

[Report 1901] / Medical Officer of Health, Surrey County Council.

Contributors

Surrey (England). County Council.

Publication/Creation

1901

Persistent URL

<https://wellcomecollection.org/works/dc3k4vku>

License and attribution

You have permission to make copies of this work under a Creative Commons, Attribution license.

This licence permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See the Legal Code for further information.

Image source should be attributed as specified in the full catalogue record. If no source is given the image should be attributed to Wellcome Collection.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

187 AC 4413

h

Surrey County Council.

MEDICAL OFFICERS OF HEALTH.

ANNUAL REPORT,

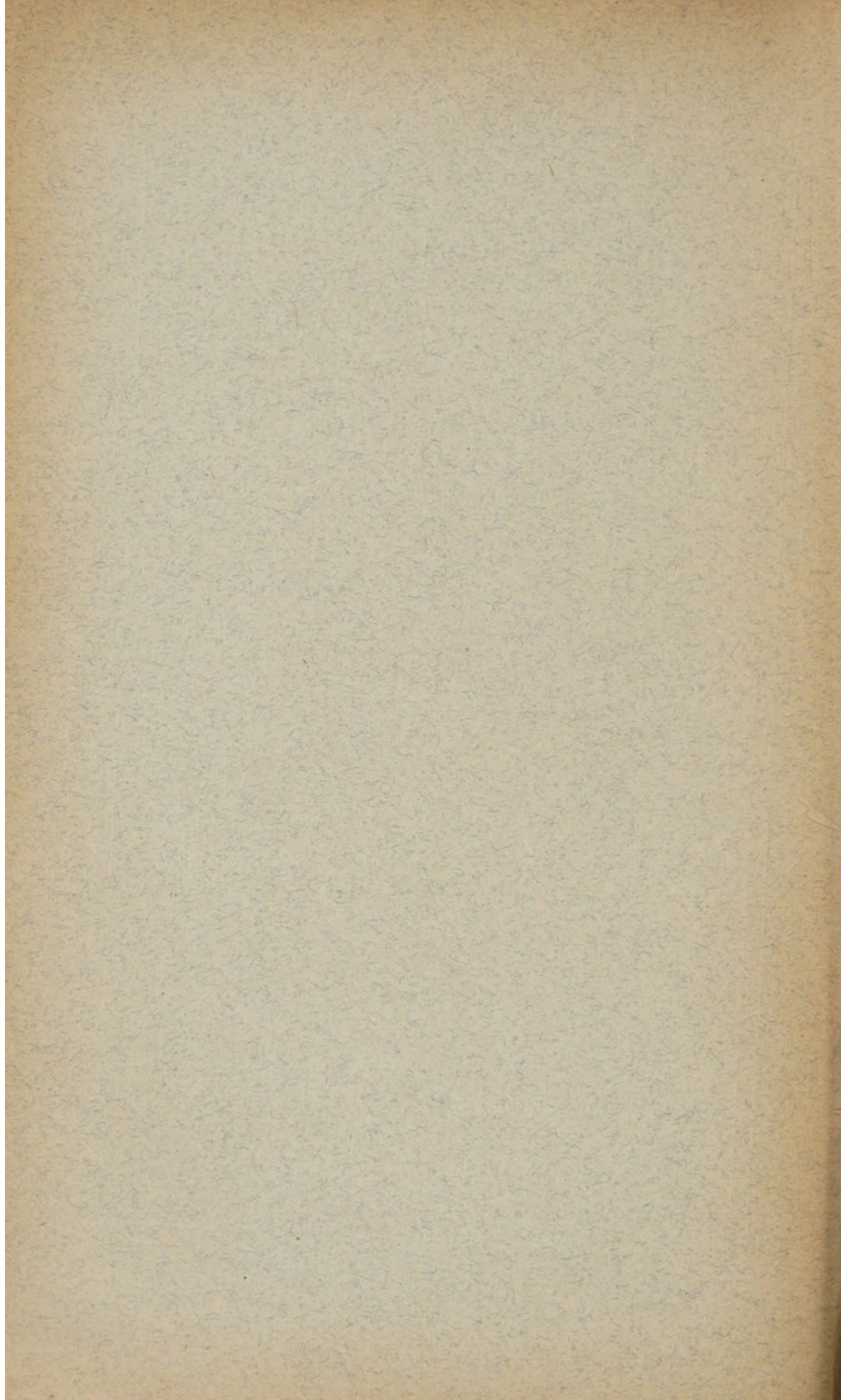
1901.

WITH SUMMARIES OF DISTRICT REPORTS.



BY THE MEDICAL OFFICER FOR THE

County of Surrey.



Surrey County Council

Public Health.

The Times,

Telegrams, Mr Seaton. Clapham Common. 56, North Side,


Clapham Common,
S.W.

The Royal College of Surgeons

With the Compliments of the

Surrey Co. Council

July 26. 1902.



Digitized by the Internet Archive
in 2018 with funding from
Wellcome Library

<https://archive.org/details/b30148418>

ANNUAL REPORT,

1901,

OF THE

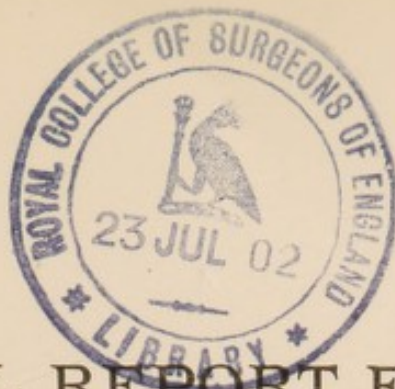
MEDICAL OFFICER OF HEALTH

OF THE

ADMINISTRATIVE COUNTY OF SURREY.

TABLE OF CONTENTS.

	PAGE
I. Introductory Note 	3
II. County Sanitary Administration 	4
III. Vital Statistics 	9
IV. Meteorology 	19
V. Domestic Water Supply 	22
VI. Sanitation of Dwellings 	40
VII. Mortuaries 	61
VIII. Main Sewerage 	64
IX. Nuisances 	67
X. Dairy Sanitation 	70



ANNUAL REPORT FOR 1901.

I.—INTRODUCTORY NOTE.

MR. CHAIRMAN, MY LORDS AND GENTLEMEN,

The subjects dealt with in the following Report are set forth in the Table of Contents, and are to be found in detail in the Index.

I have endeavoured to make the Report as complete as time and circumstances permit; but there is one important omission to which I must refer. The section usually headed Preventive Measures (which relates to Smallpox and other infectious fevers treated at hospitals) is absent. It is well known that I have given great attention to the subjects of vaccination, smallpox-diagnosis, notification, &c., and I am now preparing a Report, which should enable a full use to be made of the additional experience gained by the recent epidemic. 87

It will be seen that a large part of this Report consists in an account of that most important matter, the "Sanitation of Dwellings."

I again beg to thank Mr. Campbell Bayard for his valuable section on Meteorology in Surrey.

I also desire in common with other medical officers of health in England and Wales to express my appreciation of the great efforts made by Dr. Tatham (who superintends our National system of Vital Statistics), to improve the nomenclature of disease, and the classification of deaths for public health purposes. 87

II.—COUNTY SANITARY ADMINISTRATION.

The subjects on which I have been called on to give expert information, advice, evidence and other assistance, will be summed up as briefly as possible. In so far as these matters are dealt with in the County Council quarterly volumes, or in the separate sections of this Report, they hardly need recapitulation. It will, however, be understood that a great deal of time and attention is occupied by communications and consultations on matters of considerable importance that are not reported officially at the time, and which it is therefore desirable to enumerate here.

The New Medical Officers' Districts.—The relinquishment by Dr. Jacob of eleven united districts in the County, in the early part of the year, led to a rearrangement among the authorities concerned. The Epsom Urban and Rural, the Dorking Urban and Rural, Leatherhead and Carshalton, now form one united district, for which Dr. Williamson is the Medical Officer of Health. The Chertsey Urban and Rural, Weybridge and Walton, form another united district, for which Dr. Hanslow Brind is the Medical Officer of Health. Guildford Rural District and Woking remain in combination; Dr. Pierce is the Medical Officer of Health, and he is also Medical Officer to the Joint Hospital Board. In this capacity he has arduous and responsible duties, apart from those of Medical Officer of Health, not only at the Stoke Isolation Hospital, but latterly at the Whitmoor Smallpox Hospital as well. The Reigate Urban and Rural Districts continue to have the advantage of Dr. Jacobs' services.

The appointments of Medical Officers of Health and Sanitary Inspectors are by the District Councils, under the sanction and approval of the Local Government Board, the County Council repaying a moiety of the salaries from the County fund. Although the County Council has no voice in the appointments, they are deeply interested in all questions of administration in the County, and for this reason I have furnished all the information in my power to the authorities concerned, and am in constant communication with the officials.

Conferences and Consultations.—There were an unusually large number of public Conferences in 1901. I attended the Tuberculosis Congress with the Chairman of the Sanitary Committee, who reported on the proceedings to the Council in July. I also contributed Papers on "County and Municipal Laboratory Work" to the British Medical Association, and on the "Protection of Public Water Supplies," to the Sanitary Institute. There were Conferences on the "Housing of the Working Classes" at Sion House and at Westminster, which I attended at the request of the Committee. A Conference of Medical Officers of Health in the County on the same subject was held in December.

The results of these meetings and deliberations are in some instances already apparent, as will be evident from a perusal of this Report.

A good deal of the consultation work during the past year has had reference to outbreaks of infectious diseases—Small-pox especially; and to questions of vaccination, hospital

accommodation, ambulance, and disinfecting arrangements. I am preparing a special Report on this part of my subject.

The very excellent Isolation Hospitals at Wimbledon and Greenlane, Cheam, were completed, and came fully into use in 1901.

I have received, considered, and advised on special reports on Diphtheria outbreaks from the District Medical Officers of Health of Surbiton, Beddington, Redhill, Wimbledon, Richmond and Woking. I have also received, considered, and advised on special notes and communications from Medical Officers of almost all the districts on the occurrence of Typhoid cases.

Monthly Summaries of Notification Returns.—These continue to be issued, the 84th number being reached at the end of 1901. Some improvements in the form of the returns have been made from time to time in accordance with the suggestions of my colleagues and the Committee.

The part I have taken in connection with questions of *Water Supply, Drainage, and House Sanitation*, is entered into in the appropriate sections of the Report. It only now remains to record a few matters to which it may be necessary to refer to at some future time as having come under official notice in 1901.

The Wandle.—A considerable destruction of fish, attributed to pollution from Croydon, in the spring and summer, was investigated. The arrangements for cleansing the bed and otherwise improving the state of the river have been and are still being discussed.

The Wey.—Special inquiries were made at Artington, Shalford and Guildford, as to the best schemes for obviating

pollution. The subject is now before the Local Government Board.

Chertsey and Addlestone.—The scheme for the drainage and sewage disposal of this district received very close attention, advice and assistance being freely given to the officials concerned in this matter of long-standing difficulty.

Special inspections and inquiries were made by request, and advice was given respectively upon the *Outfall Sewerage Works* at Wimbledon, Malden, Farnham, Merton and Ham.

Inspections were made of *Tenement Houses and Cottages* at *Farnham*, with the Medical Officer of Health, at his request.

The *Military Camp* in the *Frimley* District has been specially inspected and reported on. In consequence of this action some improvement in the method of sewage disposal has already taken place.

The *Haslemere Water Supply* was specially investigated at the request of the District and Parish Councils, the results of whose action will be shortly reported.

The question of the *Notification of Phthisis*, and the arrangement for *Disinfection* by public authorities, including the question of cost, were specially considered, and advice was given thereon to several officials concerned.

At my request the Food Inspectors for the County met me at Kingston in the early part of the year on the matter of *Dairy Sanitation*, and I was subsequently enabled to afford the several District Medical Officers of Health some additional information, which would be of use to them, from notes with which I was furnished.

The Census.—The preliminary volume containing tables of population and houses enumerated in England and Wales was issued in the summer, and was reported on, so far as it related to the Administrative County, to the July meeting of the County Council.

Local Government Board Inquiries have been attended in accordance with the Standing Orders at the following places :—Chertsey, Wimbledon, Guildford, Cobham, Artington, Barnes, Croydon, Nutfield, Richmond, Stoke, Epsom, Camberley, Leatherhead and Shalford. As the subjects are set forth in the volumes of the County Council Reports, it is perhaps unnecessary to repeat the details.

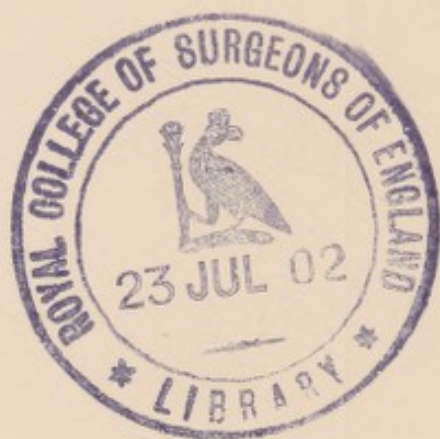
Administrative County of Surrey—Vital Statistics, 1901.

Table showing Birth-rates, Death-rates from all Causes, from the principal Zymotic Diseases, from Phtisis, and from Diseases of the Respiratory Organs, and Infant Mortality.

RURAL DISTRICT.	Population.	Births.	Deaths from all causes (1900).	DEATH-RATES TO 1000 PERSONS LIVING.				Deaths of Infants under one year of age.	Deaths of Infants under one year of age to 100 births.
				All Causes.	Phtisis.	Respiratory Diseases.	Other.		
Chertsey ...	12,253	293	160	23.9	13.1	1.0	1.0	2.0	9.9
Egham ...	11,967	258	146	21.6	12.2	0.8	0.7	1.5	8.9
Farnham ...	17,010	360	210	21.1	12.3	1.1	1.0	1.2	11.9
Hambleton ...	21,719	480	241	22.1	11.1	0.6	0.6	1.5	7.3
Guildford ...	21,254	505	255	23.8	12.0	1.6	0.7	1.2	8.9
Dorking ...	9,771	210	136	21.5	13.9	0.9	1.2	2.4	8.1
Epsom ...	19,465	445	211	22.9	10.8	1.8	0.6	1.4	11.2
Croydon ...	31,180	961	418	28.1	12.2	2.0	0.8	2.3	10.9
Reigate ...	16,817	387	192	23.0	11.4	1.1	0.7	1.8	8.3
Godstone ...	18,468	454	191	24.6	10.3	0.8	0.6	1.5	8.8
Totals ...	182,904	4,353	2,160	23.8	11.8	1.2	0.8	1.7	9.6

URBAN DISTRICT.	Population.	Births.	Deaths from all causes (1900).	DEATH-RATES TO 1000 PERSONS LIVING.				Deaths of Infants under one year of age.	Deaths of Infants under one year of age to 100 births.
				All Causes.	Phtisis.	Respiratory Diseases.	Other.		
Barnes ...	17,901	420	238	23.5	13.3	1.2	1.1	1.5	13.6
Richmond ...	31,797	707	427	22.2	13.4	1.4	0.9	2.5	7.8
Wimbledon ...	42,060	1074	493	25.6	11.7	1.3	0.9	2.2	13.4
Ham... ..	1,460	28	16	19.2	11.0	—	2.7	—	3
Kingston ...	34,558	880	489	25.5	14.2	1.5	1.2	2.3	11.1
Esher and Dittons ...	9,527	214	133	22.5	14.0	1.0	1.5	2.2	28
The Molesey and Coombe ...	6,262	146	70	23.3	11.2	2.1	0.2	1.0	18
Surbiton ...	14,060	324	158	23.0	11.2	1.5	0.9	1.6	24
East & West Molesey ...	5,951	141	79	23.7	13.3	1.3	0.7	1.3	18
Chertsey ...	12,792	337	160	26.3	12.5	1.3	0.9	2.2	35
Weybridge ...	5,864	129	72	24.0	13.4	1.5	1.1	0.9	4
Walton ...	10,390	265	98	25.5	9.0	0.5	0.5	1.6	24
Farnham ...	6,188	188	80	22.5	14.5	0.3	2.1	2.8	14
Frimley ...	8,487	194	82	22.9	9.7	0.5	0.7	1.9	13
Godalming ...	8,761	209	105	23.8	12.0	—	0.8	2.2	18
Guildford ...	15,978	338	189	21.2	11.8	1.1	1.0	1.3	26
Woking ...	16,383	418	195	25.5	11.9	1.8	1.0	2.2	44
Dorking ...	7,683	162	123	21.1	16.0	1.3	1.4	2.5	11
Leatherhead... ..	4,704	94	70	29.0	14.9	1.1	1.3	1.5	8
Epsom ...	10,140	263	151	25.9	14.9	2.3	1.0	2.6	42
Sutton ...	17,305	367	189	21.2	10.9	1.5	0.6	2.1	43
Carshalton ...	6,778	169	81	25.0	12.0	2.7	1.2	2.2	26
Reigate ...	26,077	586	290	22.5	11.1	1.6	0.7	1.5	61
Caterham ...	6,439	170	51	26.4	7.9	0.8	0.6	0.8	9
Totals ...	329,958	7,773	4,043	23.8	12.4	1.3	1.0	2.0	859

In the above Table the following Public Institutions have been allowed for as regards Deaths and Populations, viz.: Bantstead, Cane Hill, Caterham and Earlswood Asylums, Caterham Barracks, The Holborn Schools and Workhouse, The South Metropolitan District and Kensington Schools. Brookwood Asylum has been allowed for as regards Deaths.



III.—VITAL STATISTICS.

POPULATION.—The figures given in the district reports are those of the Census 1901 + $\frac{1}{40}$ of the increase of population between 1891 and 1901. The population for the Rural Districts was 182,904; that of the Urban Districts was 326,958; the total population being 509,862. These estimates are arrived at after deducting for Public Institutions, the population of which amounts to about 12,000.

BIRTH-RATES.—The births numbered 4,353 in the Rural Districts, and 7,773 in the Urban Districts, giving a total for the County of 12,126. The birth-rate of the Rural Districts was 23·8, the Urban Districts 23·8, and that of the whole County the same, viz., 23·8.

Croydon Rural, Wimbledon, Kingston, Chertsey Urban, Woking, Walton and Epsom, with fairly large populations, raise the average. Among those districts which have birth-rates below the average, if the "Urban District" of Ham be excepted, there is none in which the rate fell below 20·0.

GENERAL DEATH-RATES.—The deaths numbered 2,160 in the Rural Districts and 4,043 in the Urban Districts, giving a total of 6,203 for the County.

The death-rate of the Rural Districts was 11·8, that of the Urban Districts 12·4, and that of the whole County 12·2.

Among the districts with a fair-sized population there are no very striking variations from the average. Among the small districts with populations of less than 10,000 there are the

usual fluctuations which are to be noted year by year, the same district one year having a remarkably low, and the next year perhaps a remarkably high death-rate. Weybridge furnishes an example this year of the variations due to chance both in the general death-rate and the infant mortality.

INFANT MORTALITY.—The Registrar-General's method of computing this is by reckoning the proportion of deaths among infants under one year of age to 1000 births during the year under consideration. In dealing with the population of all England, the Counties, or the large cities, a correct impression is conveyed by this method. It is otherwise in the case of small populations, such as those of the various sanitary districts in the Administrative County, where the total births are generally so much below 1000. Here it seems preferable to state the proportion of infant deaths per 100 births. This plan is accordingly followed in the last column of the appended Table of Statistics.

On examination of this column it may be seen that the following districts have rates below 10 per cent., viz.:—

<i>Rural.</i>			<i>Urban.</i>		
Chertsey	...	9.9	Surbiton	...	7.4
Egham ...	...	8.9	Walton	...	9.1
Hambleton	...	7.3*	Frimley	...	6.7
Guildford	...	8.9	Godalming	...	8.6
Dorking	...	8.1	Guildford	...	7.7
Reigate...	...	8.3	Dorking	...	6.8
Godstone	...	8.8	Leatherhead	...	8.5
Caterham	...	5.3			

The rate at Caterham (170 births, rate of mortality 5.3 per cent.) is remarkably low. The most satisfactory return is, per-

* This rate is calculated from the figures of Table I. of the printed Report of the Medical Officer of Health.—E.C.S.

haps, that for Guildford, where the births recorded were as many as 338, and the rate of mortality was as low as 7·7 per cent.

Infant mortality depends to a large extent on meteorological and sanitary conditions. It is the hot dry months of August and September that favour the development of epidemic Diarrhœa or Zymotic enteritis, the disease which contributes such a large proportion of the infant deaths. It will be seen from Mr. Campbell-Bayard's Table of Meteorological Observations that during this critical summer or autumn period the temperature on the whole was slightly in excess of the average, and the rainfall (3·52 inches in the two months) was rather below the average. The season was, therefore, if anything, unfavourable to infants. But notwithstanding this, the remarkably low death-rate, especially among some of the fairly large town populations such as that of Guildford, is evidence that greater attention to sanitary conditions (especially the paving and drainage of back yards and the basements of dwellings), together with the more intelligent and careful feeding and nurture of infants, is producing tangible results.

Following the precedent set in the previous year, circular-letters on the above subject were addressed to the Medical Officers of Health and all the medical practitioners in the County in 1901. Under the directions of the County Council, 3032 cards containing simple information and elementary facts relating to the care and feeding of infants were sent to 79 medical practitioners by their own request. There is good reason to think that many lives are being saved by this means. Dr. Mitchell, the Medical Officer of Health for Guildford, especially recognises the value of this action, and mentions in

his Annual Report the remarkably light incidence of epidemic Diarrhœa in his district in 1901.

At Wimbledon the Medical Officer of Health, Dr. Pocklington, refers to the excellent work carried on by the South Wimbledon Day Nursery, in Haydon's Road.

"In the year 1901 no less than 4,000 children have been received into the Nursery. Two houses are now being devoted entirely to the work of this valuable institution."—*District Report*.

Besides quoting Dr. Pocklington's remarks I may mention that I have visited the Institution myself, and found everything, including the source of milk supply, in a most satisfactory condition.

One of the principal causes of infant mortality is referred to in the section on Cowhouse and Dairy Sanitation.

ZYMOTIC DEATH-RATES.—The term "Zymotic death-rate" applies to what are called the principal Zymotic diseases, viz., the following :—

Smallpox.	Whooping Cough.
Scarlet Fever.	Typhoid.
Measles.	Diarrhœa (Epidemic or
Diphtheria.	Zymotic).

(N.B.—Influenza, it will be observed, is *not* included.)

Some confusion still exists in the nomenclature of disease, as it appears in the columns of registered deaths in several of the annual reports. It has still to be explained to the medical practitioners of some districts that the habit of registering deaths from the Zymotic disease "epidemic diarrhœa" by inappropriate names is essentially

misleading. The term epidemic diarrhœa, or as an alternative, Zymotic enteritis, has been fixed in order to prevent confusion. It is very desirable that the importance of this matter should be explained by the Medical Officers of some districts to practitioners individually. Otherwise the Zymotic death-rate may sometimes be misstated to the prejudice of the district, the ill-defined deaths being included in the Zymotic group. Notwithstanding some over-estimation in this way, the rates on the whole are fairly low. That for the Rural Districts is 1·2, and that for the Urban Districts is 1·3.

The districts with rates below 1·0 were as follow :—

<i>Rural.</i>				<i>Urban.</i>			
Egham ...	...	...	0·8	Walton ...	...	...	0·5
Hambleton ...	...	...	0·6	Farnham ...	...	...	0·3
Dorking ...	...	...	0·9	Frimley ...	...	...	0·5
Godstone ...	...	...	0·8	Caterham ...	...	...	0·8

The subject of Zymotic diseases will be dealt with separately in a special report on the Smallpox and preventive measures against epidemic diseases generally. But, although it will be more convenient to deal separately and succinctly with the effects of hospital isolation, disinfection, &c., on the notifiable infectious diseases, opportunity may here be taken of bringing prominently forward the question of “school hygiene,” so far as it relates to infectious diseases prevention.

SCHOOL INSPECTION.

At Richmond, Dr. Crocker, Medical Officer of Health, has had special experience in this department of preventive work. He has for some years been endeavouring to bring practical measures to bear against the common infectious diseases of

children at even an earlier stage than when they come under official notice through the operation of the Notification Act. The part of his Report dealing with the subject of inspection of school children is well worthy the careful attention of both Sanitary and Educational Authorities. Dr. Crocker refers to what he terms a defect in the Education Act, which leaves it doubtful whether the managers of schools have power to insist on medical examinations for the purpose of preventing the spread of infectious diseases. The question being, Whose duty is it to cause such examinations to be made? He proceeds to show that, as "school closure" takes place through the Local Sanitary Authority, the Medical Officer of Health is the proper person to become responsible for the conduct of these investigations. Such investigations would certainly be more complete, and would be expedited, if under the management of one official. Dr. Crocker then explains the system which has been carried into practical effect in the Borough of Eccles, Lancashire, under powers conferred by a local Act of Parliament.

It may here be mentioned that the Act referred to confers on Local Authorities powers analogous to those originally conferred by Parliament on certain Corporations twenty-five years ago by which notification was introduced. It was in fact these local Acts that led to the present national system of notification with all the administrative measures that follow in its train.

In illustration of the practical advantage of preventive measures, Dr. Crocker describes an outbreak of Diphtheria at Kew, which would have assumed epidemic proportions had it not been for the precautionary measures enthusiastically adopted by the managers, although special powers do not at present exist for facilitating them.

At Woking, Dr. Pierce, Medical Officer of Health, makes some suggestive remarks on the way in which infectious diseases are spread at Elementary Schools.

"It is probable," he says, "that the drinking cups serve as vehicles for transferring infection. They should, therefore, be thoroughly cleansed daily, and should be multiplied so as to diminish the risk as much as possible. Attention was called to this matter in the case of the Knaphill and Westfield schools, and also to the defective construction of the lavatory basins."

Dr. Pierce adds that he paid several visits to schools during the year (where he suspected the attendance of a child in an infectious condition), in order to examine the other children present, and get the names of absent children, to be visited and examined in their homes. He further drew attention to the ventilation of schoolrooms when they were faulty in this respect.

It will be remembered that the late Medical Officer of Health for this district took somewhat similar action with a view to preventing the spread of Diphtheria.

Information of any cases of school closure which were found necessary in the various districts in the county was sent to the County Council in the usual way. All these cases are recorded in the District Annual Reports, from which the above-quoted passages are taken. They scarcely call for special comment in this place.

PHTHISIS DEATH-RATE.—The death-rate recorded for the Rural Districts was 0·8, and that for the Urban Districts 1·0. Some of the districts with rates conspicuously above or below

the average were too small as regards population to enable any important inference to be drawn from figures relating to so short a period as that of one year only.

PHTHISIS PREVENTION.

Several of the reports contain valuable information as to Tuberculosis, and refer to preventive measures already adopted, and those recommended for adoption. Among the reports especially to be mentioned are those for Richmond, Wimbledon, Barnes, Reigate Rural, Sutton, Epsom, Leatherhead, Dorking Urban and Rural, Chertsey Rural, and Farnham Rural.

In the last-mentioned report, Dr. Tanner gives expression to opinions which are worthy of careful consideration. With regard to the "**Open-air Treatment**" he ventures to say that he is "not very sanguine that permanent benefit will accrue to the poorer classes." In his experience, though they undoubtedly derive great benefit while under treatment, they relapse almost immediately on being sent home. This is partly due to the fact that they cannot be persuaded of the value of fresh air in their own homes, though they perceive the advantage of it when in hospital; and partly because of the insanitary conditions of their homes. He thinks "that better results will be obtained in the long run by the improvement of home surroundings, and by instilling into the minds of everyone that consumption is undoubtedly a contagious disease, in much the same way as is typhoid, though the length of time between the contraction of contagion and the manifestation of the symptoms is, in consumption, often so great as to obscure the cause of the illness."

The building of tenement houses too close together on the "flat system" (which threatens in some great centres of population to counteract the advantages derived from a better knowledge of the means by which phthisis is propagated), is a danger which happily does not at present affect any part of the Administrative County. But in these reports it has been urged that the constant attention of the sanitary inspectors, acting under the Medical Officer of Health, is required for houses which are old, dilapidated and dirty, especially to the improvement of their ventilation, and to secure the better circulation of air by the removal of obstructive buildings. As a preventive measure this is certainly of the first importance.

I must not omit also to dwell once more upon the importance of the ordinary work of sanitation and sanitary administration in the prevention of this special disease. The steady improvement of the dwellings of the wage-earning classes, including attention to their foundations as well as their superstructure, are measures quite as important now as they ever were in the prevention of phthisis. It may not have been the fashion of late to recall the experience of a great number of towns in which the phthisis death-rate fell with the establishment of main sewerage and drainage works, the decrease being attributed on high authority to the improvements in the condition of the subsoil which resulted therefrom.

Special mention may be made here of the report of Dr. Crookshank, the Medical Officer of Health for Barnes, who adduces some valuable and interesting evidence of the connection which subsists between the prevalence of phthisis and the condition of the subsoil.

Steps have been taken to encourage and promote **voluntary notification** at Barnes, Reigate Rural, and in some other districts in the County. Medical men practising in the district are invited to notify cases, the notifications being paid for in the usual way, the object of such notification being to enable the sanitary officers to disseminate information, to disinfect rooms, &c., when necessary, and to investigate the domestic surroundings of such cases, with a view to taking any requisite action under the sanitary clauses of the Public Health Act. The disinfection of premises, of what are called "phthisis houses," should be specially urged. The number of houses disinfected does not as yet appear, from the reports, to be as large as might be expected; but good work is being done in the districts of Barnes, Wimbledon, Sutton, Epsom, Leatherhead, Croydon Rural, Dorking and Chertsey Rural. It may be added that no legal or technical difficulties appear to have arisen in defraying the cost of this very useful public work.

Facilities for **bacteriological diagnosis** have been afforded by some District Councils; but they do not appear to have been availed of as much as might have been expected. At Epsom, however, 9, and in Croydon Rural as many as 41 such examinations were made.

The value of the County Council **leaflets**, and the arrangements made for their distribution, are referred to in several reports.

IV.—METEOROLOGY OF SURREY, 1901.

BY

FRANCIS CAMPBELL BAYARD, Secretary, Roy. Met. Soc.

I have been desired by Dr. Seaton, the Medical Officer of Health for the County of Surrey, to draw up a short report on the meteorological conditions prevailing in the County during the year 1901, and I have much pleasure in complying with his request.

THE BAROMETER.—Pressure was above the average in eight months, the month of November being especially noticeable, as it was accompanied by a great deficiency in the rainfall. Pressure was deficient in four months, in every case, except in September, being accompanied by an increased rainfall. It is unusual to find two consecutive months, as November and December, so different in pressure. The result on the year's mean is a slight deficiency from the average.

TEMPERATURE.—The mean temperature for the year is about half a degree below the average. There were three particularly cold months, viz.: February, March, and November, the latter month being unusually so, and with the exception of July there has been no month with a large excess of temperature*. If the day temperatures (maximum in the shade) are now looked at, it is at once seen how low were the temperatures of February, March, and November, and how high that of July. The night temperatures (minimum in the shade) with the exception of November do not show such large variations from the average.

CLOUD.—The amount of cloud is slightly below the average for the year. The great excess of cloud in March, a cold month, stands out in striking contrast to the cold months of February and November when the cloud was of about the average amount. This is very remarkable for there was a similar excess in March of 1900, which was also a cold month.

* See remarks on Infant Mortality.

WIND.—The year has been a quiet one, and strong winds have been comparatively rare. In only two months—viz.: March and December—was the wind force much above the average, whilst in February and July it was much below.

RAINFALL.—The total rainfall for the year throughout the County so far as I am able to judge from the rainfall statistics collected by the Croydon Microscopical and Natural History Club is about *two and three-quarter inches below the average*†. The months of January, May, July, and November were remarkably dry, the latter month being especially so, in fact we have to go back to 1871 to find a November so dry. March, April and December were wet, December being the wettest December since 1876 taking the County as a whole. As might be expected the number of rainy days—that is days on which 0·01 inch or more fell—is much below the average, in fact only four months out of the twelve show an excess in the number of days. January, May, July, August, September, and November have their number of rainy days considerably below the average, May and September especially so.

SUNSHINE.—The year as a whole has been a sunny one, having about 120 hours in excess of the average. There were only four months, viz.: February, March, September, and November below the average. March had the greatest deficiency. The greatest excess of took place in May and July, but neither are very extraordinary.

For the purpose of comparison I have given in a tabular form an abstract of my own observations at Wallington 140 feet above sea level. This station has for many years past been visited by the Inspector appointed by the Royal Meteorological Society, and is furnished with properly verified instruments, and the time of observation is 9 a.m. The year's observations are compared with the average of the fifteen years 1886-1900.

FRANCIS CAMPBELL BAYARD.

Wallington, Surrey.

5th May, 1902.

† See remarks on Water Supply.

Abstract of Meteorological Observations at Wallington, Surrey.

1901	Barometer reduced, &c. Mean \pm avg. In. In.	Relative Humid- ity. Mean \pm avg. p.c p.c.	Maximum Temp. in shade. Mean \pm avg. deg. deg.	Minimum Temp. in shade. Mean \pm avg. deg. deg.	Minimum Temp. on Grass. Mean \pm avg. deg. deg.	Mean Temp. deg. deg. Mean \pm avg. deg. deg.	Cloud Amount. Mean \pm avg. 0 to 10 10 12	Wind Force. Mean \pm avg. 0 to 12 12 12	Total Rainfall. Depth In. In. \pm avg. In. In.	No. of Rainy Days (Total.) Days \pm avg. No. No.	Sunshine (Jordan) (Total). Amt. \pm avg. hrs. hrs.	Sunshine (Jordan). Possible Duration Amt. \pm avg. p.c. p.c.
Jan.	30.046 \pm .037	90 avg.	43.6 \pm 1.1	32.8 \pm 0.2	30.0 \pm 0.7	38.2 \pm 0.4	7.0 \pm 0.8	1.5 \pm 0.4	0.88 \pm 1.03	14-4	50.1 \pm 7.9	19 \pm 3
Feb.	30.051 \pm .011	88-1	40.2 \pm 4.0	30.9 \pm 1.8	28.3 \pm 0.6	35.6 \pm 2.8	7.7 \pm 0.1	1.4 \pm 0.7	1.51 \pm 0.03	13 avg.	40.7 \pm 21.4	15-7
Mar.	29.758 \pm .141	88 \pm 4	44.5 \pm 4.6	34.0 \pm 0.6	31.2 \pm 0.8	39.2 \pm 2.6	8.6 \pm 1.9	3.3 \pm 1.1	2.77 \pm 0.88	17 \pm 3	63.2 \pm 51.8	17-14
April	29.834 \pm .110	69-8	56.9 \pm 1.1	39.4 \pm 0.7	35.1 \pm 0.4	48.2 \pm 0.9	6.3 \pm 0.4	2.4 \pm 0.3	2.01 \pm 0.55	14 \pm 1	196.4 \pm 36.5	47 \pm 9
May	30.083 \pm .104	72 avg.	62.6 \pm 0.2	42.8 \pm 0.9	39.3 \pm 1.6	52.7 \pm 0.6	5.4 \pm 1.1	1.7 \pm 0.5	1.00 \pm 0.80	7-5	243.7 \pm 43.1	50 \pm 8
June	30.052 \pm .031	67-7	68.2 \pm 1.2	48.6 \pm 1.7	45.7 \pm 2.3	58.4 \pm 1.4	6.5 avg.	2.0 \pm 0.2	1.56 \pm 0.10	9-1	234.8 \pm 28.8	47 \pm 5
July	29.986 \pm .019	70-3	75.1 \pm 3.4	54.0 \pm 0.7	51.8 \pm 0.5	64.5 \pm 2.0	5.0 \pm 1.6	1.1 \pm 0.9	1.49 \pm 1.22	8-4	250.4 \pm 40.3	51 \pm 9
Aug.	30.044 \pm .079	70-8	72.1 \pm 1.4	52.6 \pm 0.3	49.6 \pm 1.1	62.4 \pm 0.5	5.8 \pm 0.7	2.1 \pm 0.2	2.08 \pm 0.20	11-4	232.7 \pm 34.4	52 \pm 8
Sept.	29.912 \pm .119	81 avg.	65.9 \pm 0.7	50.1 \pm 1.0	46.9 \pm 0.2	58.0 \pm 0.2	7.1 \pm 0.9	2.2 \pm 0.3	1.44 \pm 0.27	6-5	153.3 \pm 6.9	40-3
Oct.	29.923 \pm .002	87 avg.	57.6 \pm 1.0	42.9 \pm 0.5	40.2 \pm 0.8	50.3 \pm 0.8	6.9 \pm 0.3	1.8 avg.	3.11 \pm 0.15	16 \pm 1	108.9 \pm 8.5	33 \pm 3
Nov	30.163 \pm .197	87-3	45.2 \pm 4.8	34.0 \pm 5.0	31.3 \pm 4.3	39.6 \pm 4.9	7.6 \pm 0.1	1.7 \pm 0.2	0.59 \pm 2.35	12-4	34.4 \pm 16.9	13-6
Dec.	29.655 \pm .303	90 avg.	44.4 \pm 0.2	34.4 \pm 0.7	31.0 \pm 0.9	39.4 \pm 0.4	6.8 \pm 0.5	2.9 \pm 0.8	4.25 \pm 1.90	19 \pm 3	55.6 \pm 16.7	23 \pm 7
Year	29.959 \pm .018	80-2	56.4 \pm 0.6	41.4 \pm 0.6	38.4 \pm 0.4	48.9 \pm 0.6	6.7 \pm 0.2	2.0 avg.	22.69 \pm 2.46	146-19	1664.2 \pm 119.2	34 \pm 2

V.—DOMESTIC WATER SUPPLY.

In the Report for 1900, this subject was treated under the head of Protection of Local Supplies, and a full description was given of the action taken by the County Council with regard to (*a*) West Surrey supply; (*b*) the Godalming district supply; (*c*) the Sutton Company's district supply; (*d*) water analyses. This year I propose to deal with the subject by reference to the reports of the County Council and partly by extracts from the reports of the District Medical Officers of Health.

NEED FOR CONSTANT WATER SUPPLY.

KINGSTON-ON-THAMES.—This has been again before the Sanitary Committee of the County Council during the year under notice. The negotiations with the Lambeth Water Company have been successful, and the requirements of the district are now in a fair way of being complied with. The districts of Barnes and Mortlake, Malden and Esher, are also within the areas of the London Water Companies.

The domestic water supply of Barnes and Mortlake is derived from the Southwark and Vauxhall Water Company. The Medical Officer of Health, Dr. Graham Crookshank, reports :—

“In no part of the district is a constant supply provided. In some places one small cistern contains the entire supply of two cottages during the hours that the water is ‘turned off,’ and in not a few streets two families living in one house are dependent on one cistern of 40 gallons or less.”

He considers that a constant water supply is the only remedy for the present state of affairs.

The supply of Malden and Coombe is derived from the Lambeth Water Company. The Medical Officer of Health, Dr. Rashell Davison, trusts that the provision of a constant water supply which he has previously recommended, will soon be carried out.

The supply of the Esher and Ditton districts is also from the Lambeth Water Company.

The Medical Officer of Health, Dr. Senior, reports that—

“In parts of the district the supply is intermittent, and that in those parts inconvenience is felt. . . . In the poorer parts the cisterns are usually uncovered, and the water is liable to be polluted . . . Drinking water mixes with the rain water off the roofs.”. . . “The provision of a constant supply of water for the whole district is very much to be desired, and would materially influence the public health in a favourable direction.”

There has been no direct communication as yet from either of these districts—Barnes, Malden, or Esher—to the County Council on this subject.

METROPOLITAN WATER COMPANY'S REGULATIONS.

Notice of the proposed new regulations relating to cisterns and house fittings, were before the Sanitary Committee in January, 1901. These regulations, by the Metropolitan Water Companies, for the purpose of preventing waste of water in connection with domestic consumption, were very comprehensive and of such a nature as would probably entail extensive alterations. The expenditure involved thereby was variously estimated, but the sum in any case would have been very great. I was requested, with the County Surveyor, to attend the Public Inquiry in February, at the Guildhall, Westminster. Opposition to the Companies' proposals came from numerous quarters. It soon became evident that it would be impossible for the regulations to be carried, and the Inquiry was dropped.

The question of limiting water waste—in the area of Water London—which is every year becoming more important, still remains to be dealt with.

WEST SURREY WATER SUPPLY.

In continuation of the account given last year, I am pleased to be able to make a favourable report as to the above. At the time of writing I am officially informed by Mr. Hill, the engineer at the West Surrey Waterworks, that “the Company have accepted a tender for two large storage reservoirs, intake, pumps, &c., and that the work is to commence at once.”

The supply of the Woking District—to be partly drawn from the river—will now require attention.

SUBSOIL POLLUTION OF PUBLIC WATER SUPPLIES.

The County Council has been for some years continuously calling attention to the possibilities of contamination of principal sources of water supply in a manner similar to that which has been known to produce widespread disaster through dissemination of typhoid poison. In 1901 I am able to record further much needed improvement of the immediate surroundings of the Sutton wells.

In connection with this subject I may refer to the loss the County has sustained by the death of Mr. A. H. Smee, F.C.S. The deep interest he took in practical epidemiology, and the perseverance which he displayed in working out the problems relating thereto, will probably bear fruit in many directions. In the case of the Sutton water supply, the safety of which affects such a large population, his labours may be said to have already produced valuable results.

It is satisfactory to record that elsewhere in the County, *e.g.*, at Kenley, and at Artington near Guildford, the possible danger to public water supplies arising from cesspits in the chalk is receiving special attention.

At Godalming and the neighbourhood objections have been raised on similar grounds to the disposal of sewage from the Charterhouse in the Lower Greensand formation, from which part of the public supply is derived; being steadily persisted in, the removal of this possible source of pollution was finally secured.

PRESERVATION OF UNDERGROUND SOURCES OF WATER SUPPLY.

In October, 1901, this subject was partly discussed at a Conference convened by the Sanitary Institute in London, at which I contributed a paper describing what has been done by the County Council with regard to the Water Abstraction question, as already fully set out in foregoing Annual Reports. The "opposite view" was represented on this occasion by Mr. Whitaker, F.R.S., of Croydon, the well-known geologist and water expert. With that part of his argument which related to the waste of water I should entirely agree, but not, of course, with his contention for the paramount claim of what he terms "the water wanting constituencies." The solution of "the housing problem" in rural districts depends, as explained elsewhere in this Report, partly on the water question. Mr. Whitaker's argument takes no account whatever of the growth of rural artizan or wage-earning populations which it is so desirable to foster in preference to the process of massing the inhabitants of the country generally in great and often overcrowded centres.

I may here briefly mention the subject of the Tatsfield Water Supply and the Kent Water Company's Bill, which is referred to in the Annual Report of the Medical Officer of Health for the Godstone Rural District. The County Council lodged a petition in opposition to this Bill, directed chiefly against its provision respecting the supply of water in bulk outside Surrey. It is satisfactory to record that, as a result of the action of both the County and District Councils, the bulk clause was struck out by the Committee dealing with the Bill, and the supply of the inhabitants of the high-lying portion of Tatsfield parish is provided for from a source which may be said to properly belong to rural districts, whether they be of Surrey, or of the adjoining Counties.

By the courtesy of the County Councils Association, I am enabled to attach a copy of their most valuable and interesting Memorandum, which is just in print, on the whole subject of water supply protection:—

COUNTY COUNCILS ASSOCIATION.

MEMORANDUM.

The County Councils Association desire to call the attention of His Majesty's Government to the question of the protection of sources of water supply in England and Wales, and to the pressing necessity of an enquiry into the existing state of the law on the subject. In so doing they proceed on the assumption: firstly, that the question is one of great and increasing importance to the community at large; and, secondly, that the laws governing it are defective and faulty.

The Association believe that it is essential that provision should be made for a controlling authority or authorities with powers—

- (a) To prevent water being taken, without Parliamentary sanction, for sale outside a given area to the detriment of local interests;

(b) To prevent waste ;

(c) To guard against the pollution of rivers and other sources of water supply.

(a) It is clear that the right at common law of every proprietor to pump water on his own land may, under certain circumstances, be subject to abuse, if such rights are exercised for purposes for which they were never intended. For example, it has been alleged that a Water Company or Local Authority may acquire rights from one proprietor under a private agreement. In certain geological formations, such as the Bunter beds, by sinking wells deeper than those in the neighbourhood and putting down powerful pumping machinery, the water contained in underground reservoirs, which drain a very large area, may be tapped, the water so procured may be conveyed to a distance to supply a population entirely outside the area from which the water is taken, and the inhabitants of the district itself may find their water-bearing strata dried up, and may be entirely deprived of their only natural water supply without any remedy or means of protecting themselves. An instance, which has been brought to the notice of the Association, will illustrate this point. Certain urban districts were supplied by a local water company. Another company, wishing to increase its supply for an important centre outside the area of the local company, purchased land within the area, proposed to sink a well, and arranged with a railway company to carry the main along the railway line into its own distributing area. In the circumstances Parliamentary sanction was not necessary. The district authorities and the County Council, desirous of assisting them, were convinced that the action of the intruding company would deprive the inhabitants of the urban districts of water which was absolutely required for their own use. Still they thought they had no power to intervene for the protection of interests committed to their care.

(b) The evils which arise from uncontrolled waste of water in certain localities, such as the Bunter beds of Nottinghamshire and elsewhere, are perhaps more local, but, when they occur, are felt quite as acutely. It appears that until recently it was the practice of colliery companies to exclude the water contained in the permeable strata, through which the shaft passes from the pits by lining the

shaft with iron tubing. During the sinking of a new shaft it was necessary to keep down the water by pumping, and this, in many cases, dried the neighbouring wells for a time; but, when the tubing was placed in position, the pumping was stopped and the water in the soil returned to its former level. It seems, however, that at collieries now being opened up the plan of tubing is abandoned, and the practice of continuous pumping to keep the water from the pit is being adopted, a separate shaft being sunk in some instances for this purpose only. Some little time ago the Association were informed of a case in which a shaft was being sunk in a new pit for pumping purposes only; and it was asserted that, long before the coal had been reached, millions of gallons of water were being pumped to waste every day. Some strong springs which had never previously been dry, at a distance of four miles from the pit had ceased to flow, and this was attributed solely to the pumping operations of the colliery proprietors.

The above are by no means the only cases in which a local water supply may be injuriously and unjustifiably affected; and yet, as the law stands, the local authorities, to whom the ratepayers are entitled to look for protection, have no power of interference.

(c) Closely allied to the subject of the sufficiency of water supply is its *parity*. It is common knowledge that, for reasons into which it is not necessary to enter here, the Rivers Pollution Act of 1876 has been nearly a dead letter. On the other hand, the rivers boards in Lancashire and in the West Riding of Yorkshire have, working through their local Acts, done much and are doing much more every year to improve the condition of the rivers and streams in their areas; and this, it is fair to point out, in a part of England where the important manufacturing interests might be expected to offer the most strenuous opposition. The Association have repeatedly introduced into Parliament a general Bill on the lines of the local measures referred to above, but have not been able to surmount the difficulties which lie in the path of a private Member of Parliament who tries to carry a Bill of this nature.

(N.B.—*The above section applies to by far the larger part of the whole country; but not, generally speaking, to the area under the jurisdiction of the Thames Conservancy, and certainly not to the Administrative County of Surrey.*—E.C.S.)

The Association would further draw attention to the defective state of the law defining the duties of local authorities in regard to water supply. The Public Health Acts of 1875 and 1878 merely impose upon the authority the obligation of "seeing that every occupied dwelling-house in their district has, within a reasonable distance, an available supply of wholesome water for the consumption and use for domestic purposes of the inmates of the house*" but do not vest the authority with any powers to give effect to the obligation, except in a limited class of cases, in which the supply can be obtained at a cost not exceeding £13 per house. It is notorious that these duties are neglected in many of the smaller districts, and there is no power to compel the authorities to act. The result is thus expressed by the President of the Society of Engineers, in his inaugural address, delivered at the commencement of the present year:—"The indefinite character of existing legislation upon the relationship of private water companies to local authorities, and vice versa, is also a constant source of obstruction and delay to the carrying out of sorely-needed improvements in this respect, provoking much needless opposition and litigation."

The Association would venture to believe that the consideration of facts such as these, and of others which are equally well known, lead to the conclusion that some system of control is necessary; and they would urge that the question is becoming daily more pressing, when due account is taken of the increasing demand for water in consequence of a growing population, and of a greater consumption for sanitary and manufacturing purposes. The Association do not wish to express any definite opinion as to what form the control should take. This would be obviously one of the chief points for enquiry.

The Association are also strongly of opinion that a consolidation of the law governing water undertakings is called for. The law is now to be found in half a dozen or more public statutes, and in a large number of Provisional Orders and Private Acts of Parliament. Many inconsistencies exist in the provisions of these Acts; and these should be, as far as possible, removed by consolidating legislation. Another source of confusion in relation to water undertakings lies in the fact that they are at present, in varying circumstances, controlled by both Houses of Parliament by the Board of Trade,

* See Sec. 3 of the Act of 1878.

and by the Local Government Board. The lines along which these independent bodies act are not uniform, and it would not be difficult to show that danger to public health and other evils arise from uncertainty under this head.

The Association hold that, in the present state of knowledge, the matter is not ripe for decision. They believe, and they wish to impress this upon His Majesty's Government, that there is urgent necessity for an enquiry by Royal Commission or by Parliament, to fully investigate the points which have been so briefly touched upon here, and to collect information in the hope that some effective remedy may be found for the evils which admittedly exist in connection with the question of water supply in many parts of the country.

EXTRACTS FROM THE DISTRICT REPORTS RELATIVE TO WATER SUPPLY.

The following consists chiefly of passages from the Annual Reports of the District Medical Officer of Health. It will be seen that a large and increasing attention is being given to questions of water supply by many of the Authorities immediately concerned.

GUILDFORD RURAL.—The new Medical Officer of Health, Dr. Pierce, has a very valuable section on the subject of water supply. After describing the extension of the Water Company's mains to several villages needing a pipe supply, and after reporting on some suspicious wells, he makes some very suggestive remarks which apply equally to several rural districts in Surrey.

"It may here be remarked that the laying on of one of the Water Company's mains is not the only alternative when a shallow well is found to be polluted. In places where the supply from the main is available, this will usually be the most desirable. But provided the ground around the well is not very polluted, much may often be done to improve the quality of the water by cleaning out the well and rendering its sides im-

pervious to water, especially for the upper six or twelve feet, depending on the depth of the well and the nature of the soil. It is distinctly anomalous that shallow wells nowadays are made in the same way as they were a century ago, and that whilst elaborate building bye-laws are in force in many districts, there are none which regulate the construction of wells. The result of this is that they are still built of bricks without cement and with imperfect covers, so that surface water enters the well without undergoing that purification which it would obtain by a passage through several feet of soil."

WOKING.—The Medical Officer of Health, Dr. Pierce, reports that—

"The mains of the Woking Water Company extend into all the most populous parts of the district. The extensive sewerage of the district has resulted in increasing the distribution of the Company's water, as the mains have almost uniformly followed the sewers. There are still, however, many houses which derive their supply from shallow wells, even in localities where the mains are laid. In Woking village for example, at least 50 families are supplied from shallow wells; these are in most cases situated in cultivated gardens, and are of old and imperfect construction, the ground around them having in time become more and more polluted by manurial matter. It is however doubtful if the surface water becomes sufficiently purified after a foot or two (or even less in the case of open wells) of soil which it has to pass through before it reaches the well. Shallow wells should have at least the upper six or twelve feet made watertight, and the top so finished off or raised that no surface water can possibly find access."

"The necessity for private shallow wells in this district does not often exist; but in some outlying parts of the district, wells are still unavoidable. On this account it would be a very desirable step to draw up a memorandum for distribution among well sinkers, builders, and houseowners, pointing out the necessity of rendering the upper six or twelve feet of the well, according to the porosity of the soil, etc., quite impervious to water. After filtration through that depth of soil, the water should be fairly pure."

CHERTSEY RURAL.—The Medical Officer of Health, Dr. Hanslow Brind, reports that—

“The water supply to a group of 28 cottages at St. Anthony’s, Horsell, was examined and found to be impure and deficient, and steps were being taken to procure a supply from the Woking Water Company, and it is hoped soon that the necessary supply will be furnished.

“At Windlesham there has been delay in procuring a supply from the South West Suburban Company owing to the difficulty in getting the guarantees required. Fifty-nine wells have been examined, and 42 are found to yield water of doubtful quality.”

WEYBRIDGE.—Dr. Brind says in his report —

“Nearly all the houses are supplied by the West Surrey Company. The quality of this water is still subject to criticism, and is likely to be until the works now in course of preparation are completed.”

FRIMLEY.—The Medical Officer of Health, Dr. Nevill P. Cadell, reports on the monthly analyses of the District Company’s supply as being satisfactory. The fairly populous districts of Camberley and Yorktown, which were, until lately, supplied by shallow wells often yielding very impure water, and which are still partly so supplied, are gradually being furnished with the public supply, much to the advantage of the locality. Sixteen samples of shallow well water were reported upon during the year. As this is a sewered district, the need for regular pipe supply to every house is obvious.

FARNHAM.—The Medical Officer of Health, Dr. Sloman, reports that—

“Water has been laid on to 84 more houses, and there are now very few houses left in the town without a good supply for drinking and flushing purposes.”

FARNHAM RURAL.—Dr. Tanner, the new Medical Officer of Health, in his first Report gives a full description of the geology of his district in relation to water supply. This has already appeared in the County Reports published during the last few years, which were illustrated by maps and charts. The supply of Ash, Seale, the districts near Farnham, Frensham, Battscorner, and Dockingfield are separately described. The supplies of the three last-named districts are very defective, and as the

districts are in the area of the Wey Valley Water Company, the medical officer of health trusts that the council will take steps to enforce a good supply.

The Wey Valley Water Company derives its supply from wells at Itchell, sunk in the Chalk, and from wells at Hindhead sunk in the Lower Green Sand. The supply of Shottermill, near Haslemere, is from this Company. It may here be noted that, although pipe water may with great advantage be supplied in certain parts of this thinly populated and still rural part of Surrey, attention to the local wells will, as in the case of the Guildford Rural District, probably, in a great many instances, be found sufficient without taxing too much the resources of the public Companies. These Companies are the Frimley and Farnborough District Water Company, the Aldershot Water Company, the Farnham Water Company, and the Wey Valley Company.

HAMBLEDON RURAL DISTRICT.—The Surveyor, Mr. Lunn, reports upon the water supply of new houses. The remarks that have been made elsewhere in this Report as to the importance of improving the well water supplies apply in this district as well as in other distinctly rural parts of the County.

GODALMING.—The most important sentence of the Medical Officer of Health's report relates to the public water supply. It is to the effect that all possible source of pollution from the Charterhouse sewage has been removed during the year under notice.

GUILDFORD URBAN.—The new Medical Officer of Health, Dr. Mitchell, has evidently given great attention to the water supply of his town. This has been a subject of exhaustive examination by Mr. Rofe, the well-known expert.

“The boring has now been lined to a depth of about 100 ft. (at which level there is a stratum of chalk marl), with a 4 inch tube, and this has been sealed at the bottom with cement to shut off all water above this level. Chalk marl may be regarded for practical purposes as an impervious layer, and therefore, if sufficiently sealed, there should be no communication between the waters above and below this marl.

"On several occasions samples of the water were taken from the bore hole and submitted to Prof. Sims Woodhead and Dr. Dupre for bacteriological and chemical analyses. Various pumping tests were made both at the well and at the bore hole, and were considered sufficiently favourable to justify application to the Local Government Board for leave to borrow money for more extensive works, by which it is expected that a yield of not less than a million gallons at a time would be obtained.

"Although it is probable that the chalk gathers water, not only from its exposed outcrop, but also from its deeper surface from other soils, it is evident that this drift water, as it is termed, gets perfectly filtered before it reaches the well at Mill Mead."

Dr. Mitchell concludes that the proposed supply, coming from a depth of over 300 feet, will be free from any communication with surface water, and will be a pure chalk water. It is hoped that the work will be far advanced during the present year, 1902. The tests applied last year proved, in Mr. Rofe's opinion, that the town was uncomfortably near a shortage of supply, and that the head of water in the river was too low to drive the turbines. There was insufficient reserve of power to raise the necessary amount of water to the reservoirs.

DORKING URBAN.—Dr. Williamson, the new Medical Officer of Health, reports on a joint examination made with me in 1901, on the gathering ground from which the supply of the town is derived. The following are the chief characteristics of each source:—

- (A) *Tower Hill Well.* This well, the oldest source of supply and the only one situated in the District, was sunk in 1873, and is lined to a depth of 100-ft. with 18-in. of brick in cement. There are several houses in the neighbourhood of the well, but all are drained to sewers, which are frequently examined. The reports upon the water show it to be free from organic impurity, but they state that it is suspicious on account of some variety in its inorganic constituents. The water passes partly to a small reservoir and is unfiltered, and partly through filters to the upper reservoir.
- (B) *The Redlands.* The gathering grounds consist of private woods, without habitations of any kind; the water, which is rather peaty, is carried by two underdrains to two sand filters, constructed for the removal

of the iron present in this water. (c) *The Rookery*. This source is similar to that of the Redlands. There is one house upon the estate, of which the drainage was carefully examined in November, with a view to the discovery of any possibility of contamination of the water thereby, with satisfactory result. (d) *Castle Gardens*. The well, situated near the river Mole, is 24-ft. deep, lined throughout with cast-iron cylinders and extended by means of two bore-pipes to a further depth of 65-ft. The gathering ground is entirely park-land. The water is pumped to filters at Tower Hill, which were constructed in the previous year to intercept the sand which is from time to time "blown" into the well. The filtered water is stored in the reservoir.

With regard to the quality of the water, that from the last three sources appears to be quite free from any suspicion of liability to pollution, while the probability of contamination of that from the Tower Hill well must be remote. The quantity, however, to be obtained from the present sources has not proved sufficient during dry seasons, and in the summer an auxiliary supply had to be taken from the springs from which the swimming bath is filled. Towards the close of the year the Water Company began to sink a new well in the neighbourhood of the bath. The water is in each case obtained from the Lower Greensand.

He reports in the same terms to the Dorking Rural Authorities on the results of the joint inspection that I made with him in 1901. He also reports on 13 samples of water that he analysed chiefly from wells at new houses where application for a water certificate was being made, and the action taken on his advice. The Dorking Water Company supplies the majority of houses at Holmwood, at Westcott, and at Pixholme. Mickleham is supplied by the Leatherhead Water Company, who also supply a part of the Parish of Effingham, where, however, there are still cottages mostly dependent upon the rainwater collected from the roofs, and consequently liable to be short of water in the summer months. The supply in the other parishes is entirely from local wells or springs.

LEATHERHEAD.—There are several private sources of supply of a satisfactory kind from deep wells in the chalk formation. In the town itself the Company's water mains will be sure to follow the sewers as elsewhere in newly-sewered districts.

EPSOM RURAL.—Dr. Williamson states that the Sutton Water Company now supplies practically the whole of the parishes of Banstead, Cheam, Cuddington, and Ewell. The Lambeth Company supply the village of Chessington, and a number of houses in Cheam and Cuddington. The Leatherhead Company supplies the parishes of Ashted, Fetcham, Bookham, Stoke and Cobham, and the hamlet of Malden Rushett, in the Parish of Chessington (30 houses already furnished), and will soon, it is hoped, supply a part of Oxshott, which is at present furnished with well water, which Dr. Williamson condemns as dangerous. The East Surrey Water Company supply the Parish of Headley, where 49 houses were reported on last year.

“At Ashted, Cobham and Ewell, there are still a number of cottages which obtain their supply from local wells, but the necessity of providing water for flushing purposes when the connections with the new sewers can be made, will compel owners to lay on water from the Company's mains.”

EPSOM URBAN.—The Engineer, Mr. Young, has effected an important saving of water by the use of Deacon's meters for the detection of waste. This has been reduced to one-tenth of what it was two years ago. Dr. Williamson points out that the saving effected thereby has led to a most important result, for it has facilitated a constant supply at a period when the water in the chalk formation was lower than in previous years. Nearly all the houses in the district are furnished with the town supply.

CARSHALTON.—Dr. Williamson is now able to report that every house except two is supplied from Sutton mains.

SUTTON.—The new Medical Officer of Health, Dr. Bower, makes in his Report two very important statements. The one relates to the diminished risk of pollution from the cesspools in the chalk. During the year under notice, the number of these within a quarter of a mile of the Company's wells were reduced to five. There are, however, still as many as 47 cesspools in use in the chalk formation in this district. The other statement refers to the hardness of the Sutton water. Dr. Bower says :—

‘As a matter of economy it would be a great boon to the consumers if the Water Company could see their way to take means for reducing the

hardness of the water, thereby saving the frequent necessity for the cleaning of boilers and hot water pipes, and lessening the amount of soap required for washing purposes."

REIGATE BOROUGH.—Dr. Jacob in his Report mentions the abandonment of certain private wells which he found to yield impure water, and the substitution of the public supply. He comments upon the favourable analytical reports of the Kenley water; but he also mentions that the periodical reports from Mr. Otto Hühner, of the Reigate water, showed that it varied considerably in its character.

REIGATE RURAL.—Dr. Jacob reports on twenty samples of water sent to him from Nutfield, Burstow, Charlwood, Smallfields, Buckland, Leigh, Horley and Brockham, some of which were fairly good, but others impure or of doubtful purity.

GODSTONE RURAL.—Dr. Oldman refers to the examination of the supplies from public companies and to nineteen examinations from private sources.

"The water supply of Tatsfield is reported upon as insufficient during dry seasons, owing to its dependence upon rain water collected in tanks. The matter however is in a more promising way of being solved by the efforts being made to have it included in a Bill which is being promoted by the Kent Water Company."

WATER ANALYSES.

The monthly reports on the condition of the Metropolitan Water Supply by the Official Water Examiner have been supplied to me throughout the year. They include a series of analyses undertaken on behalf of the Local Government Board by Dr. T. E. Thorpe, F.R.S., together with those made on behalf of the Director of the Water Companies by Sir William Crookes, F.R.S., and Professor Dewar, F.R.S. Information is thus regularly conveyed to me respecting the water supply of those districts in the Administrative County which are within the area of either the Southwark and Vauxhall or the Lambeth companies.

I have also received copies of analyses relating to public water supplies from the following local Water Companies, Corporations, or District Councils.

WATER COMPANIES.

West Surrey	...	Source of supply,	River Thames.
Sutton	...	„	„ Chalk formation.
Leatherhead	...	„	„ Chalk formation.
Chelsham	...	„	„ Chalk formation.
East Surrey	...	„	„ Chiefly Chalk and partly Lower Greensand formation.
Limpsfield and Oxted		„	„ Lower Greensand formation.
Dorking	...	„	„ Lower Greensand formation.
Cranleigh...	...	„	„ Lower Greensand formation.

CORPORATIONS.

Guildford...	...	Source of supply,	Chalk formation and Drift.
Godalming	...	„	„ Lower Greensand formation.
Reigate	...	„	„ Lower Greensand formation.
Richmond	...	„	„ River Thames, per Southwark & Vauxhall Co.'s main; Petersham well: Chalk formation; and deep well in Oolite.

DISTRICT COUNCILS.

Epsom	...	Source of supply,	Chalk formation.
Weybridge	...	„	„ River Thames, per West Surrey Co.

It only remains to say that all matters relating to the above receive my careful consideration, and that I made a special report to the Sanitary Committee with regard to the sources of water supply of the Dorking Company. I had also arranged for a special series of analyses under my own observation, for a particular purpose, in the autumn of 1901, but I was prevented carrying out the scheme by the pressure of other official engagements.

Finally, I must acknowledge with best thanks the valuable co-operation of the Thames Conservancy Board on all matters relating to the possible pollution of water supplies. Through the representative for Surrey (Charles Burt, Esq., J.P., C.A.), I have always been able to secure the co-operation of the Board's official staff. To take one instance only of the advantage derived therefrom. I may mention the necessity in the summer time for a constant supervision of the river banks close to the intakes of the Water Companies (in order to guard against possible pollution from gipsy encampments), the exercise of which supervision is materially facilitated by our mutual action.

VI.—THE SANITATION OF DWELLINGS AND HOUSING OF THE WORKING CLASSES.

In reporting on this subject I propose, as on a previous occasion, to give a synopsis of the work, with notes of my own interspersed.

The district reports show, as might be expected, an increasing appreciation of the importance of this subject. It may also be observed that in most cases additional time and attention can now be devoted to it by the Local Authorities, inasmuch as the elementary requirements of house sanitation—namely, the domestic water supplies and means of drainage—are or have been satisfactorily dealt with.

It will be convenient to divide the districts of Surrey into—

- (1) Those which are metropolitan or suburban to London ;
- (2) Those in rural Surrey which are distinctly urban ;
- (3) Those which are rural in character.

In order to gain a clear appreciation of the work of the “Inspector of Nuisances,” or Sanitary Inspector (as I prefer to term the office), a definite statement is required :—

(a) Under the Public Health Act—

- (1) The number and kind of inspections actually made ;

(2) The number and kind of nuisances actually abated in consequence of those inspections ;

(3) The number of houses improved and the extent of the improvements effected.

(b) Under the Working Classes Act—

(4) The number of houses so unfit for habitation as to require demolition ;

(5) The number of houses unfit for habitation, but which have been rendered fit by structural and other improvements ;

(6) The number and kind of overcrowding nuisances abated.

This information is afforded by some of the reports, but there are others which are still defective in this respect.

A few of them are notably so, no particulars at all appearing in print, or such as are given being too scanty and indefinite to allow of comparison or comment. The “inspections” and “nuisances” are often recorded in a different manner, and the figures relating to them convey but little meaning. At Richmond and Croydon Rural and several other districts the work of this Department is immediately under the Medical Officer of Health, and the necessary information is fully given in the pages of the respective reports. But, on the other hand, the Council may sometimes be referred in the report to “the statistics” relating to health nuisances without any explanatory remarks. This is unsatisfactory ; but I may remind the Council that the County is now divided into more workable districts, and that improvement may therefore be confidently expected next year.

SANITARY DISTRICTS OF SURREY.

LIST OF THE STAFF.

(a) Combined.

Reigate U. & R.—Dr. Jacob. Guildford R. & Woking—Dr. Pierce.

Chertsey U. & R.	Dr. Hanslow-Brind.	Dorking U. & R.	Dr. Williamson.
Weybridge		Epsom U. & R.	
Walton		Leatherhead	
		Carshalton	

(b) Separate.

Kingston Borough	...	...	...	Dr. Beale Collins.
Richmond „	...	...	...	Dr. Crocker.
Croydon R.	...	...	...	Dr. Fegen.

DISTRICT.	INSPECTOR.	DISTRICT.	INSPECTOR.
Barnes ...	Mr. Grylls.	Frimley ...	Mr. Uren
Wimbledon	„ Johnson.		(Surveyor).
Malden ...	„ Simmons.	Godalming	„ Tribe.
Ham ...	„ Warner	Sutton ...	„ Kain.
	(Surveyor).	Esher ...	„ Henderson
Molesey ...	„ Stevenson		(Surveyor).
	(Surveyor).	Caterham	„ Martin.
Egham ...	„	Hambledon	„ Simmonds.
Farnham...	„ Cass	Godstone...	„ Barralet
	(Surveyor).		(Surveyor).
„ R.	„ Patrick.		

SUBURBAN.

BARNES.—Dr. Crookshank describes the houses of the working classes as follows :—

“There are some very old cottages, surrounded by a little ground, which afford cheap and wholesome accommodation to those who are content with them. Others, of more recent date, but built before the time of building bye-laws, are in ‘terraces,’ ‘rows,’ ‘places,’ and ‘squares’ or ‘allcys,’ and are, perhaps, the most undesirable in the district. Dark and insufficiently ventilated, they are surrounded by no proper open space, and some are without forecourt or back yard. They are occupied by the most uncleanly part of the population, and furnish a large proportion of the patients of the Isolation Hospital. They are, however, solidly built, and, for technical reasons, it is but seldom that any can be pronounced ‘unfit’ for habitation in the legal sense. It is to these houses that the working man with a large family is too often compelled to turn, and it is in them that poverty sometimes compels the introduction of lodgers, and hence legal overcrowding.”

“Houses for the working classes that have been built under the bye-laws of the Council are few in number. ‘Double tenements’ are being built with rapidity, it is true, and many more are proposed. These, however, do not become occupied by the working classes, the overlying social strata providing to the landlord persons who are desirable tenants, and are yet content with such accommodation as they can procure at an inclusive rent of ten, eleven, or twelve shillings a week.”

“During 1901 the workmen’s dwellings erected under the auspices of the District Council were completed. All are now occupied, and the applications from would-be tenants have proved considerably in excess of the dwellings available. It is open to question, however, whether these buildings—excellent as they are—in any way solve the really urgent problem in the housing of the poor, inasmuch as the tenants are mostly persons with small families who are earning good wages.

“In Mortlake private enterprise has provided a street of workmen’s dwellings, built on the ‘flat’ principle, and let at moderate rentals. The construction of these dwellings is interesting, as the floors are of concrete and the walls simply plastered. It is at present too soon to say how far

these and other distinctive characteristics will prove attractive to tenants. But the size of the rooms is certainly ample, and the buildings themselves are advantageously broken into blocks and not constructed in terraces."

Five houses were repaired and seven cases of overcrowding were discovered and dealt with.

Staff: Mr. Grylls.

RICHMOND.—This District has been a pioneer in the matter of providing houses for the working classes. On p. 47 of the Report of the Medical Officer of Health, under the head of the "Housing of the Working Classes Act, Part III.," it is stated that the number of houses built by the Corporation under this Act is 126; they are in a sanitary condition, and all are occupied. In Section 4 of the Report of the Medical Officer of Health, p. 41, the ordinary sanitary work of the Health Department is clearly and systematically described. From such a description one is able to ascertain what is actually being done for the improvement of the sanitary circumstances of the working classes, as they are termed.

Staff: The Medical Officer of Health, the Chief Inspector (immediately under the supervision of the Medical Officer of Health), Mr. W. Parsons, and the Assistant Inspector, Mr. G. T. Norman.

WIMBLEDON.—A detailed account is given of the action taken with regard to certain houses, Nos. 2 to 11, Thornton Road, and 4 to 26, South Place, which were reported upon "as in a state so dangerous or injurious to health as to be unfit for human habitation." The notices served by the orders of the Council not having been complied with, magisterial proceedings ensued. Evidence for the prosecution was given by the Medical Officer of Health, the Surveyor, and the Sanitary Inspector; evidence for the defence was given by several architects and surveyors, and also by a medical expert. It was admitted that the houses were unfit for habitation, and the Counsel for the defence undertook that they should be made habitable, and the Bench adjourned the summons for three months for that purpose.

The drains of 129 houses and premises have been entirely reconstructed and made to stand the water test; manholes, &c., were made for inspection and cleaning purposes. This kind of work has been most efficiently

carried out under the immediate supervision of Mr. Johnson, Sanitary Inspector.

A considerable portion of the Report is devoted to the subject of house refuse collection and disposal, as to which complaints have been received. Unfortunately the burning of refuse by the destructor is not possible, owing to the extensive alterations and building which has been carried out in connection with the Electric Light Works. When these are completed it is to be hoped that complaints such as those above mentioned will be a thing of the past.

Overcrowding nuisances discovered and dealt with, seven.

The work of the Inspector is highly commended by both the District and County Medical Officer of Health.

Staff: Mr. Johnson and assistants.

KINGSTON.—Dr. Beale Collins reports that there is no very serious evil in connection with the housing of the working classes in this town beyond the economic one of high rents. This, he says, leads to undue over-occupation; but the cases of overcrowding have been few in number and rapidly abating.

Only four cases of overcrowding were discovered and dealt with.

Staff: Mr. Pearce (part time only).

ESHER.—Dr. Senior reports:—

“I regret to say that there are many houses occupied by two families in the district, which leads to insanitary conditions, and is most prejudicial to the health of the occupants, especially of the children.

“A house-to-house inspection last summer of many small cottage properties brought vividly to my notice how utterly incompatible the condition of even comparatively modern cottages—in respect to construction, ventilation, storage of water and food—is with the principles of modern sanitation which are considered absolutely necessary for the maintenance of health.”

389 houses were inspected, and 36 of them were improved. One case of overcrowding was discovered and dealt with.

Staff: Mr. Henderson (Surveyor and Inspector).

MALDEN AND COOMBE.—Dr. Rashell Davison reports that the complaint of high rents by workmen is great.

Staff: Dual office now severed ; Mr. Simmons appointed Inspector.

HAM.—Dr. Donald, Medical Officer of Health, reports on 24 visits relating to the ordinary sanitary condition of houses. This very small district is easily brought under the immediate supervision of the Medical Officer of Health, who is able to give an account of the sanitary condition of every house.

MOLESEY.—Dr. Knox points out that the housing of the working classes is a question of considerable importance on account of the large number of navvies employed in the new Waterworks and extensions in the locality. This undoubtedly leads to overcrowding which is not often brought under the notice of the officials. He reports on one house in East Molesey and another in West Molesey, which were condemned as unfit for human habitation.

Staff: Mr. Stevenson (Surveyor and Inspector).

URBAN.

CHERTSEY.—Dr. Hanslow Brind's Report shows that the primary sanitary requisite for this district is the provision of a proper main sewerage system for the removal of excreta and liquid filth. The subject is absorbing the whole attention of the Council, and it is hoped that this essential requirement will now be met without any further unnecessary delay. There is little to be reported under the head of the "condition of the houses," except that there are four registered lodging houses in this district which allow for the accommodation of 117 persons. Visits have been made by day and night, and several improvements have been made where the bye-laws had been violated. Lime washing as required by the Public Health Acts was done during the months of April and October. Eight cases of overcrowding were discovered and dealt with.

Staff: Mr. Plumbley, Sanitary Inspector.

EGHAM.—Dr. Woodforde reports that five dilapidated and overcrowded houses were dealt with.

Staff: Mr. Freeman (Surveyor and Inspector).

FARNHAM.—Dr. Sloman reports that he inspected four common lodging houses in July, and made a report in August. He found that improvement had been made in the sanitary arrangements of all of them as a result of previous inspections. The number of persons allowed in each room was fixed and the details entered in the register.

“The Surveyor has continued his house-to-house inspection as far as his time allowed, and has in this way inspected West End Estate, Mount Pleasant, East Street, Park Lane, part of Castle Street, West Street, and Downing Street.”

Dr. Sloman has specially inspected Factory Yard and West Street adjoining, and has recommended the removal of certain old and almost useless buildings, which by their position almost entirely shut out light and air from the dwelling houses and add very materially to their insanitary state.

As regards the accommodation for hop-pickers more effort has been made to secure the decent separation of the sexes, and the premises are cleaner. Dr. Sloman recommends that the disinfection of these places should be attended to immediately after the departure of the hop-pickers.

Details of Inspectors' work not given.

FRIMLEY, including CAMBERLEY.—Dr. Cadell reports that there have been plans of new buildings submitted, but that notwithstanding the large amount of building in progress very little has been done for the working classes—there is a great demand for cottage accommodation, and land cannot be obtained at a low figure.

GODALMING.—The Report of the Medical Officer of Health for 1901 contains no important information on this subject.

GUILDFORD.—Dr. Mitchell reports that Part III. of the Housing of the Working Classes Act has been adopted, but that no municipal scheme has yet been entered upon.

The number of houses repaired was 22, and six cases of overcrowding were dealt with.

Staff : Mr. Tribe, Sanitary Inspector.

DORKING URBAN.—Dr. Williamson reports that there is only one common lodging house, which was inspected by himself and the Sanitary Inspector, and was found to be kept in a clean condition, and in compliance with the bye-laws.

House-to-house inspections were made in St. Martin's Place, North Street, Ansell Road, and Dene Street, with the result that a large number of houses were white-washed and cleansed, water was laid on to 44 hand-flushed closets, and structural works were carried out to cure dampness of walls and other defects.

With regard to overcrowding in 56 houses, in which Dr. Williamson recorded the number of inmates, the average number of persons per house were 4.5, and that in two houses only were there more than eight persons; during the year five cases of overcrowding were abated. He also made representations under Section 30 of the Housing of the Working Classes Act, 1899, that two houses were unfit for human habitation; one of these was closed by the owner, and in the other case the Council entered into communication with the owner as to the most effective way of dealing with the conditions complained of. Three other cottages, which have been dealt with in the previous year, were pulled down.

Staff: Mr. Somers Mathews (Surveyor and Inspector).

LEATHERHEAD.—Dr. Williamson reports that a house-to-house inspection was begun and will be continued. Visits to each house will be necessary as soon as the connection with the main sewers can be made. An opportunity will be thus incidentally afforded of obtaining a complete record of their condition with a view to the general improvement of the cottages, many of which are in old and in bad repair. There is only one registered lodging house, which was always found to be kept in a good condition when visits were made either by Dr. Williamson or the Inspector.

Staff: Mr. Salkield (Surveyor and Inspector).

EPSOM.—Dr. Williamson reports that, accompanied by the Inspector, he made a house-to-house inspection of cottages on the Common and in the East Street District with the result that the interior of many houses were cleansed, structural works were carried out to prevent

dampness of walls, defects in the drainage were made good, and nuisances from overcrowding, from the keeping of animals, and from other causes were abated.

With regard to overcrowding, he found that in 95 cottages of which he recorded the number of inmates, as the result of personal inquiry, the average number of persons per house was just under five; the cottages contained, in the majority of cases, four rooms, and in six of the houses there were more than eight inmates, but in three only did there appear to be serious overcrowding, which was abated in each case.

"Closing orders were obtained in the case of three cottages which had been represented to be unfit for human habitation, and as the orders were not obeyed the Council took further proceedings, and a penalty of £5 was imposed upon the owner, who then pulled down the cottages.

"There are no registered common lodging houses in the district, but inspections were made of the buildings which have been added to some of the inns for the accommodation of the class that frequent such establishments."

Staff: Mr. Capon (Surveyor and Inspector).

SUTTON.—Dr. Bower reports that there is a considerable demand for houses of a somewhat lower rental, and that the majority of those existing generally range from about 8s. per week upwards.

"This causes a tendency of the occupiers to sub-let. Many of the lodgers are only temporary residents or remaining in the house but a few weeks. The District Council have, at his suggestion, adopted bye-laws for houses let in lodgings, providing for: (1) the registration of such houses; (2) the provision of sufficient air space in sleeping rooms; (3) access of sanitary officers; (4) the provision of sufficient w.c. accommodation; (5) periodical lime washing and general cleanliness."

Eight cases of overcrowding were discovered and dealt with.

Staff: Mr. Kain, Sanitary Inspector.

CARSHALTON.—Dr. Williamson reports that—

A house-to-house inspection of Wandle Mount and its vicinity was made by the Inspector and himself, with the result that the interiors of many of the cottages were cleansed throughout, structural works were

carried out to cure dampness of walls, and other nuisances were abated. Systematic inspections and re-inspections were also made in other parts of the district, leading to the improvement in the drainage and general condition of a large number of houses, especially at Carshalton-on-the-Hill. He made representations under Section 30 of the Housing of the Working Classes Act, 1890, that three cottages were unfit for human habitation, and two of these were subsequently pulled down, and the third was closed by the respective owners. Other cottages, which had been represented in the previous year to be unfit, were also dealt with ; a row of eleven single-storied cottages in Nightingale Road were closed by the owner, three cottages at the foot of Park Hill were pulled down, and the Council obtained orders from the Magistrates under Section 98 of the Public Health Act, 1875, empowering them to carry out works of drainage and repair at three other cottages, the cost of the works to be declared private improvement expenses.

One case of overcrowding was discovered and dealt with.

Staff: Mr. Gale (Surveyor and Inspector).

CROYDON RURAL.—The Medical Officer of Health (Dr. Fegen) reports under the Housing of the Working Classes Act that during the year 19 notices were served, and in four instances houses were closed with a view to rebuilding, and in the remaining 15 instances they were thoroughly repaired and cleansed.

Dr. Fegen also gives a summary of the inspector's work during the year, from which it will be seen that no less than 7,777 visits were paid for the purpose of sanitary improvements. It is important to note with regard to this district that for several years now its sanitary organisation has been remarkably complete. The whole of the work is under the immediate supervision of the Medical Officer of Health, who is practically responsible for all the details. Consequently, the summary of the Inspector's work is even more valuable in the case of this district than elsewhere in the County. The very large number of inspections recorded may be taken to indicate the care and vigilance of the Inspectors in carrying out their duties. They evidently do not wait for nuisances to be complained of, by which time they may have already wrought a considerable amount of mischief.

Six cases of overcrowding were discovered and dealt with. These six cases were by no means all that came within the knowledge of the Medical Officer of Health, but the others were not in his judgment of a kind that it was desirable to interfere with under all the circumstances of his district.

Staff: The Medical Officer of Health, and Inspectors White, Rabbetts, and Payne.

REIGATE.—Dr. Jacob, Medical Officer of Health, reports on the question of providing houses for the Working Classes under the Act of 1890, that the Council decided to erect cottages for the employees on a site on Earlswood Common, in accordance with plans submitted by their Surveyor. He made a systematic inspection and re-inspection of houses in various parts of the district, and reported the defects which were thus discovered to the Sanitary Committee. The report of the nuisances dealt with under the Public Health Act does not appear in connection with the report on the health and general sanitary condition of the Borough.

CATERHAM.—Dr. Davey, Medical Officer of Health, reports that a systematic inspection of the district has been made by himself and the inspector, and that defects were found in 188 houses and premises, but no details are given in this report.

Staff: Mr. Martin (Surveyor and Inspector).

RURAL.

CHERTSEY.—The information given insufficient for comment or comparison.

Staff: Mr. Durrant (Surveyor and Inspector).

WEYBRIDGE.—This is an almost entirely residential district.

Staff: Mr. Crawshaw (Surveyor and Inspector).

WALTON.—Dr. Brind reports that it was found necessary to make a representation to the Council under the Housing of the Working Classes Act, Part II., that three dwelling houses situated in Hersham Ward were found in such a condition as to be unfit for human habitation.

Staff: Mr. Kinch, Sanitary Inspector.

FARNHAM RURAL.—Dr. Tanner, Medical Officer of Health, reports that there is a great and rapidly increasing demand for cottages in various parts of the district, but no sufficient supply.

Staff: Mr. Patrick, Sanitary Inspector.

HAMBLEDON.—Dr. Hall reports that there is a great want of house accommodation, especially for the working classes. What there is is good of its class; there is plenty of out-door space and the surroundings are fairly clean in character. He refers to some inspections that he has made along with the County Medical Officer of Health.

Two houses were closed and three cases of overcrowding were discovered and dealt with.

Staff: Mr. Simmonds, Sanitary Inspector.

GUILDFORD RURAL.—Dr. Pierce reports on the vexed question of bye-laws for the more rural parts of the district as recommended for consideration. They ought not to be too stringent, but to allow sufficient space at the rear of cottages for the disposal of sewage and house refuse, so as to avoid sewerage if possible.

He further reports upon a house-to-house inspection at Ripley during the summer, the water supply being specially attended to.

“Not a single empty house was found, but there were only five cases of overcrowding. The utility of gardens for the disposal of refuse was very noticeable.”

He also reports upon the severance of the dual office of Surveyor and Inspector.

Staff: Mr. Shrives, Sanitary Inspector.

WOKING.—Dr. Pierce reports that—

A systematic inspection of Woking village and Kingfield was made in May, with a view more especially to find out what houses were still unconnected with the sewers. This being the old part of Woking, the sanitary conditions generally were not expected to be equal to those of the more modern part.

Thirty cottages were found without any means of drainage whatever, and twenty houses were already connected or were about to be connected with the sewers. The remainder had cesspools for the sink drains, and usually pail closets or privies. A considerable number of the above, however, have since been connected with the sewers.

As many as 50 families still derive their water supply from shallow wells. These wells, especially in gardens where cesspools are in vogue, are always open to suspicion.

Five cottages were found in a dilapidated condition, as well as without any means of drainage. The owner has since been called upon to put the cottages into habitable repair or to close them.

The majority of the cottages have some amount of garden wherein they can dispose of their house refuse. Some, however, have none, with the result that accumulations of refuse existed in the yards. Even in the case of those cottages with small gardens, the excuse is often advanced that it is only at certain times of the year, when the ground is not under cultivation, that the tenants are able to utilise it for burying the house refuse. For these reasons a system of public scavenging is much needed. The presence of refuse matter, without proper receptacles, in close proximity to dwellings, is deleterious to health, for when damp the stuff ferments and gives off noxious vapours, and when dry is blown about by the wind and is inhaled by the inmates.

One house was closed, and two cases of overcrowding were discovered and dealt with.

Staff: Mr. Ablett, Sanitary Inspector.

DORKING RURAL.—Dr. Williamson reports that—

A general inspection of each parish was made by him, extending to a house-to-house inspection in parts of the parishes of Capel, Effingham, and Newdigate, and at Pixholme in the Dorking Rural Parish. In several instances certificates were given for the cleansing of the interiors of houses, and the attention of the Inspector was called to the nuisances that were noted.

With regard to overcrowding he found that in 147 cottages, of which he ascertained by personal inquiry the number of inmates, the average

number of persons per house was 4·5 ; the cottages contained four rooms in the majority of cases, and in five houses, or 3½ per cent., there were more than eight persons living ; but in three of these only did there appear to be injurious overcrowding, which was abated in each case.

He refers to the severance of the dual office of Surveyor and Inspector, Mr. Fuller being now appointed Sanitary Inspector.

Staff: Mr. Fuller, Sanitary Inspector.

EPSOM RURAL.—Dr. Williamson reports that—

A general inspection was made by him in each parish in the district, extending, in certain parts of Ashted, Banstead, the Bookhams, Ewell and Headley, to a house-to-house inspection. Certificates were given in a few cases for the cleansing of the interiors of houses, and in many others one or more rooms were cleansed by the owners in compliance with a request by letter. The attention of the Inspector was called to nuisances and defects that were noticed.

With regard to overcrowding, he found that in 238 cottages, of which he recorded the number of inmates as the result of personal inquiry, the average number of persons per house was 4·5. The cottages contained, as a rule, four rooms, and in 14 of the houses, or about 6 per cent., there were more than eight inmates. During the year 10 cases of overcrowding were dealt with.

Dr. Williamson further mentions that in December he reported to the District Council, in consequence of the increasing duties that would be cast upon Mr. Wooldridge, in his capacity as Surveyor, it was impossible for him to give the requisite time to carry out his work as Inspector with efficiency. It has now been decided to make a second appointment.

Staff: Mr. Wooldridge, Surveyor and Inspector.

REIGATE RURAL.—Dr. Jacob reports, that of four houses certified as unfit for human habitation, two were closed by order of the Magistrate, and two were repaired. There is no reference to a systematic inspection. The office of Sanitary Inspector is a "combined one."

GODSTONE.—Dr. Oldman, Medical Officer of Health, reports that—

Advantage has not been taken of the powers of the Housing of the Working Classes Act to any great extent, owing to the dearth of cottages

in those parts of the district where it would be mostly applicable, for fear that the closure of any, even temporarily, should make the condition of the others worse as regards overcrowding. The number of inhabited houses in 1891 was 2934, in 1901, 3707, and the number of persons per house in 1891 was 5.02, but in 1901, 4.95, which shows an improvement in that regard. Overcrowding, however, exists without doubt in many "Localities."

14 cases of overcrowding were reported.

Staff: Mr. Thomas Barralet (Surveyor and Inspector).

From a perusal of the foregoing carefully prepared synopsis it will be gathered that in most of the town districts of the County a fair amount of attention is now given to "house sanitation." In the Rural Districts the state of affairs is not so satisfactory. But there are signs of progress. In the districts for which Dr. Williamson is responsible personal inspection by the Medical Officer of Health as a preliminary step is being followed by the reorganization of the sanitary inspection department under his advice, and this will surely in turn lead to improvement in the sanitary condition of cottage property.

This section of the Report may appropriately be concluded by referring once more to the work of the Sanitary Inspector as distinct from that of the Surveyor, with whose appointment the office is frequently conjoined.

The Reports for Croydon Rural and Surbiton may be taken as typical examples of good sanitary administration. In the former a summary is given of the work of this department, from which it will be seen that no less than 7,777 visits have

been paid to premises which required improvement. The Medical Officer of Health, Dr. Fegen, again bears testimony to the extreme care and accuracy and unceasing vigilance which each of the three Inspectors displays in carrying out his arduous and very often extremely unpleasant duties. At Surbiton, Mr. Nesfield reports to Dr. Coleman for the sixth year in succession on the sanitary inspections he has made, together with the particulars of nuisances abated and improvements effected in the district in consequence of such inspection. This includes attention to overcrowding, and the abatement of nuisances connected with small properties, by works of paving, &c. It further includes the drainage improvements of houses of all classes; a list of such houses and the rateable value of each occupy three whole pages; all the regulated trades, such as dairies, and the workshops in the district are under close supervision.

In both these districts the separation of the offices of Surveyor and Inspector has led to excellent results. It is in consequence of the prominence given to the Sanitary Inspector's work and to the fact that the severance of the dual office of Surveyor and Inspector has been continuously urged in the Annual Reports for the County, that progress has been slowly but steadily made in this direction.

At Guildford Rural, Dr. Pierce reports that in consequence of the decision of the Council in April, 1901, to separate the office of Surveyor and Inspector, a distinct appointment of a Sanitary Inspector was made. At Dorking Rural, Dr. Williamson also reports the appointment of a Sanitary Inspector. In both these instances the need for the appointment became apparent as soon as it was made.

At the Conference of the Medical Officers of Health of the County held in December, 1901, I gave a résumé of the Reports of the County Council on sanitary administration generally and the appointment of Sanitary Inspectors in particular. The following are extracts from the résumé now referred to: -

“Sanitary administration in its comprehensive aspect has occupied a prominent position in the Summary of Reports annually issued by the County Council. In the prevention of disease priority has been properly accorded to considerations chiefly medical. The nature of the medical appointments; the area, population and requirements of the several districts; the suitable combination of districts for certain purposes—*e.g.*, hospital accommodation; the arrangements for inquiries and reports on outbreaks, and the direction of preventive measures, generally occupied attention at first. That the improved condition of the County is in great measure due to the representations of the County Council is shown by the extensive changes that have taken place in the last ten years, not only in sanitary conditions, but in administrative work generally; such changes being attended by results which are held to have amply repaid the trouble and expenditure necessary to bring them about. . . . As regards sanitary inspection, it is generally better that this work should be directed by the Medical Officer of Health, for upon that official devolves the responsibility of inquiring into the conditions which affect, or threaten to affect, the public health in the district. In practice a Medical Officer of Health draws up a scheme in conjunction with his Authority or Committee, with the object of systematically dealing with health nuisances in the order of their importance or urgency. The decision as to

the measures to be taken for the removal or alteration of such injurious conditions rest ultimately, of course, with the Courts of Law; but obviously it depends, in a large measure, on the opinion of responsible medical officers. Consequently, in dealing with nuisances—*i.e.*, standing conditions more or less dangerous to health—the advice and experience of the Medical Officer of Health is essential from the first.”

The representations of the County Council have already proved efficacious in this particular direction. Beginning several years ago with Croydon Rural and at Surbiton, the improvement in administration has steadily progressed. Progress would probably have been more rapid but for the breaking up of the Districts under the Local Government Act of 1894, and the additional difficulty which thus arose in the way of making separate appointments of Sanitary Inspectors.

In some small districts, such as Weybridge and Carshalton, there happen to be very capable Surveyors, and it may be conceded that the plan of combining the offices of Surveyor and Inspector in one is not without advantages; but generally speaking, the improvement in house sanitation, which immediately affects the working classes, progresses much more rapidly where there is a special Sanitary Inspector. It has been suggested that one way of meeting the difficulty of the small districts might be the appointment of the same Inspector jointly for two or more districts, as in the case of some of the appointments of the Medical Officer of Health.

The Conference had before them a table showing the area, acreage and population of the Districts, the names of the Inspectors and the nature of their appointments. From this it was seen that in 12 out of 24 of the Urban Districts

special Sanitary Inspectors are now appointed. There is only one large District, namely, Kingston, with a population of 34,000, which has only the part time of an Inspector; and the rest of the Districts so provided are small—that is to say, with a population of 10,000 or under.

The Rural Districts are still in a backward state. But both at Godstone and Epsom the subject has been lately discussed, and at Reigate it is just now attracting public attention.

BUILDING BYE-LAWS, &c.

In connection with this important section of the Annual Report, I may again remind those interested in the “housing problem” that attention to domestic water supplies, drainage, sewerage, &c., is the basis of reform. Another subject of fundamental importance is that of the Bye-laws which regulate the conditions under which new dwellings may be erected.

In accordance with the usual custom the reports take notice of the proceedings which affect the future sanitary condition of the town or district in an important degree. The number of new buildings, and the legal proceedings taken for the breach of the bye-laws; the number of streets sewerred, paved, metalled, flagged, channelled, and lighted, &c., is duly set forth. This work, so far as it relates to distinctly Urban Districts, is essential to their sanitary welfare, but it is immediately under the Surveyor, and does not as a rule call for special comment by the Medical Officer of Health.

It is different, however, with the bye-laws which relate to rural dwellings. This is a subject which will demand more and more attention from those who are directly interested in the housing question in the country.

It should be mentioned that under this heading the Medical Officer of Health for the Guildford Rural District reports that "his Council decided to extend the operation of their new bye-laws, which had been adopted in 1900 for portions of Godalming Rural Parish, so as to apply to Artington, Stoke and Pirbright; but that the Local Government Board replied to their application by forwarding a copy of their own new bye-laws for the consideration of the Council. The Council, however, considered that these were unsuitable for the parishes in question, and decided to proceed with their own application."

The essential points that seem to require consideration in the future are:—(a) The protection of local water supplies against copious depletion (especially in Surrey and Kent, where the encroachments for the needs of the Metropolis are likely to be most felt during the next few years); the storage of rain-water, and the use of subsoil water drawn from properly constructed wells, such as those in the Bagshot sands and gravel formations, where such supplies can be used with safety as well as economy; (b) the provision of fair-sized gardens attached or belonging to rural cottages; (c) the attention to nuisances and pollution of the water courses, which, if neglected, lead to great expense by necessitating the establishment of a main sewerage system for districts in which the population is small and widely scattered.

In other respects the bye-laws for purely Rural Districts need not be anything like so stringent as those adopted for Urban Districts; otherwise the cost of construction of cottages precludes their being let at rents which the poorer rural inhabitants can possibly afford.

VII.—MORTUARIES.

The great relief afforded by the establishment of proper mortuaries (some of the worst evils arising from overcrowding in towns being thereby prevented) has been referred to in more than one Annual County Report. The attention of the District Medical Officers of Health has been directed thereto, and it is satisfactory to record that progress is being steadily made. The reports for Guildford, Wimbledon, Richmond, Surbiton, Malden, Carshalton and Epsom refer specially to the subject. The following table gives information in reply to questions which I have addressed to Medical Officers of Health in the chief centres of the population of the County. The information is supplemented by Mr. Roumieu, the County Coroner, who has in the matter of mortuary provision, as in many other ways, shown great practical interest in affairs that concern the public health :—

TOWN OR DISTRICT.	SITUATION OF MORTUARY.	BRIEF DESCRIPTION : AVAILABILITY FOR NEIGHBOURHOOD.
Barnes	Near Mortlake Cemetery	Well planned and appointed establishment, with special arrangements for cases of death by drowning, Coroner's Jury room, &c., &c.
Richmond	Site fixed upon.	The site having been settled application for a loan for building, &c., will be made at an early date. (See Report, Medical Officer of Health, p. 48.)
Wimbledon ..	Cemetery.	Recent improvements. (See Report, Medical Officer of Health, p. 21.)

TOWN OR DISTRICT.	SITUATION OF MORTUARY.	BRIEF DESCRIPTION : AVAILABILITY FOR NEIGHBOURHOOD.
Kingston-on-Thames	Union Street (adjoining Baptist Chapel), in centre of the town.	Well appointed in some respects but not in others. Sufficient if for the town only and no Coroner's cases. Has been used for neighbourhood. Medical Officer of Health of opinion that infectious cases should be taken.
Surbiton	.. Adjoining the District Council Offices.	Mortuary and post-mortem rooms separate buildings. Sufficient for the district. Not available for neighbouring Authorities.
Esher	.. .. Old Parish Churchyard.	A lean-to shed. Only used for the reception of dead bodies found in the district.
Malden	.. .. No provision.	The want of provision commented upon by the Medical Officer of Health in Report.
Molesey	.. .. Yard of the District Council Offices.	One - roomed building. Walls and floor impervious materials. Fairly good. Will be improved shortly.
Chertsey	.. .. 1. Next "Fire Station," Guildford Street. 2. Cemetery, Addlestone	Neither establishment quite complete.
Egham	.. .. Englefield Green Cemetery.	Sufficient for Coroner's requirements.
Walton	.. .. The Cemetery.	Very useful.
Weybridge	.. .. The Cemetery.	Sufficient for neighbourhood.
Farnham	.. .. No provision for the town.	Well-appointed mortuary at the workhouse.
Frimley	.. .. Near Railway Station.	Fairly well appointed. Probably not available for neighbouring authorities.
Godalming..	.. .. Behind the Chapel of the Old Cemetery.	Fairly well appointed. Not available for neighbouring Authorities.

TOWN OR DISTRICT.	SITUATION OF MORTUARY.	BRIEF DESCRIPTION AVAILABILITY FOR NEIGHBOURHOOD.
Guildford	Site selected for new mortuary.	See Report of Medical Officer of Health, p. 19.
Stoke	Cemetery.	Available for Worplesdon.
Woking	Opposite the Goldsworth Schools, Goldsworth Road.	A one-room building. Not very suitable. Presumably for the Urban District only.
Dorking	The Cemetery.	Under the Burial Board. No complaint of insufficiency. Available only for Dorking Town and Parish.
Leatherhead ..	No provision at all.	It appears that in case of necessity bodies have to be received in a room at a public-house. Mortuary badly wanted.
Epsom	The Cemetery.	Recognised to be inadequate. The District Council is applying to the Local Government Board for a loan for a new building. (See Report of Medical Officer of Health).
Sutton	The Cemetery.	One room. Very inconvenient.
Carshalton ..	Near Cottage Hospital.	New mortuary mentioned in Report of Medical Officer of Health.
Croydon	1. Mitcham Churchyard. 2. Bandon Hill Cemetery	Sufficient for their immediate neighbourhoods only. In the opinion of the Medical Officer of Health additional accommodation required for other parts of the district.
Reigate	Reigate Cemetery.	One-roomed building fairly well appointed. No Coroner's room. Not available for neighbouring districts.
Caterham	The Cemetery.	Recently built. Quite convenient and sufficient. Available for the whole of Caterham.

VIII.—MAIN SEWERAGE, OUTFALL AND DISPOSAL WORKS.

Three years ago a comprehensive account was given of the main sewerage and outfall works constructed or improved in the "Administrative" County since the creation of the County Council, and the more extended powers of the Thames Conservancy Board. There was, at that time, practically no unsewered Urban District in the County except Chertsey. Several large villages, such as Cranleigh (where sewerage had become necessary) were also partly provided. The population at that time on the sewerage system amounted to about 300,000, or about two-thirds that of the whole County. Since the publication of that Report in 1899 sewerage and outfall works have been or are being provided for a number of small towns or big villages and residential districts. The Woking works have come fully into operation; the Cranleigh, Nutfield, and Cheam new works have been completed; the Bramley, Stoke, Cobham, and Ewell works have nearly been completed; there are also works at Haslemere which have been carried out under the Parish Council; the Leatherhead, Ashted, and Carshalton outfall works have been completed, and the connections have been or are being made; the Oxted, Limpsfield, Godstone and Betchingley works are in progress.

Considerable further addition has therefore to be made to the population on the sewerage system. In almost every case mentioned there was really no alternative to sewerage. But it does not necessarily follow that in the case of thinly populated districts this system is by any means desirable if it can be avoided. In practice it sometimes becomes forced upon such districts by the necessary action of the River

Purification Authorities. It must, however, be obvious that sewerage is often an unsuitable method for disposing of the slop water and liquid refuse of rural cottages. Probably its necessity would never have arisen if the nuisances arising from the improper disposal of the refuse had been attended to in an early stage. The establishment of new villas, with only a little bit of garden at the back, on the plan of suburban residences, sometimes imposes a sewerage system upon these purely country districts. It is to be hoped that this subject will continue to engage the attention of the Rural District Councils more and more, especially in connection with the bye-laws relating to new buildings and the appointment of Sanitary Inspectors.

THE BACTERIA SYSTEM, SEWAGE DISPOSAL.

This is now in operation in a large number of districts. During the year under notice extensions of the system are reported at Reigate, Dorking and Epsom.

Guildford, Sutton and Carshalton are among the works scheduled for observation by the Royal Commission on Sewage Disposal.

SEWERAGE EXTENSIONS.

The most important of those noted in 1901 relate to the prevention of surface or subsoil water pollution.

In the Guildford Rural District the County Council's representations proved effectual at Charterhouse, the sewage of which was no longer allowed to pollute the subsoil close to a source of water supply. The sewage is now taken into the Godalming system.

In the Croydon Rural District the pollution of the chalk area has been further obviated by an extension of the sewerage at Sanderstead and Kenley.

Elsewhere, as at Artington, the pollution of the subsoil is engaging attention, but has not yet been satisfactorily dealt with.

The condition of the Wandle and the water courses in connection therewith have been further improved by the drainage of some of the mills into the Croydon Rural system, the other mills being provided for in the Carshalton system.

Further extensions of works are recorded at Malden, Merstham, Epsom (on the Common and Horton), and Weybridge (Holstein Estate).

Caterham continues to be without any sewerage system. The Medical Officer of Health reports that nearly 3,000,000 gallons of cesspool stuff, at 6s. 7d. per 1000 gallons, were removed to two new sites, one on the hill and the other in the valley.

The scavenging requirements of Whyteleafe have engaged the special attention of the Sanitary Committee of the County Council, as well as the Local Authorities.

At Guildford, Weybridge and several other places, the question of providing dust destructors is under consideration.

In a number of districts, such as Dorking, Guildford and Weybridge, nearly all the premises requiring connection have now been dealt with. In others, such as Leatherhead and Carshalton, they are in rapid progress. In some places, such as Carshalton and Molesey, enlargements of the main scheme have already been planned; in others, such as Frimley, schemes for the improvement of the outfall works are under consideration. At Surbiton the condition of the Tolworth sewage outfall works is commented upon at great length by the Medical Officer of Health; the observations that he makes in his Report, which extend over several pages, will no doubt receive the very careful attention of the District Council,

IX.—NUISANCES.

Several of the reports describe in detail the action taken by the officials under the Local Sanitary Authorities for the prevention of nuisances which are not only prejudicial to the public health, but are in some instances a serious discomfort and annoyance to the occupants of all classes of dwellings. On this account alone it is desirable to refer to these "Nuisances" in the annual reports of the sanitary proceedings throughout the County. Specific mention of these nuisances is necessary for other reasons. The proceedings they involve cause a large amount of trouble to the authorities, and often lead to a considerable public expenditure. Moreover, they sometimes affect business such as that of "scavenging" or "manuring," from which a certain amount of nuisance is inseparable.

I should specially mention in this place that certain old cottages at Robinhood (Malden), which have given rise to frequent nuisances during the last ten years, have been condemned and demolished; and that the Royal Albert Orphanage, which has been from time to time referred to in these reports as containing overcrowded dormitories, is now no longer in that condition. On the recommendation of Dr. Cadell and myself the beds are now placed at a distance of at least two feet apart. It may also be observed that an extra exit has been provided in the event of an outbreak of fire.

The following notes are as brief and concise as it is possible to make them. They refer to the worst nuisances reported, many others, too numerous to mention, being omitted :—

POLLUTION.

Barnes—A scheme for the cleansing and purification of Barnes Pond was carried out by the advice of the Medical Officer of Health.

Offensive deposits on the Middlesex side of the River, opposite Barnes Terrace, the smells of which are said to be perceptible in High Street, has been made the subject of representation to the contiguous Sanitary Authority.

In the summer of 1901 the Medical Officer of Health and the Inspector gave evidence in support of a summons against the London and South Western Railway Company for failing to abate a nuisance arising from the presence on the sidings on Barnes Common of trucks loaded with offensive manure. The nuisance and injury to health was proved, but the summons was dismissed, the Bench holding that it was not proved that the defendants kept the trucks on the sidings longer than was necessary for the purpose of their business. The Medical Officer of Health adds that since the hearing of the summons the nuisance has been sensibly less.

Malden.—The Beverley Brook has been freed from pollution, and the great nuisance arising therefrom prevented. The large accumulation of liquid filth in the gravel pits, and the nuisance arising therefrom, has been stopped.

At *Reigate*, *Carshalton*, and *Sutton* nuisances from gas works, paper mills, and sewage discharges were abated.

SCAVENGING.

Several special nuisances are described in the reports of the Medical Officers of Health and Sanitary Inspectors relating to scavenging and disposal of refuse, and the need for destructors at Wimbledon, Esher, and Epsom Rural, Leatherhead and Dorking.

Instances where the authorities have taken up the scavenging are specially reported. Leatherhead is the only place where tub closets are still to be dealt with on a large scale. They will of course be abandoned when the drainage scheme comes into operation.

In the *Chertsey District* the scavenging of Bagshot, Windlesham, and Byfleet has been undertaken by the authorities.

At *Woking* the Medical Officer of Health makes a suggestion arising from his house-to-house inspection as to the advisability of extending the scavenging to Woking Village and Knaphill. Several cases of infectious disease occurred in Sunnyside Terrace, Knaphill. The extra cost of scavenging would be well repaid in the improved health of the district.

BRICKFIELDS.

The nuisance from brickfields, especially in the summer months, is reported at Esher, Epsom, Earlswood (Reigate), and Ashtead.

In one case at Esher, the proprietors of the brickfields agreed to abate the nuisance by not bringing refuse into the district during the summer months. The Medical Officer of Health reports that they have loyally carried out their agreement.

At Earlswood Common the refuse was covered over with dry earth, and no more offensive stuff was allowed to be brought there.

At Ashtead, a Justice's Order for abatement was obtained, and not being complied with a penalty of £3 was inflicted. The offenders undertook not to deliver such offensive stuff in future.

PIGGERIES.

The nuisance from the pig farm at South Lane, Malden, has been abolished. Twenty-two nuisances from piggeries at Ash, Farnham and Seale, arising from accumulations of camp wash, are about to be dealt with.

MANURE.

At Farnham the Medical Officer of Health makes mention of a nuisance which is very common in rural districts, arising from the use of very foul-smelling manure on agricultural land. When there are houses in the vicinity it is well known that cases of diphtheria are frequently connected with these insanitary conditions.

X.—DAIRY SANITATION.

This subject was reported on at considerable length last year. It was then stated that in some districts in the County excellent work was being achieved. There has still been much good work in progress, especially in the Urban Districts; but there appears, unfortunately, to have been some suspension of activity in some Rural Districts towards the latter part of last year, no doubt in consequence of the pronouncement of Dr. Koch on the subject of tuberculosis, human and bovine, at the Congress held in August. This result, although not unexpected, is much to be regretted. The public interest had been thoroughly aroused on the subject of tuberculosis. Under the stimulus thus afforded much-needed improvements were being pushed which would have effect not only in the prevention of tuberculosis among cattle, and probably thereby diminishing its prevalence among human beings, but would also assist in the reduction of many other diseases which are specially fatal to infants and children.

URBAN DISTRICTS.

BARNES.—The Medical Officer of Health reports :—

“There are now only two registered cowkeepers in Barnes, and in Mortlake only one. The cowsheds are frequently inspected, and their condition is usually as satisfactory as the construction of the buildings allows.”

* CROYDON.—The Medical Officer of Health reports :—

“There were 66 premises registered under the Dairies, Cowsheds and Milkshops Order at the end of 1901. They are situated as follows :—

Addington	...	1	Morden	...	2	Sanderstead	...	3
Beddington	...	8	Merton	...	10	Wallington	...	10.”
Coulsdon	...	13	Mitcham	...	19			

* Usually classed for the purpose of this Report with the Urban Districts.

Appended to the Report of Dr. Fegen, the Medical Officer of Health, is a tabulated statement of the condition of the farms, dairies and milk-shops in 1901. This statement is of a most exhaustive character, and is quite a model of its kind. It shows the general sanitary condition of the premises and the health of the residents and employees. The structural condition, drainage, proportion of window space to floor space, ventilation, and general cleanliness, including the disposal of manure, general cleanliness, how the cattle are stalled and the number of stalls, the number of cattle, the cubic space per head, precautions to prevent fouling of milk, health and condition of the cows (including the number of recent deaths and the cause thereof), are all recorded. There is a further statement with regard to the water supply (1) for household and dairy purposes, and (2) for the cattle. There are notes as to the destination of the milk, and under the heading of general remarks additional and valuable information is afforded, including an account of the improvements immediately effected in connection with a systematic inspection.

This District, though "Rural" in a Local Government sense, is chiefly Urban in character, and is usually included in these reports among the Urban Districts.

WIMBLEDON.—The Medical Officer of Health reports that there were 57 premises registered under the Dairies, Cowsheds and Milkshops Order at the end of 1901, being an increase of 6 on last year. One cowkeeper and five dairymen are purveyors of milk.

"The structure, ventilation, drainage, and sanitary arrangements of the new cowsheds registered are on the most modern principles, and comply in every respect with the Council's regulations."

Inspector Mr. Johnson.

SURBITON.—The Medical Officer of Health reports:—

"Only on one occasion (in February 1901), was a case of tubercular disease found by the Veterinary Inspector. He then reported that out of an inspection of 304 cows one cow was affected with tubercular disease, and another with Mastitis of a suspicious character. These cows were appropriately dealt with,* and all subsequent reports were and are favourable."

* Dr. Coleman explains in a note to me that in neither case was any milk drawn from these cows after the disease was discovered.—E.C.S.

"There were 15 persons registered under the Act ; the average number of cows kept by these persons is 250 ; they are all under periodical inspection by the Council's Veterinary Inspector."

"During the year three milkshops were redrained, and the drains of one cowshed were repaired ; three yards attached to milkshops, and the floor of two dairies have been repaved ; two cowsheds have been provided with better means of lighting, and three cases of overcrowding in cowsheds have been dealt with."

Inspector, Mr. Nesfield.

ESHER AND THE DITTONS.—The Medical Officer of Health reports :—

"There are twenty registered cowsheds and five dairies with milkshops. These are kept under inspection, and it is seen that they are properly white-washed and cleansed in accordance with the regulations."

MALDEN AND COOMBE.—The Medical Officer of Health reports that one cowshed has been given up ; the two remaining ones are under inspection.

CARSHALTON.—All the premises are inspected by the Medical Officer of Health himself, and they comply in the main with the regulations. The necessary repairs, paving and improvements of the lighting were provided in two cowsheds.

SUTTON.—The Medical Officer of Health reports :—

"There was a periodical inspection of cows. One was found affected, and notices to discontinue the milk supply were willingly complied with, and the animal was disposed of."

In three instances the Medical Officer of Health found the cowsheds dirty and the owners were put under notice.

EPSOM.—The Veterinary, Inspector, Mr. Skilton, found four cows affected with tuberculosis, and these were destroyed. The cowsheds were found by the Medical Officer of Health to be mainly in compliance with the regulations.

LEATHERHEAD.—The Medical Officer of Health found that the premises did not comply with the regulations.

FRIMLBY.—This district is essentially of a rural character, though possessed of "Urban District" powers of Local Government. The Medical Officer of Health reports:—"The cowsheds are far from satisfactory. In many cases they do not even comply with the Council's existing regulations, which are inadequate compared with modern requirements. A proposed new set of regulations has been re-drafted and considered by a Sub-Committee. They will probably be issued shortly, and will enable improvements to be made."

FARNHAM.—The Medical Officer of Health reports that the condition of the cowsheds and the water supply thereof was unsatisfactory.

WEYBRIDGE.—Seven premises are reported upon as having been inspected, and three which were in a defective condition were remedied.

WOKING.—In March, 1901, the Council reappointed Mr A. C. Wild, M.R.C.V.S., to examine cows and premises registered as cowsheds by the Dairies Order of 1885, twice during the year, and at any other time whenever it appeared that any cow was suffering from tubercular disease of the udder, with a view of giving a Certificate under the Order. Mr. Wild reported in May that he had examined 273 cows, 21 cows showed hard quarters, a few the result of direct injury, but mostly the result of a non-infective mammitis. One cow, by reason of its emaciated condition, was condemned as unfit to supply milk for human food. He added: "I find a further improvement in the general sanitation of the cowsheds. More attention is paid to keeping the udders and hind parts clean, but in some instances there is still room for improvement. The contamination of the milk is frequently brought about by the dropping of filth from the body of the cow in the process of milking."—*Annual Report of the Medical Officer of Health.*

RURAL DISTRICTS.

GUILDFORD.—The Medical Officer of Health reports with regard to this District (which includes the Rural Parishes of Ockham, Ripley, Wimborough, Compton, Worplesdon, Stoke, Clandon, Horsley, Shere and Albury)—

"The condition of the cowsheds is most defective in the matter of lighting. In a great many cases there are no permanent means of

lighting ; when the doors are closed, as they usually are in winter, the sheds are practically in darkness."

EPSOM.—The Medical Officer of Health reports with regard to this District (which includes the Rural Parishes of Cobham, Bookham, Fetcham, Ashted, Headley, Ewell, &c.)—

"The Council had entered into negotiations for the appointment of a Veterinary Inspector to examine cows with tubercular disease, when Dr. Koch's paper decided them not to proceed further."

In this same district the Medical Officer of Health reports that he visited a number of cowsheds in various parts, and found that in several instances buildings were used that were unfit for the purpose, and that the regulations which were adopted in 1899 were not being complied with.

REIGATE.—In this District (the area of which extends to the Sussex borders) no further steps were taken, and it is also significant that there are no reports on this subject from the following districts, which, as their names mostly indicate, cover the chief part of pastoral Surrey :—

CHERTSEY	...	No report.	HAMBLEDON	...	No report.
EGHAM	...	"	DORKING	...	"
FARNHAM	...	"	GODSTONE	...	"

From the above synopsis it will be seen that where proper supervision is maintained there much needed sanitary improvements are effected. These sanitary improvements, which I am glad to note in most of our Urban Districts, do not relate only to the highly important subject of the prevention of tuberculosis, whether amongst humans or cattle, but also to the wide-spread diffusion of illness, often of a fatal character, amongst infants and young children by means of the polluted state of the milk. On the other hand, the prevailing neglect of this important sanitary matter is only too apparent in the purely country districts. When we see the number of very dark and dirty cowsheds in rural districts we know for certain that a large part of the milk

which finds its way into towns contains a mixture of excremental and other filth, which must be a fruitful source of disease. Such milk may be more injurious to health than that which is simply adulterated by the addition of a small percentage of water.

I am,

My Lords and Gentlemen,

Your obedient Servant,

EDWARD C. SEATON, M.D.

County Medical Officer of Health.

May 30th, 1902.

*To the Chairman, Aldermen and **M**embers of the
Surrey County Council.*

INDEX.

	Page.		Page.
Aids to Diagnosis	18	Conferences	5
Analyses of Waters.....	37	Consultations	5
Artington, L.G.B. Inquiry ..	8	County Medical Officer of	
Barnes, Dairy Sanitation	70	Health, Expert Advice	
L.G.B. Inquiry	8	of, as to—	
Sanitation of Dwellings ...	43	Ambulances	6
Vital Statistics	9	Diagnosis	3
Barometer	19	Diphtheria	6
Birth Rates	9	Disinfection	18
Bye-laws, Building	59	Notification	18
Camberley, L.G.B. Inquiry ..	8	Phthisis	17
Carshalton, Sanitation of		Sanitary Inspectors	57
Dwellings	49	Sanitation of Houses	58
Vital Statistics		Sewage Disposal	7
Caterham, Sanitation of		Smallpox	3
Dwellings	51	Typhoid.....	6
Vital Statistics	9	Water Supplies	7 & 22-26
Census	8	Vaccination	3
Charterhouse School Water		Information as to District	
Supply	25	Medical Officer of Health	
Chertsey, Vital Statistics ..	9	Appointments	5
L.G.B. Inquiries	8	Cranleigh, Outfall Works ..	64
Drainage	7	Croydon Rural Sanitary Ad-	
Chertsey Rural, Vital Statis-		ministration	56
tics	9	,, L.G.B. Inquiry	8
Cloud	19	Sanitation of Dwellings	50
Cobham, L.G.B. Inquiry	8	Vital Statistics	9

INDEX—*continued.*

	Page.		Page.
Death Rates, General.....	9	Farnham Rural, Sanitation of	
„ Infant	10-12	Dwellings	52
„ Zymotic	12	Vital Statistics.....	9
„ Phthisis	15	Frimley, Sanitation of Dwell-	
„ Respiratory	9	ings.....	47
Diphtheria, Beddington	6	Vital Statistics.....	9
„ Redhill	6	Godalming, Vital Statistics..	9
„ Richmond	6	District Water Supply	25
„ Surbiton	6	Godstone, Sanitation of Dwell-	
„ Wimbledon	6	ings.....	54
„ Woking	6	Vital Statistics.....	9
District Water Supplies	30-37	Greenlane Hospital.....	6
District, New Medical Officers	42	Guildford, Sanitation of Dwell-	
Dorking, Sanitation of Dwell-		ings.....	47
ings.....	48	L.G.B. Inquiry	8
Vital Statistics	9	Vital Statistics.....	9
Dorking Rural, Sanitation of		Guildford Rural, Sanitation	
Dwellings	53	of Dwellings	52
Vital Statistics	9	School Inspection	15
Egham, Drainage, Expert		Vital Statistics.....	9
Advice	6	Ham, Outfall Works	7
Vital Statistics	9	Sanitation of Dwellings ...	46
Epsom Rural, L.G.B. In-		Vital Statistics.....	9
quiries	8	Hambleton, Sanitation of	
Sanitation of Dwellings....	54	Dwellings	52
Vital Statistics	9	Vital Statistics	9
Epsom Urban, Sanitation of		Haslemere, Water Supply....	7
Dwellings	48	Infant Mortality ..	10-12
Vital Statistics	9	Infectious Diseases	3
Esher, Sanitation of Dwellings	45	Isolation Hospitals	3
Vital Statistics.....	9	Kingston-on-Thames, Sanita-	
Farnham, Inspection of Out-		tion of Dwellings	45
fall Works.....	7	Vital Statistics.....	9
Sanitation of Dwellings....	47	Leatherhead, L.G.B. Inquiry	8
Vital Statistics.....	9	Sanitation of Dwellings ..	48

INDEX—*continued.*

	Page.		Page.
Vital Statistics.....	9	Sanitation of Dwellings	44
Local Government Board In-		School Inspection	13
quiries	8	Vital Statistics	9
Malden, Outfall Works	7	River Conservancy	39
Sanitation of Dwellings ...	46	Sanitary Districts	42
Vital Statistics.....	9	„ Staff	42
Merton, Outfall Works	7	Sanitation of Dwellings.....	40-60
Meteorology of Surrey, 1901 ..	19-21	School Inspection	13-15
Military Camp, Inspection of	7	Sewage Disposal	65
Milk Supplies, Sources of, and		Sewerage Extensions	65
Supervision	70-75	Shalford L.G.B. Inquiry	8
Molesey, Sanitation of Dwel-		Stoke L.G.B. Inquiry	8
lings	46	Sunshine	20
Vital Statistics.....	9	Surbiton, Sanitation of Dwel-	
Monthly Notification Returns	6	lings	56
Mortuaries	61-63	Sewage Disposal	66
Nuisances	67-69	Vital Statistics.....	9
„ Brickfields	69	Sutton, Sanitation of Dwel-	
„ Manures	69	lings.....	49
„ Piggeries	69	Vital Statistics ..	9
„ Pollution	68	Temperature.....	19
„ Scavenging	68	Typhoid.....	6
Nutfield, L.G.B. Inquiry	8	Vaccination	3
Phthisis Prevention	16	Wallington Meteorological	
„ Notification	18	Observations	21
„ Disinfection	18	Walton - on - Thames, Sani-	
Population of County	9	tation of Dwellings.....	51
Preventive Measures	2	Vital Statistics	9
Rainfall	19	Water Analyses	37
„ Monthly Returns....	6	Water Supply, Expert Advice, &c. 6	
Reigate, Sanitation of Dwel-		„ Companies, &c.	38
lings.....	51	„ Constant	22
Vital Statistics.....	9	„ County Councils'	
Reigate Rural, Vital Statistics	9	Memorandum	26-30
Richmond L.G.B. Inquiry ..	8	„ District Reports	
		on	30-37

INDEX—*continued.*

	Page.		Page.
Water Supply, Metropolitan		L.G.B. Inquiries	8
Regulations	23	Outfall Works	7
Preservation..	25-26	Sanitation of Dwellings....	44
Subsoil pollution	24	Vital Statistics.....	9
West Surrey ..	24	Wind	20
Vital Statistics.....	9	Woking Sanitation of Dwell-	
Wimbledon, Day Nursery....	12	ings.....	52
Hospital	6	Vital Statistics	9

LONDON :

PRINTED BY HENRY KEMSHEAD, Limited,
156, Westminster Bridge Road, S.E.

