owners are required to strip and whitewash the walls under the supervision of the Inspectors. The disinfection as above described is not, however, carried out after cases of measles and erysipelas, but in the former the occupiers are required to thoroughly cleanse their houses.

After cases of diphtheria, the custom here, since 1894, has been not to sanction the cessation of precautions until bacteriological examination shows the throat to be free from diphtheria bacilli; and, for this administrative purpose, the so-called pseudo-diphtheria bacillus is regarded as infective. The practice of making use of bacteriology to determine whether a case is to be regarded as diphtheritic or not, is also gaining in favour in the District, and will no doubt become very generally used. In regard to another important disease, namely, typhoid fever, it seems possible that Widal's serum test may also prove of great service in rendering diagnosis more exact.

During attacks of the latter disease, strong pails with tight lids are delivered every alternate day at infected houses for the reception of all excreta and other waste

products of the sick room, and these contents are burnt. The method adopted here is to remove the pails to the sewage works, where their contents are mixed in a special receptacle with small cinders and ashes, and burnt in one of the boiler furnaces. It is not a finished method, compared with the special destructors used in some towns, but it answers well in a District such as this, where, fortunately, it is unusual to have many cases at a time.

The total destruction of typhoid dejecta is very important, and has been carried out by this Council for some years now. The most common alternative plan is to use the public sewer by means of the domestic slop-sink or closet, but, as ordinarily carried out, this cannot be regarded as free from danger. Another common method is that of burial, generally in the back garden ; but this also would appear to be not altogether safe, in view of the recent investigations (of great importance in other directions as well) of Dr. Martin and others, which show that the typhoid bacillus can exist for long periods and even multiply in soil contaminated with organic matter, such as is usual, more or less, in the neighbourhood of dwellings.

The importance of these bacteriological investigations, both generally, and especially in relation to matters connected with hygiene and public health, is growing daily. It is easy to foresee that any future increase of knowledge respecting the causation and prevention of disease, the natural destiny, so to speak, of filth, and the extent and limits of its power for evil, will be very largely derived from bacteriology, and that upon its teachings, after full confirmation, will depend more and more the daily practice and administrative action of those engaged in public health work. The necessary facilities for carrying out bacteriological work is, in many places, an integral part now of the sanitary organisation, and this Council are providing such means for this district in the hospital now in course of erection.

V.—WATER SUPPLY.

The disastrous epidemic of typhoid fever at Maidstone, and the lesser ones at other places during the year, have vividly impressed the public mind, and have caused more attention to be given to the circumstances and surroundings of local water supplies than has been the case for years past. No annual health report would be quite complete this year without special reference to this matter, and I think therefore that a general review of the water supplies in this District would be desirable in this report.

With the exception of certain houses in the villages of Coulsdon and Woodmansterne, which are supplied with rain water only, but most of which, owing to the action of the Council, will shortly have access to a public supply, and other houses, here and there, which possess private wells, this district is entirely supplied by three public Companies—a quite exceptional position for a rural district.

The Lambeth Water Company, deriving water from the Thames, supplies Mitcham and Merton, having a population of 16,000. Any questions of deficiency or danger in respect to this supply are necessarily bound up with the huge problem of the water supply of the Metropolis, and a Royal Commission is at present again considering whether some solution cannot be found. The water supplied by the Metropolitan Companies is, too, under the constant observation of an examiner appointed by Government.

The other Companies supplying the district are the Sutton Company and the East Surrey Company, both of which obtain their water from wells in the chalk formation. They supply together about 15,000 persons in this district, the source of the former being situated at Sutton, and the principal one of the latter at Kenley, in the Parish of Coulsdon.

The wells of both Companies are in close proximity to considerable populations, and this renders it necessary to regard them as at least open to some suspicion, all the more so as the water is obtained from strata which are unprotected by an overlaying impervious formation. Sutton is a sewered town, but it is understood that some soak-away cesspools still remain, not far removed from the wells. Other possible dangers which have attracted attention are a cemetery at one of the large Metropolitan Lunatic Asylums at Banstead, and the sewage-disposal works at a large Metropolitan Poor-Law School. The wells, moreover, are of no great depth, and the water is delivered direct to the consumers.

At Kenley, the only means of sewage-disposal is by cesspools, all of which, practically, are of the soak-away type. The population numbers over 1,300, and, of the houses, which are rapidly increasing in number, some 182 are within half-a-mile of the wells, of which 50 are within quarter-of-a-mile. The wells are of considerable depth, and partially protected with impervious linings, while all the water is softened by Clark's process before distribution, which involves mixture with lime-water and prolonged rest in precipitation tanks.

The water in the wells, however, approaches very nearly to the surface level at certain seasons. It is in this neighbourhood that some of the chalk "bournes" show themselves and form temporary water-courses, the largest of them traversing almost the exact spot where the wells are sunk. They all appeared in a marked manner in the spring of 1897, following the excessive rainfall of 1896, and their existence shows how near the surface the water-bearing stratum is, or, in other words, indicates the close relation existing between the cesspools and their contents, and the water of that stratum, which water is pumped out for drinking purposes for a population numbering nearly 48,000 persons.

As further possible dangers, a similar condition of drainage in Caterham and the Caterham Valley, beyond this District, with a population many times that of Kenley, may be pointed to, especially as some authorities think that defined underground channels exist which may directly convey, not only matter from cesspools near at hand, but also subterranean water flowing from Caterham and along the valley, while, to make the danger of more far-reaching importance, this water is said to flow onwards to Croydon, where there are wells supplying some 100,000 people.

Such are the surroundings of these two sources of water-supply. That at Sutton is not within this District, and therefore responsibility does not attach to this Council, but it is satisfactory to know that the conditions there have been materially improved by the sewage scheme. The other dangers are much more problematical, but they have attracted a great deal of attention, and efforts are being made to remove them.

At Kenley the wells are within this District, and the Council have decided to carry out a drainage scheme, in order to abolish the cesspools entirely. The scheme is to make provision for other portions of this District as well as Kenley, but not for Caterham Valley.

It is obvious, however, that this cannot be carried into effect for some time, so that I have asked the Council to endeavour to abolish the soak-away cesspools nearest the Waterworks, and, it may be mentioned, authority was given early in 1898 to make an attempt in this direction in connection with a police-station recently erected at Kenley, where an unsuccessful effort was made to persuade the police authorities to provide an impervious cesspool while the building was being constructed.

The importance of having detailed bacteriological examinations of these waters, carried out periodically, has also been urged, and the Council is endeavouring to secure the co-operation of other Districts involved in the Sutton supply to meet the expense required to obtain the services of an expert in bacteriology. An arrangement has been already made with other authorities interested in the Kenley water, and this has been referred for monthly examination to an eminent chemical expert. The chemical analyses thus arranged for have so far been extremely favourable, and so have been the added bacteriological reports, but the latter are excessively meagre in the information given.

The relative importance of chemical and bacteriological examinations may be put thus:—The former aims at discovering the quantity (usually very minute) of organic matter in the water, because, although this cannot by itself produce epidemic disease, it is sometimes the vehicle of poison which may do so; the latter attempts to discover whether there are present any organisms which can actually produce disease, or, as an alternative, others which are known to exist in the human body or in sewage, and whose presence would indicate that there was no obstacle to the introduction of the more dangerous varieties. The latter is obviously the more exact method, but bacteriology is still young, and much depends on the examiner and his methods. It is at least essential to test large volumes of water at a time, instead of a drop or two, in order that, if only a few of the dangerous organisms are present, the chance of overlooking them may be reduced to a minimum.

VI.—SEWERAGE AND SEWAGE DISPOSAL.

The alterations at the Council's Sewage Works at Merton, whereby chemical precipitation tanks and artificial filters are to be provided, were not completed at the close of the year, although, by the terms of the contract, they should have been finished several months ago.

The low-level sewer in Mitcham, which was extended in 1896, has proved itself to require further extension, and it has also been necessary to provide for a supplementary high-level sewer in the same neighbourhood in order to prevent, on the one hand, pollution of the River Wandle at Phipps' Bridge, and, on the other, regurgitation of sewage into house drains and thence into the houses themselves, such as happened in the early part of the year. The necessary work has now commenced.

As mentioned on page 26, the Council has decided to provide sewers for Kenley, and the scheme, the plans of which Mr. Chart had not quite completed at the close of the year, is to include a system of sewers for Smithambottom, and for that portion of Sanderstead which is nearest to Croydon. The outfall is to be into the sewers of that town in the Brighton Road. No further action has yet been taken with reference to the drainage of Addington, the unsatisfactory nature of which was the subject of a report in 1896.

The sewage farm of the Croydon Corporation at Beddington again attracted attention during the year by reason of the offence to which it gave rise, more especially at Beddington Corner, and also by a proposal to extend the area used for irrigation towards Beddington village.

If the original proposition had been carried out, crude sewage would have been treated on land in close proximity to the bulk of the houses in Beddington village, and also to the main stream of the River Wandle. Ultimately, however, the Corporation agreed to limit the new extension to an area coterminous with an adjoining area which has been irrigated for some years, and also to execute certain works to prevent pollution of the river.

Much attention has lately been directed to the "biological" methods of treating sewage, as employed at Sutton and Exeter. The basis of both methods is to

encourage the growth of micro-organisms in filters constructed of various materials, which have the power of converting ("nitrifying") organic matter into harmless chemical compounds and mineral salts, and the action is so far-reaching that the insoluble organic matter (sludge) is also broken up and changed into soluble compounds. The system at Exeter has, in addition, an arrangement to encourage the growth of other organisms, which can live only in the absence of air, the effect being to hasten the putrefactive processes and to split up and render soluble the bulk of the suspended matters. This arrangement is used as a preliminary to the filters, and is carried out in what is called a "septic" tank—that is, a receptacle to which air is not admitted, and into which the sewage flows in a crude state.

Although both these methods are still undergoing the test of trial under practical conditions, yet they have already been so long under observation that their future prospects seem to be hopeful, and, if success is ultimately ensured, it is probable that they will be largely adopted; for the difficulties entailed in other schemes, by reason of the suspended matters and "sludge," will disappear, especially with the Exeter plan, which has also the additional advantage of being automatic in action, so that the expense of labour is almost abolished.*

VII.—HOUSING OF THE WORKING CLASSES.

A table on page 40 of the last Annual Report sets forth the results of the action taken in respect of certain houses which had been represented to be unfit for habitation, and the following is a summary of the present condition of those which, at the time of that report, had not been dealt with.

* It is now announced that a Royal Commission is to consider these biological methods of sewage purification.

Six houses in Reform Place, Merton, have received further attention, and some new outbuildings have been provided, but the dampness still remains to a great extent. The alterations effected at three houses in Pincott Road, Merton, were more satisfactory, and recently action has been taken to secure the reconstruction of their drainage. Towards the end of the year extensive repairs were commenced at three houses in Western Road, Mitcham, and, although not yet completed, the result will apparently be as satisfactory as it is possible to obtain in wooden buildings. The house near Russell Hill, Purley, has been closed, together with another adjoining, and three cottages at Woodcote Hall, Wallington, not referred to in the table, are also being dealt with.

Besides the above, five additional houses have been represented as unfit for habitation. One is a dwelling near the Upper Green, Mitcham, and the remaining four are a group of cottages on Commonsides East, Mitcham. All of these houses are ancient, and, besides having insufficient accommodation, are very dilapidated. The representations were made in October and November, but nothing had been done at the close of the year.

The summary of the Inspectors' work, given on page 32, shows the work that is being done systematically to improve the condition of dwellings in the District. Particular attention is paid to the paving of back yards, so commonly absent or imperfect, the improvement of sculleries or wash-houses, where the female portion especially of the working classes spend so much of their daily life, and, of course, the sanitary conveniences and drains. But, as I pointed out in my last Annual Report, there seems to be an actual deficiency in the number of dwellings in some parts of the District, the increase in houses not having apparently kept pace with the increase of population.

This is especially the case in Mitcham, so much so that in the last month of the year a movement was inaugurated with a view to secure the adoption of the third part of the Housing of the Working Classes Act, and the Surveyor was requested by the Parochial Committee to report whether there was a need for more houses, and what the probable cost of supplying them out of the rates would be.

The best available statistics appear to point to a considerable deficiency of house accommodation. The ascertained population of Mitcham at the censuses of 1881 and 1891 was 8,407 and 10,758 respectively (excluding public institutions), and the growth which took place during that decennium may be said to have been a normal growth, and at least fully maintained since 1891. The prevailing impression is that the population has, if anything, increased more rapidly of late, but assuming that the ratio of increase has remained the same, the population would have numbered 12,550 at the middle of 1897.*

Now, the average number of persons living in each house at the last census was a fraction over five (5.2), but in 1897 there were only 2,283 inhabited houses in Mitcham, which means accommodation, on a similar basis, for only 11,870 persons. In other words, it would seem as if nearly 700 persons are now living in houses in Mitcham, who, if building operations had kept pace with the needs of the population, would have found accommodation in other houses, or, to put the situation in another way, there appears to be a deficiency of between 130 and 140 dwellings.

Statistics, however, are apt to be misleading, especially when six years have elapsed since a census; but, in this matter, individual experiences confirm the above conclusion, for complaint is universal that houses are very difficult to

* This would be the Registrar-General's estimate of the population.

obtain. A very striking example of this occurred in December, in a house which had been condemned, and which was undergoing alteration to such an extent that it was practically dismantled and without sanitary appliances; but nevertheless, the occupying family could not obtain accommodation elsewhere for some weeks, and were obliged to remain and inhabit one room only, although no reduction in rent was made, and two members of the family, at still further expense, had to lodge at a neighbour's house.

There is clearly, therefore, a strong case for investigation, which, in order to be adequate and complete, should involve a systematic house-to-house enquiry, and I hope there will be opportunity for this to be done in the coming year.

VIII.—ROUTINE SANITARY WORK, HOUSE INSPECTION, &c.

SUMMARY OF INSPECTORS' WORK.

	Inspectors.			
	White.	Rabbets.	Payne.	Total.
Number of complaints received and investigated	72	92	25	189
Number of Premises inspected	277	553	142	972
Total number of Visits paid	1698	1712	1283	4693
Nuisances discovered	224	258	149	631
*Nuisances abated without report	126	188	68	382
*Nuisances abated after report	38	64	65	167
Preliminary Notices served	109	151	40	300
Legal Notices served	63	70	23	156
Notices followed by legal proceedings ..	—	2	—	2
CHARACTER OF WORK DONE—				
Houses cleansed and repaired generally ..	62	108	29	199
Ventilation of houses improved	2	5	—	7
Overcrowding abated	2	10	1	13
Defective roofs repaired	35	25		65
Houses under-pinned (damp-proof course inserted)	2	11	—	13
Eaves-gutters renewed or repaired	25	40		72
Water-closets renewed or repaired	53	5	18	126
Water-closets provided with water for flushing	3	52	4	5

* Including those outstanding from the previous year.

	Inspectors.			Total.
	White.	Rabbets.	Payne.	
Privies or earth-closets re-constructed or improved	3	—	11	14
Houses supplied with water from main ..	2	10	11	23
Water-tanks or cisterns cleansed or covered..	16	35	2	53
Yards of houses paved with impervious material	34	26	4	64
Paving of yards repaired.. .. .	10	14	6	30
Floors of sculleries paved or repaired.. ..	22	19	—	41
Ashpits or dustbins provided	31	92	190	313
" " cleansed and covered ..	9	13	—	22
Cesspools abolished and filled up	4	1	4	9
" cleansed	—	1	20	21
Houses at which drains were tested	62	32	37	131
" " " found defective ..	58	15	28	101
Houses at which drains were reconstructed or new provided	48	45	20	113
Houses at which drains were cleansed, ventilated, trapped, or repaired.. .. .	43	82	18	143
Number of drain tests made in course of work done under the two previous headings ..	107	81	44	232
Houses at which inspection chambers in drains were provided	26	20	16	62
Stables provided with drainage	1	6	4	11
Premises from which animals improperly kept were removed.. .. .	3	10	—	13
Number of inspections of food exposed for sale	14	45	36	95
Urinals cleansed or repaired	6	2	1	9
Smoke nuisances abated	1	2	—	3
Offensive accumulations removed	10	27	19	56
Paving of piggeries repaired	—	13	2	15
Infected houses fumigated and cleansed ..	49	145	17	211
Visits paid to infected houses	230	814	316	1360

IX.—REGULATED TRADES AND BUSINESSES.

(a) DAIRIES, COWSHEDS, AND MILKSHOPS.

There were 67 premises registered under the Dairies, Cowsheds, and Milkshops Order at the close of the year, as compared with 63 in 1896.

They were distributed as follows:—

Addington	2	Morden	2
Beddington	6	Sanderstead	5
Coulsdon	13	Wallington	8
Merton	10	Woodmansterne.. ..	0
Mitcham	21		
		Total.. .. .	67

Four premises in Mitcham, 2 in Beddington, and 1 in Merton were newly registered during the year, while 2 in Coulsdon and 1 in Mitcham were discontinued.

The total number of visits paid to these premises during the year was 212, and on 52 occasions complaint had to be made of uncleanness, or other neglect of the regulations, but verbal requisitions were complied with in all cases except one. The exception was Agate's cowshed, in Mitcham, and proceedings were taken for several infractions of the above Order. Penalties were imposed, but the premises had not been improved at the close of the year.

(b) SLAUGHTERHOUSES.

There were 17 premises in use at the close of the year in which the slaughtering of animals for the food of man is carried on, of which 14 are regulated by Bye-laws of the Council.

The total number of visits paid to these premises during the year was 153, and on 14 occasions complaint had to be made of uncleanness or other neglect of the Bye-laws. Verbal requisitions were in all cases complied with.

(c) BAKEHOUSES.

There were 26 bakehouses in use at the close of the year, and the total number of visits paid to them during the year was 78. In 25 cases requisitions to cleanse or to carry out improvements were necessary, and were duly complied with.

X.—GENERAL.

River Pollution.—The condition of watercourses in the District is under more or less constant supervision, both by the officers of the Council and by the County Medical Officer,

sometimes in conjunction. The state of the River Wandle, near Beddington and near Hackbridge, and the pollution of the Beverley Brook at Worcester Park, have been the subjects of reports.

The bed of the river between the Waddon pools and Beddington has long been unsatisfactory, from the accumulation of deposit, and is at times offensive. Early in the year the Croydon Corporation had the pools thoroughly cleaned out, and later on something was also done by the riparian owner towards cleansing the portion of the river named. At Hackbridge, serious polluting facilities were discovered at Frost's Mill, and action has been taken in the matter both by this Council and the neighbouring Carshalton Council.

Near Beddington Corner are other mills, and some dwellings, in the District of Carshalton, which have long polluted the stream; but this Council has agreed to the construction of a sewer to drain the premises into their system in that locality, and if the mills are connected therewith (a course which this Council has sanctioned), this difficult source of contamination will disappear.

In this neighbourhood, too, the voluminous effluent from the Croydon sewage farm enters the river. It flows for some distance near the roadway in an open stream; and as it was reported that some purveyors of watercress were in the habit of washing this greenstuff in it, preparatory to sending it away for sale, the Council caused a notice to be posted, deprecating the practice, and warning the purveyors that they would, by so doing, render themselves open to the seizure of their wares as unfit for human consumption. The cultivation of this food is extensively practised in this locality, and the water of the sewage effluent is largely used in the process, but I cannot believe that such a proceeding is free from risk.

Nuisances due to the pollution of the Beverley Brook in Merton by drainage from Cheam and Worcester Park, in another District, were the subject of great complaint during the year. Sewage disposal works, however, have been recently inaugurated, and, although not by any means satisfactory as yet, it may be hoped that the trouble will be over before long.

Refuse Collection.—The collection of house refuse in a portion of Sanderstead was commenced during the year, and the area dealt with in Kenley was extended. Otherwise the same arrangements as existed last year have been carried out, the collection being made weekly in the most populous parts of the District.

The refuse from Mitcham is not now disposed of at the brickfield in Western Road, referred to in the last Annual Report, but large quantities from London Parishes are still brought there. It is a most unsuitable place, and close to a considerable population.

Cemetery.—Early in the year a site for a Cemetery for Beddington and Wallington was selected near Bandon Hill in the former Parish. The soil consists of Thanet sand of considerable depth, overlying the chalk formation, and the Council, having obtained a favourable report from the eminent geologist, Mr. W. Whitaker, F.R.S., eventually entered into a provisional agreement with the owner for its purchase.

The Council further decided that the proposed Cemetery should also make provision for the Parish of Coulsdon, whose need for a burial ground is extremely urgent, so that the requirements of three Parishes will be met simultaneously, if the Local Government Board give the necessary sanction to the site. Mr. Chart is preparing the necessary plans, which were not quite completed at the end of the year, but it may be mentioned that the estimated cost, including land, is £16,000.

Bye - Laws.—The new bye-laws respecting nuisances received the final sanction of the Local Government Board during the year, and are now, therefore, in force. The most important changes are that they apply to the whole District, instead of a portion only, and that the carting of offensive manure is regulated. There is plenty of scope for the enforcement of the latter.

The building bye-laws were returned from the central authority, towards the end of the year, for amendment by the Council in several respects.

The nuisances arising from the piggery businesses, described in previous Annual Reports, were bitterly complained of during the year, and I advised the Council to endeavour to obtain a code of stringent bye-laws to regulate them. In May a draft of suggested bye-laws was sent to the Local Government Board, to ascertain whether anything of the kind would be sanctioned, but no decision had been announced at the close of the year.

The nuisance caused by gipsy encampments continues to cause trouble, especially at Lonesome in Mitcham. Legal proceedings are more or less futile, and the general practice here is to keep these nomads on the move as constantly as possible. This is carried out by the Inspector of Nuisances, with the aid of the police, but it involves the consumption of an enormous amount of valuable time, and bye-laws to deal with the matter are under consideration.

Polluted Well.—Early in the year the Council took proceedings under Sec. 70 of the Public Health Act to close a polluted well at a private house in Merton. The necessary order to close was granted by the magistrates, and water has since been laid on from the public supply.

Table I.—The AREA in Acres, INHABITED HOUSES, POPULATION, and DENSITY of each Parish in the District in 1891 and 1897.

Parish.	Area in Acres.	Number of Inhabited Houses.		Population.						Density. Acres per person.	Average Person per House, 1891.
				1891.			Estimated to middle of 1897				
		1891.	1897.	Persons.	Males.	Females	Persons.	Males.	Females		
										1891.	
Addington	3,605	132	132	670	346	324	670	350	320	5·4	5·0
Beddington	3,128	442	523	2,607	1,162	1,445	3,000	1,340	1,660	1·2	5·9
Coulsdon	4,314	537	655	3,335	1,623	1,712	4,000	1,940	2,060	1·3	6·2
Merton	1,765	654	725	3,360	1,612	1,748	3,700	1,770	1,930	0·52	5·1
Mitcham	2,915	2,055	2,283	10,758	5,300	5,458	12,100	5,960	6,140	0·27	5·2
Morden	1,475	138	154	763	387	376	860	435	425	1·9	5·5
Sanderstead	3,150	96	133	509	262	247	680	350	330	6·1	5·3
Wallington	823	710	834	3,823	1,587	2,236	4,500	1,860	2,640	0·25	5·4
Woodmansterne ..	1,591	81	97	408	204	204	490	245	245	3·9	5·0
The District	22,766	4,845	5,536	26,233	12,483	13,750	30,000	14,300	15,700	0·86	5·4

N.B.—The above Table excludes the *inmates* of three institutions, viz., Cane Hill Asylum, Coulsdon, and the Holborn Union Workhouse and Holborn Schools, in Mitcham. The population and mortality of these institutions are included in those of the Metropolis.

The estimated populations are subject to the qualifications mentioned on the first page of the text.

Table II.—Showing the POPULATION, MARRIAGES, BIRTHS, and DEATHS, for the Year 1897, and 10 Years preceding.

GROSS NUMBERS.

The Year.	Estimated Population.	Marriages.	Registered Births.	Corrected No. of Deaths.			Deaths in Public Institutions.
				Total all Ages.	Under One Year.	Under Five Years.	
1897	30000	NO RETURNS.	821	347	80	121	228
1896	29350		765	386	105	160	209
1895	28500		769	352	87	117	208
1894	28200		732	299	71	102	259
1893	27720		760	402	108	148	274
1892	27000		765	355	91	126	221
1891	26400		790	325	90	123	182
1890	25810		722	291	66	104	151
1889	25265		746	274	78	117	172
1888	24730		736	307	73	122	154
1887	24200		726	316	74	120	171
Average of 10 years 1887-96.	26720		751	331	84	124	198

N.B.—Before 1893, the deaths occurring outside the District among persons belonging thereto were *not* included in the above figures: such deaths would probably number between 30 and 40 for each year.

Table III.—Showing the Annual BIRTH and DEATH RATES, and DEATH RATES OF INFANTS, for the Year 1897 and 10 Years preceding.

In the Year.	Birth Rate per 1000 of the Population.	Corrected Death Rate per 1000 of the Population.	Deaths of Children under 1 year, per 1000 of Registered Births.
1897	27·4	11·6	97
1896	26·1	13·2	137
1895	27·0	12·4	113
1894	25·9	10·6	97
1893	27·4	14·5	142
1892	28·3	13·2	119
1891	30·0	12·3	114
1890	28·0	11·3	92
1889	29·5	10·9	105
1888	29·7	12·4	99
1887	30·0	13·1	102
Average of 10 years, 1887 to 1896.	28·2	12·4	112

N.B.—Before 1893, the deaths occurring outside the District among persons belonging thereto were *not* included in the above figures: the inclusion of such deaths since 1893 has increased the death-rates considerably.

Table IV.—Showing the number of DEATHS from the Principal Zymotic Diseases in the 10 Years, 1887 to 1896, and in the Year 1897.

Disease.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	Average Annual Deaths in 10 years, 1887—1896.	Total Deaths in 1897.	Death Rate per 1000 Population in 10 years, 1887—1896.	Death Rate per 1000 Population in 1897.
Small-pox	—	—	—	—	—	1	—	—	—	—	—	—	·00	·00
Measles	25	3	4	12	6	17	7	1	—	18	9	5	·34	·16
Scarlet Fever	5	3	—	19	1	3	4	5	2	—	4	5	·15	·16
Diphtheria	9	22	6	4	5	5	2	21	7	5	9	4	·34	·13
Whooping Cough ..	—	2	21	2	11	3	22	2	3	13	8	9	·30	·30
Typhus	—	—	—	—	—	—	—	—	—	—	—	—	·00	·00
Fever { Enteric	4	1	2	1	1	4	4	2	4	5	3	3	·11	·10
Simple	—	—	—	—	—	—	—	—	—	—	—	—	·00	·00
continued	—	—	—	—	—	—	—	—	—	—	—	—	·00	·00
Diarrhœa	16	7	2	11	11	20	20*	9	17	18	13	28	·49	·93
Totals.. ..	59	38	35	49	35	53	59	40	33	59	46	54	1·72	1·80
Zymotic Death-rate	2·44	1·54	1·38	1·82	1·33	1·96	2·13	1·41	1·16	2·01	—	—	1·72	1·80
Zymotic Death-rate in England and Wales.	2·42	1·88	2·23	2·15	1·91	2·0	2·47	1·81	2·17	2·21	—	—	2·12	2·15

* Including a case of cholera.

N.B.—Before 1893, the deaths occurring outside the District among persons belonging thereto were *not* included in the above figures.

Table V.—DEATHS Registered from all Causes during the Year 1897.

NOTE.—The Deaths of Non-Residents occurring in Public Institutions situated in the District are excluded, and the Deaths of Residents occurring in Public Institutions situated beyond the limits of the District are included.

	Ages.											Total.
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 & up- wds	
I. SPECIFIC FEBRILE, OR ZYMOTIC DISEASES ..	27	15	8	..	3	..	1	1	3	1	..	59
II. PARASITIC DISEASES .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
III. DIETETIC DISEASES	3	..	..	..	..	..	..	..	..	..	..	3
IV. CONSTITUTIONAL DISEASES	3	5	2	11	9	4	14	8	6	4	..	66
V. DEVELOPMENTAL DISEASES	13	..	..	..	..	..	..	..	3	14	11	41
VI. LOCAL DISEASES	25	18	7	4	6	11	19	17	26	13	7	153
VII. DEATHS FROM VIOLENCE	1	1	..	3	1	1	3	1	1	2	..	14
VIII. DEATHS FROM ILL-DEFINED AND NOT SPECI- FIED CAUSES	8	2	..	..	..	..	..	..	..	..	1	11
TOTALS	80	41	17	18	19	16	37	27	39	34	19	347

I.—SPECIFIC FEBRILE, OR ZYMOTIC DISEASES.												
1.—MIASMATIC DISEASES.												
Small-pox { Vaccinated .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
Unvaccinated .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
No statement .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
Measles	1	3	1	..	..	..	..	..	..	..	..	5
Scarlet Fever .. .. .	..	3	2	..	..	..	..	..	..	..	..	5
Typhus .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
Whooping Cough	4	5	..	..	..	..	..	..	..	..	..	9
Diphtheria .. .. .	..	1	3	..	..	..	..	..	..	..	..	4
Simple Continued and Ill-defined Fever .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
Enteric or Typhoid Fever .. .. .	..	..	2	..	..	..	1	..	..	..	..	3
Influenza .. .. .	..	..	..	..	1	..	..	1	..	..	..	2
2.—DIARRHOEAL DISEASES.												
Simple Cholera .. .. .	..	..	..	..	..	..	1	..	1	1	..	..
Diarrhoea, Dysentery	22	3	..	..	..	..	1	..	1	1	..	28
3.—MALARIAL DISEASES.												
Remittent Fever .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
Ague .. .. .	..	..	..	..	..	..	..	1	..	..	..	1
4.—ZOOGENOUS DISEASES.												
Cowpox and Effects of Vaccination .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
Other Diseases (e.g., Hydrophobia, Glanders, and Splenic Fever) .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
5.—VENEREAL DISEASES.												
Syphilis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
Gonorrhoea, Stricture of Urethra .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
6.—SEPTIC DISEASES.												
Erysipelas .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
Pyæmia, Septicæmia .. .. .	..	..	..	..	1	..	..	..	..	..	..	1
Puerperal Fever .. .. .	..	..	..	..	1	..	..	..	..	..	..	1

2.—DISEASES OF ORGANS OF SPECIAL SENSE.
(*e.g.*, of Ear, Eye, Nose)

Deaths Registered from all Causes—continued.

[illegible]

[illegible]

SUMMARY OF TABLE V.

	No. of Deaths.
I.—SPECIFIC FEBRILE, OR ZYMOTIC DISEASES.	
1. Miasmatic Diseases	28
2. Diarrhœal "	28
3. Malarial "	1
4. Zoogenous "	—
5. Venereal "	—
6. Septic "	2
II.—PARASITIC DISEASES	—
III.—DIETETIC DISEASES	3
IV.—CONSTITUTIONAL DISEASES	66
V.—DEVELOPMENTAL DISEASES	41
VI.—LOCAL DISEASES.	
1. Diseases of Nervous System	47
2. Diseases of Organs of Special Sense	—
3. Diseases of Circulatory System	30
4. Diseases of Respiratory System	45
5. Diseases of Digestive System	21
6. Diseases of Lymphatic System	—
7. Diseases of Gland-like Organs of Uncertain Use	1
8. Diseases of Urinary System	7
9. Diseases of Reproductive System	—
(a) Diseases of Organs of Generation	—
(b) Diseases of Parturition	—
10. Diseases of Bones and Joints	2
11. Diseases of Integumentary System	—
VII.—VIOLENCE.	
1. Accident or Negligence	10
2. Homicide	—
3. Suicide	4
4. Execution	—
VIII.—ILL-DEFINED AND NOT SPECIFIED CAUSES	11
TOTAL	347

Table VI.—Ascertained Cases of Infectious Disease since adoption of the Notification Act.

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	
								Private Houses.	Public Institutions.
Small-pox	—	—	7	1	2	—	—	3	—
Scarlatina	109	85	117	316	99	51	65	240	22
Diphtheria	19	17	16	44	63	26	45	34	1
Membranous Croup	1	—	—	—	1	—	1	—	—
Typhoid Fever ..	14	9	12	24	12	18	14	13	—
Continued Fever ..	—	—	—	1	—	1	2	—	—
Puerperal Fever ..	1	1	1	4	6	1	—	2	—
Cholera	—	—	—	1	—	—	—	—	—
Erysipelas	4	13	22	31	18	18	33	20	6
Measles	134	237	579	138	458	29	1083	162	5
* Acute Diarrhœa ..	—	—	—	—	5	—	—	—	—
Totals	282	362	754	560	664	144	1243	474	34

* Acute diarrhœa was a notifiable disease during September, 1894.

Table VII.—Cases of Typhoid Fever (including Continued Fever) in each Parish since Notification was adopted.

	Addington	* Beddington	† Coulsdon	§ Merton	§ Mitcham	* Morden	† Sanderstead	* Wallington	* Woodmansterne	Institutions	The District
1890	—	6	—	—	3	—	—	4	—	1	14
1891	—	2	2	1	2	—	1	1	—	—	9
1892	—	2	—	2	4	—	—	3	—	1	12
1893	—	2	4	4	12	1	—	1	—	1	25
1894	—	—	4	2	2	—	—	4	—	—	12
1895	—	1	1	4	6	1	—	3	—	3	19
1896	—	1	2	1	9	—	1	2	—	—	16
1897	—	1	2	1	6	—	—	3	—	—	13
	—	15	15	15	44	2	2	21	—	6	120

* Water supplied by Sutton Water Company.

† " " " East Surrey Company.

§ " " " Lambeth Company.

Addington is principally supplied by the Croydon Corporation.

LOCAL GOVERNMENT BOARD TABLES.

A. TABLE OF DEATHS during the Year 1897, in the Croydon Rural District, classified according to DISEASES, AGES, and LOCALITIES.

Names of Localities adopted for the purpose of these Statistics; public institutions being shown as separate localities. Columns for Population and Births are in Table B. (a)	MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES.							MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																													
	At all ages. (b)	Under 1 year. (c)	1 and under 5 (d)	5 and under 15 (e)	15 and under 25 (f)	25 and under 65 (g)	65 and upwards. (h)	(i)	Small-pox. 1	Scarlatina. 2	Diphtheria. 3	Membranous Group. 4	FEVERS.							Typhus. 5	Enteric or Typhoid. 6	Con-tinued. 7	Relap-sing. 8	Puerperal. 9	Cholera. 10	Erysipelas. 11	Measles. 12	Whooping Cough. 13	Diarrhoea and Dysentery. 14	Rheumatic Fever. 15	Phthisis. 16	Bronchitis, Pneumonia, and Pleurisy. 17	Heart Disease. 18	Influenza. 19	Injuries. 20	All other Diseases. 21	TOTAL. 22
ADDINGTON	7	1	..	1	..	3	2	Under 5 5 upwds.	1	..	1	..	2	2	1	6	
BEDDINGTON	31	8	3	1	3	8	8	Under 5 5 upwds.	1	3	2	3	2	..	4	2	5	..	1	3	11	20	
COULSDON	82	6	3	2	..	11	10	Under 5 5 upwds.	1	2	1	2	1	..	3	2	4	..	1	12	23	9
MERTON	38	9	6	11	12	Under 5 5 upwds.	2	3	4	1	2	12	15	23		
MITCHAM	155	39	23	9	11	39	34	Under 5 5 upwds.	..	3	1	..	..	..	..	..	..	..	..	..	4	4	19	..	8	15	15	9	..	23	62	93	133	233
MORDEN	8	2	..	..	..	2	4	Under 5 5 upwds.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1	1	..	..	2	2	2	6
SANDERSTEAD	3	..	3	..	..	..	..	Under 5 5 upwds.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	1	3	..	..	..
WALLINGTON	35	13	2	2	2	7	9	Under 5 5 upwds.	..	..	1	..	..	1	..	..	..	..	..	..	..	..	1	..	..	1	3	..	..	..	11	15	20	..
WOODMANSTERNE	7	1	1	3	2	Under 5 5 upwds.	1	..	2	3	1	6	..		
FEMALE ORPHAN ASYLUM, BEDDINGTON	Under 5 5 upwds.		
RUSSELL HILL SCHOOL, BEDDINGTON	Under 5 5 upwds.		
REEDHAM ORPHANAGE, COULSDON	Under 5 5 upwds.		
CANE HILL ASYLUM, COULSDON	172	..	..	..	7	126	39	Under 5 5 upwds.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	16	14	..	1	116	172	..	..	..	..
HOLBORN SCHOOLS, MITCHAM	2	..	1	1	Under 5 5 upwds.	1	1	1	1		
HOLBORN WORKHOUSE, MITCHAM	54	..	..	..	..	21	33	Under 5 5 upwds.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	16	12	8	..	..	1	16	54	..	..	
GROSS TOTALS....	544	79	41	16	24	231	153	Under 5 5 upwds.	..	3	1	..	..	2	..	..	1	..	..	4	10	25	..	70	18	45	2	11	58	120	226	424	..	..	
The subjoined numbers have also to be taken into account in judging of the above records of mortality.																																					
Deaths occurring outside the District among persons belonging thereto, and which must be added to above	31	1	1	2	1	15	11	Under 5 5 upwds.	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	4	..	6	..	3	15	29	..	..	..	..
Deaths occurring within the District among persons not belonging thereto, and which must be deducted from above ..	228	..	1	1	7	147	72	Under 5 5 upwds.	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	41	28	22	..	2	133	227	..	..	..	1
CORRECTED TOTALS..	347	80	41	17	18	99	92	Under 5 5 upwds.	..	3	1	..	..	3	..	..	1	..	..	4	9	25	..	18	..	2	59	108	121	226	..	..	..	..

B. TABLE OF POPULATION, BIRTHS, and of NEW CASES OF INFECTIOUS SICKNESS, coming to the knowledge of the Medical Officer of Health, during the year 1897, in the Croydon Rural District, classified according to DISEASES, AGES, and LOCALITIES.

NAMES OF LOCALITIES, adopted for the purpose of these statistics; Public Institutions being shown as separate localities.	POPULATION AT ALL AGES.		Registered Births.	Aged under 5 or over 5.	NEW CASES OF SICKNESS IN EACH LOCALITY COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH.													NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITALS.					
	Last Census	Estimated to middle of 1897.			Small-pox.	Scarlatina.	Diphtheria.	Mem- branous Group.	FEVERS.					Cholera.	Erysipelas.	Measles.	Small-pox.	Scarlatina.	Diphtheria.	Enteric or Typhoid Fever.			
									Typhus.	Enteric or Typhoid.	Con- tinued.	Relaps- ing.	Puerperal										
(a)	(b)	(c)	(d)	(e)	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	4		
ADDINGTON	670	670	14	Under 5 5 upws.	..	3	..	..	..	..	..	..	..	..	1	..	..	..	..	2	..		
BEDDINGTON	2607	3000	57	Under 5 5 upws.	1	1	..	..	..	1	..	..	1	..	1	2	..	1	2	..	..
COULSDON	3335	4000	109	Under 5 5 upws.	..	1	..	..	..	2	..	..	..	..	3	2	4	..	3	..	1		
MERTON	3360	3700	103	Under 5 5 upws.	..	5	3	..	..	1	..	..	..	..	1	10	7	..	3	2	..		
MITCHAM	10758	12100	389	Under 5 5 upws.	..	47	3	..	..	6	..	..	..	..	9	73	51	..	32	2	3		
MORDEN	763	860	27	Under 5 5 upws.	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
SANDERSTEAD	509	680	13	Under 5 5 upws.	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..
WALLINGTON	3823	4500	93	Under 5 5 upws.	..	5	2	..	..	3	..	..	1	..	1	3	7	..	2	1	..		
WOODMANSTERNE	409	490	16	Under 5 5 upws.	2	2	..	..	..	..	..	..	..	..	..	2	..	2	2	..	..
FEMALE ORPHAN ASYLUM, BEDDINGTON .....	..	(145) *	..	Under 5 5 upws.	..	7	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
RUSSELL HILL SCHOOL, BEDDINGTON .....	..	(280) *	..	Under 5 5 upws.	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
REEDHAM ORPHANAGE, COULSDON .....	..	(300) *	..	Under 5 5 upws.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
CANE HILL ASYLUM, COULSDON	1115	2200	..	Under 5 5 upws.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
HOLBORN SCHOOLS, MITCHAM	477	430	..	Under 5 5 upws.	..	6	..	..	..	..	..	..	..	..	6	2	3	..	6	..	..
HOLBORN WORKHOUSE, MITCHAM	892	750	..	Under 5 5 upws.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
TOTALS....	28717	33380	821	Under 5 5 upws.	3	70	7	..	..	13	..	..	2	..	24	92	75	..	3	44	1	..	
(Excluding last 3 Institutions)..	26233	30000				192	28	..	..										111	5	4		

* Included in Beddington and Coulsdon.

TABLE OF POPULATION, BIRTHS, AND DEATHS IN THE DISTRICT OF COLUMBIA, 1900									
The following table shows the population of the District of Columbia, and the number of births and deaths, for each year from 1900 to 1909, inclusive.									
Year	Population	Births	Deaths	Rate of Births	Rate of Deaths	Rate of Increase	Rate of Decrease	Rate of Change	Rate of Total Change
1900	111,000	1,100	1,100	10.0	10.0	0.0	0.0	0.0	0.0
1901	112,000	1,150	1,150	10.3	10.3	0.3	0.3	0.0	0.0
1902	113,000	1,200	1,200	10.6	10.6	0.3	0.3	0.0	0.0
1903	114,000	1,250	1,250	10.9	10.9	0.3	0.3	0.0	0.0
1904	115,000	1,300	1,300	11.3	11.3	0.4	0.4	0.0	0.0
1905	116,000	1,350	1,350	11.7	11.7	0.4	0.4	0.0	0.0
1906	117,000	1,400	1,400	12.0	12.0	0.3	0.3	0.0	0.0
1907	118,000	1,450	1,450	12.3	12.3	0.3	0.3	0.0	0.0
1908	119,000	1,500	1,500	12.6	12.6	0.3	0.3	0.0	0.0
1909	120,000	1,550	1,550	12.9	12.9	0.3	0.3	0.0	0.0
Total	1,110,000	11,000	11,000	10.0	10.0	0.0	0.0	0.0	0.0