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BOROUGH OF CHELTENHAM.

ANNUAL REPORT

OF THE

SANITARY CONDITION,

ETC., ETC.,

OF THE

BOROUGH OF CHELTENHAM,

FOR THE YEAR 1897,

BY

J. H. GARRETT, M.D.,

LICENTIATE IN SANITARY SCIENCE, UNIVERSITY OF DURHAM.
DIPLOMATE IN PUBLIC HEALTH, UNIVERSITY OF CAMBRIDGE.

MEDICAL OFFICER OF HEALTH.

"Salus Populi Suprema Lex."

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WORK DONE, 1897 :—

BOROUGH OF CHELTENHAM.

Public Health Committee:

MR. COUNCILLOR G. O. BENCE (CHAIRMAN).

MR. ALDERMAN G. NORMAN.

MR. COUNCILLOR M. DAVIS.

MR. COUNCILLOR W. G. GURNEY.

MR. COUNCILLOR S. LENTHALL.

MR. COUNCILLOR H. G. MARGRETT.

MR. COUNCILLOR J. V. MOLES.

MR. COUNCILLOR H. WAGHORNE.

TOWN CLERK—MR. E. T. BRYDGES.

BOROUGH SURVEYOR—MR. JOSEPH HALL.

Medical Officers' Department:

CHIEF INSPECTOR OF NUISANCES—A. E. HUDSON.

ASSISTANT INSPECTOR—J. H. LONG.

2ND ASSISTANT INSPECTOR—E. JONES.

MEDICAL OFFICER OF HEALTH—J. H. GARRETT, M.D.

To the Chairman and Members of the Public Health Committee.

GENTLEMEN,

I HAVE the honour to present you with my Annual Report for the year 1897.

The year that is just past has not been particularly eventful in regard to new or momentous questions of Public Health interest. The anxiety experienced in the previous year, when the neighbouring town of Gloucester was visited by a very serious and fatal epidemic of Small-pox, and the short distance intervening between the bounds of that city and of our own borough rendered imminent the spread of the infection hither, was fortunately not repeated last year by the recrudescense of the complaint. There appears to have been no case of Small-pox in Gloucester since the epidemic died out, which is more than a year ago, and since then no further case has appeared in our town. As this disease has frequently been known to recur in the season following that of an epidemic, the total disappearance of Small-pox from Gloucester and its vicinage is a matter for the sincerest congratulation. To the vaccination and re-vaccination, which during the course of the epidemic was so very thoroughly done in Gloucester, is due, at least in great part, this further immunity.

The health of Cheltenham was on the whole very good last year. The death-rate for the year was well below the average for the last ten years, and there was not an excessive number of cases of infectious disease notified, and but comparatively few deaths amongst those that were heard of. If disease and death are natural to human kind, and not to be prevented, they may notwithstanding, to some extent be stayed and controlled, and the efforts that have been made in Cheltenham to exercise a staying and controlling power have borne fruit, and may be expected to bear more.

The attention of the inspectors, and of myself, was again largely directed to the betterment of dwelling houses, and the notices that during last year were served and carried out have resulted in a further great improvement of many hundreds of houses in regard to the establishment of a good water supply, flushing apparatus, re-laid house drains, and renewed sanitary appliances and amendments of various kinds, so that the end of the year finds us in a far better condition than the beginning. With the staff of workers which we have at command, it would not be possible to show a better summary of work done than that to be found in the report. Many of the other subjects which brought business to the Health Department, and occupied your time upon committee days will also be found to have received notice in the pages which follow.

Mr. R. Tyrer has been appointed Borough Meteorologist, and his report for last year will be found appended.

I have to acknowledge, as usual, the ready assistance I have received in the conduct of my duties from yourselves and from my fellow officers.

I am, Gentlemen,

Your obedient servant,

J. H. GARRETT.

February 21st, 1898.

VITAL STATISTICS.

SUMMARY.

Area of Municipal Borough			4,677 acres.
Rateable Value			£270,312
Present Population			49,000
Population 1891 Census			47,514
Persons per acre in the Borough			10·4
Average number of Persons per house 1891 Census			4.9
Death-rate 1897	per 1,000 living inhabitants		15·8
Average Death-rate for previous 10 years	,,	,,	16·9
Zymotic Death-rate 1897	,,	,,	·91
Average Zymotic Death-rate for previous 10 years	,,	,,	·99
Birth-rate 1897	,,	,,	21·3
Average Birth-rate for previous 10 years	,,	,,	22·1
Infant Death-rate (under 1 year old)	per 1,000 births		151
Infant Death-rate Average for previous 10 years	,,	,,	145

THE BOROUGH OF CHELTENHAM.

This beautiful town owed its devolopment and first reputation to its natural mineral waters. When the custom of the fashionable world to annually repair to the "Spas" to be found in England, at Cheltenham and elsewhere, gave place to the attractions of foreign travel, which had been made easy by the introduction of railways and steamboats, the patronage of Cheltenham declined somewhat ; a considerable number of the houses in the handsome terraces and squares were wanting tenants, house property depreciated in consequence, and the town wore an air of neglect and depression. Thanks however to evolution of fresh interest, and the

reawakening of public enterprise, Cheltenham has entered upon a new era of existence, and its former reputation bids fair to be eclipsed by that of its future. Whilst a few years ago the population of the town showed a tendency to a diminution, it is now undoubtedly on the increase. The unlet houses have become occupied, and new houses are rapidly springing up to cover the vacant sites. The depression has vanished like a mist, and everybody who comes here must be struck with the air of prosperity which now pervades our streets. The main influence to which this revival is to be traced is connected with the several Educational Establishments of Cheltenham. The older and larger foundations of this kind, owing to the vigorous personalities and marked talents of those whose services have been fortunately secured to head the control of them, have grown greatly in magnitude and popularity, and together with the numerous schools and colleges of more recent creation, have brought great honour to Cheltenham, and caused its name to be uttered and heard in many places near and far. During the last seven years the Cheltenham Town Council has been energetic in instituting various improvements. It adopted a useful forward policy which only found a check when it was proposed to build an establishment at some considerable cost with the object of reviving the use of the mineral waters. The building of new municipal offices, which are very badly required, was also included in the scheme, which however, met with considerable opposition, and the Local Government Board declined to give its sanction to the borrowing of the money required to carry it out.

A difference of opinion exists here as to the desirability and profit to the town of attempting to revive the use of the mineral waters. The subject may be viewed in two distinct ways. In the first, the idea would be to make Cheltenham a resort for invalids, who would come or be ordered here for hydropathic treatment. This would be bringing the place into rivalry with Harrogate, Buxton, Bath, and continental places of the same sort, and to be successfully effected must require a capital expenditure of from £50,000 to £100,000, as well as a large current expenditure for advertising and working expenses, which

for many years, if not for always, would exceed the direct income. The second idea may be merely to provide a place where the several kinds of mineral water could be obtained for the use of the local residents and visitors, with a room in which to sit whilst drinking the water, and a bath or two of one sort and another for use upon occasion. Such a minor provision might be looked upon as a slight addition to the attractions of the town without being in any way a leading one.

The Sanitary conditions of Cheltenham have received great attention latterly, and year by year great improvements in the drainage, water supply, etc., have been effected, and every appliance calculated to improve the health of the district has been introduced. The condition of the town in these respects compares favourably with many other residential towns in the country, the latter having stood still whilst Cheltenham has advanced. As a pleasant and healthful place of residence and recreation Cheltenham has no superior, and hardly a compeer.

Population.

A DOUBT existed as to the correctness of the last census enumeration, which gave a population equivalent, with the since added districts, to 47,514. For the purpose of ascertaining the number of children of school age in connection with the carrying out of the law of compulsory education, a count of the population was made by the Corporation last year, when the numbers were found to be 48,944, including 7,641 children between the ages of five and fourteen years. This indicates an increase of 1,430 since the year 1891. Perhaps it is too much to expect that any such enumeration shall be absolutely correct, and the discrepancies in the returns of the two censuses as exhibited between the numbers for each separate Ward that were given me by the late Registrar, as the result of the 1891 census, and those obtained in 1897 by the Town Clerk, are such as to suggest that there must have been errors in the counting of some of the Wards in 1891.

I had previously estimated the population of Cheltenham roundly at 49,000, and to this number I still adhere. It is very near the actual figure of last year's count.

The Quality of the Population.

CHELTENHAM does not consist entirely of large houses, as might appear to a visitor coming to the town by the Midland Railway, but has some populous poor quarters. These, generally speaking, lie well apart from the better-class residences, so that it is quite possible for visitors not only to come into the town but to make a prolonged stay here without discovering the existence of the poor streets. The large poor population to which I refer has its influence upon the general death-rate, and the incidence of disease. Although there is undoubtedly a considerable influx of families with members at school age—that is, the age at which death is least frequent—this apparent advantage is outbalanced by an immigration of elderly people who have passed the active periods of life and have come here to end their days. The number of females in the population of Cheltenham is much more largely in excess of the males than in the case of the country at large, a fact which is probably accounted for chiefly by the large number of female domestic servants that find employment in the better-class houses, and who have come in from beyond the borders of the borough.

The Birth Rate

21·3 per 1,000 of the population is a very low birth-rate—much below the average of the whole country—and a low birth rate is unproductive of a relatively large population at the healthiest ages of life, and in itself does not tell in favour of a low death rate.

The Death Rate

15·8 for last year is satisfactory as a death-rate, being below the average death-rate for the previous 10 years, and although the death-rate is liable to vary from year to year, the

average rate is gradually coming down, owing, as we may presume, to improved sanitary conditions, and a more widely diffused knowledge of the habits and conditions that are inimical to life.

Zymotic Death Rate.

Whooping Cough was the most fatal zymotic disease in 1897, but the zymotic death-rate (including Diarrhœa) of 0·93 is quite a low one. Thirty-eight out of the 46 deaths from the seven chief zymotic diseases were in children under five years of age.

Although Whooping Cough was more prevalent than usual with us last year, the fact must be taken to indicate a greater prevalence of this disease throughout the country and immediate neighbourhood, in which we in some measure shared, for there is no special liability for this distressing and fatal complaint to attack the inhabitants of Cheltenham; on the contrary, our statistics when taken over a series of years, show rather a comparative exemption from Whooping Cough.

Infant Death Rate.

The deaths of infants under 1 year old, which yielded a rate of 151 per 1,000 births, took place chiefly in the poor houses. The streets of the Central and North Wards at the lower end of the town contributed half of the infant deaths, and 90 per cent. of the infant deaths took place in small houses, which fact bears evidence of the varying viability of children born of parents in the different stations of life. This is owing—in great part, at least—to the different degree of care with which they are attended in the one class and the other. It is a hardy child that can continue to exist under such circumstances of feeding, attention and surroundings as are often to be noted in the poorest places. Many of them, however, are sufficiently hardy to survive, but they often suffer considerably in the process, and by the time they are adult are not amongst the best developed of all humanity.

TABLE OF STATISTICS for the last 10 years, shewing Deaths from Chief Zymotic Diseases, and Zymotic Death-rate, and Total Deaths and General Death-rate: also Total Births and Birth-rate per 1,000 of population, and (under 1 year old) Infant Death-rate per 1,000 children born. Population for first 6 years, 44,000: for last 4 years 49,000.

	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
Small Pox	...	...	...	...	...	...	...	...	...	...
Measles	3	...	12	5	41	12	2	5	47	2
Scarlet Fever	1	...	...	1	7	3	7	...	...	1
Diphtheria	1	2	5	4	2	6	4	5	13	6
Whooping Cough	10	8	4	1	4	...	3	8	1	22
Enteric and Continued Fevers...	31	7	8	4	1	6	2	6	9	2
Diarrhœa	15	13	14	4	11	20	8	13	18	12
Total Deaths from seven chief Zymotics ...	61	30	43	19	66	47	26	37	88	45
Death-rate from Chief Zymotics	1·38	·68	·97	·43	1·50	1·06	·53	·75	1·79	·91
Total Deaths belonging to District	758	696	737	772	794	769	732	827	826	776
General Death-rate	17·2	15·8	16·7	17·5	18·0	17·4	14·9	16·8	16·8	15·8
Total Births	1033	991	955	987	943	993	1008	1070	1041	1043
Birth-rate	23·7	22·5	21·7	22·4	21·4	22·5	20·5	21·8	21·2	21·3
Infant Death-rate	157	137	155	132	135	167	128	156	135	151

WARD DEATH-RATES.

THE ward death-rates, as given in previous reports, were estimated upon the population of the several wards as obtained at the 1891 census. As the result of the census taken by the Corporation last year we have obtained a new and more reliable set of numbers. In the course of six years it was to be expected that a difference in the population of either quarter of the town would occur. Building has been going on particularly in the West Ward, not so much however in the Central Ward, which nevertheless shows a large increase over the numbers obtained for this ward by the late Registrar in 1891. A gain in this Ward of 1480, can hardly have arisen by the filling up of unoccupied houses, and a loss of 952 in the South Ward is almost impossible. It would consequently appear as if there were ample room for the supposition of an erroneous count in 1891.

POPULATION OF THE SIX WARDS.

	Census, 1891	Census, 1897	Difference.
North Ward	9790	9428	— 362
South Ward	8020*	7068	— 952
East Ward	8242*	8191	— 51
West Ward	6039	7005	+ 966
Central Ward	6553	8033	+ 1480
Middle Ward	8870*	9219	+ 349

* These numbers include those added at the extension of the Borough Boundary.

It is a matter of regret that such a wide divergence should exist, and only shows what very great care is required in taking a census, in order to obtain correct data upon which to found statistics. The desirability of a more frequent enumeration than the general governmental decennial one will be also apparent.

In the following table the ward death-rates are estimated upon the populations as obtained last year.

DISTRIBUTION OF DEATHS IN WARDS AND IN INSTITUTIONS. WITH DEATH RATE IN EACH WARD FOR YEAR 1897.

Wards (excluding Institutions)	Population 1897 Census.	Deaths.	Death Rate per 1000 living.
North Ward ...	9,428	158	16·7
South Ward ...	7,068	78	11·0
East Ward ...	8,191	127	15·5
West Ward ...	7,005	69	9·8
Central Ward ...	8,033	122	15·1
Middle Ward ...	9,219	113	12·2
Institutions.			
General Hospital ... ... (Including 12 not belonging to the District)		50	
Workhouse ... ... (Including 9 not belonging to the District)		74	
Nazareth House		4	
Children's Hospital...		4	
Delancey Hospital		1	

The above table shows plainly how the poor class dwelling affects the death-rate, for in the several wards the rate is relatively high or low in close accordance with the proportionate amount of poverty in the ward. The *West Ward* again takes the palm for having the lowest death-rate. The *Middle Ward* has, each year since I first began to show the ward death-rates separately, yielded a favourable rate. Its population is nearly the same as that of the *North Ward,* but the death-rate in the latter ward is about 40 per cent. higher. The *South Ward, Middle Ward,* and *West Ward,* containing together nearly half of the population of the Borough, and all lying in contiguity on the South side of the High Street yield a death-rate together of about 11 per thousand, which is in the highest degree satisfactory.

TABLE SHOWING DEATH-RATES PER 1,000 LIVING IN THE SEVERAL WARDS IN 1897.

[INSTITUTIONS EXCLUDED.]

Of Infants 1 year old and under; of Old People over 70 years of age; from Phthisis; from other diseases of Respiratory System—Pneumonia, Bronchitis, and Pleurisy; from Cancer, and from Zymotic Diseases, including all Notifiable Diseases, together with Erysipelas, Diarrhœa, Enteritis, Membranous Croup, Measles, and Whooping Cough.

	North Ward.	South Ward.	East Ward.	West Ward.	Central Ward.	Middle Ward.
1 year old and under .	5·51	1·83	3·29	1·99	2·73	2·16
Over 70 years old	3·60	4·24	4·76	3·28	4·10	3·79
Phthisis	0·84	0·84	1·09	0·42	1·24	0·21
Pneumonia, Bronchitis, and Pleurisy ...	2·54	1·61	1·09	1·14	1·86	1·73
Cancer and Malignant Growths	0·74	1·41	1·09	0·42	1·12	1·08
Zymotic Diseases ...	1·27	0·00	1·46	0·71	1·24	0·86

In the following List the Deaths are given in the streets in which they occurred. The figures after the disease represent the ages at death, the comma separating one death from another. All ages up to 1 year are stated as 1 year, ages between 1 and 2 as 2 years, and so forth where fractions of years occur in the Death Returns. This mode of setting out the deaths is likely to be of use for making a ready comparison of the deaths that occur in any street through a series of years, and if Cancer or any other disease has an excessive incidence to any particular locality, it will be easily discovered by a comparison of the Lists of several years.

NORTH WARD.

Albion Parade	phthisis 15, cerebral hemorrhage 80 pneumonia 68
Alstone	hemiplegia 60
Alstone place...	old age 76, cancer 79, 65
Alstone cottages	anæmia 14
Albert street, St. Peter's ...	old age 79, tuberculosis of lung 1
Albert street, St. Paul's ...	heart disease 65, 25, spina bifida 1, phthisis 42
Barnard's row	heart failure produced by shock from fall 60, spina bifida 1
Bloomsbury street	senile bronchitis 80 heart disease 63
Bloomsbury place	bronchitis 1
Burton street...	whooping cough 1, bronchitis 2, heart disease 44, old age 90, acute general tuberculosis 2, debility 1
Carlton place West	bronchitis 1, atrophy 1, hepatic and lung disease 53. syphilis 1, cerebral hemorrhage 71
Chapel street...	old age 93
Cleveland passage	debility 1
Cleveland street	bronchitis 73, abdominal tumour 73, old age 89
Devonshire street	bronchitis 75
Elm street	marasmus 1, accidentally suffocated 1, heart disease 49, acute general tuberculosis 2, pneumonic phthisis 44
Elm place	broncho-pneumonia 1
Elmstone street	old age 73, premature birth 1
Gas lane	bronchitis 68
Gloucester road	scirrhus of mamma 42, rheumatism 62
Granville street	pertussis 2, congenital disease of heart 1, marasmus 1, rachitis 1
Grove street	bronchitis 60, 81, 2, phthisis 61, gastric catarrh 1, premature birth 1. broncho-pneumonia 2
Hamilton place	old age 75, phthisis 46
Hereford place	hepatic and kidney disease 7, convulsions 1, cancer 74, marasmus 1
Hungerford street	premature birth 1, debility 1
High street	broncho-pneumonia 1, cellulitis of arm 67 old age 86, nephritis 15, cyanotic and imperfect circulation from birth 1, croup 3
King street	pulmonary tuberculosis 2, old age 92, bronchitis 59
Keighley terrace	whooping cough 1
Lower Park street	old age 87, catarrhal croup 2, croupous laryngitis 9, asthma 54, pertussis 1
Malvern street	cerebral hemorrhage 41, gastritis 1, heart disease 78, old age 72, acute general tuberculosis 2

Marsh lane	gastritis 20
Milsom street	diarrhœa 1, gastro-enteritis 1, marasmus 1
New street	influenza 74
Old Millbrook terrace ...	catarrhal bronchitis 1
Queen street	antepartum hemorrhage 34, pertussis 2, malignant ulcer 77. sunstroke 4, bronchitis 1
Russell street	tuberculous meningitis 2, apoplexy 79, bronchitis 1
Russell place	hydrocephalus 1
Severn hill	heart disease 73
Stanhope street	cerebral disease 6, heart disease 70, pneumonia 47
Stoneville street	heart disease 52, malnutrition 1
St Paul's lane	broncho-pneumonia 1, bronchitis 1
St. Paul's street South ...	atrophy 1, heart disease 57. debility 1, cyanosis 18, chronic renal disease 63
St. Paul's street North ...	pertussis 1, exopthalmic goitre 21, heart disease 84, 42, old age 85. cirrhosis of liver 65. measles 1, cerebral hemorrhage 61, convulsions 1
Sun street	bronchitis 79, 78, phthisis 40, hemiplegia 47
Swindon street	pertussis 1
Swindon place	congenital syphilis 2
Swindon road	hemiplegia 65, cancer 50 umbilical hernia 65, old age 73, dropsy 1, bronchitis 2, influenza 1
Swindon terrace	apoplexy 66
Tewkesbury road	nephritis 49, old age 80, heart disease 58, convulsions 3
Townsend street	heart disease 11, old age 75, 86, teething 1, paraplegia 42
Townsend place	weakness of circulation from birth 1
Victoria street, St Paul's ...	phthisis 41, old age 73
White Hart street	cirrhosis of liver 48, marasmus 1
Waterloo terrace	cerebral disease 52
Waterloo street	paralysis agitans 65, pneumonia 50, diarrhœa 1, bronchitis 1, debility 1, dentition 1

THE UNION WORKHOUSE.

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SOUTH WARD.

Adelaide buildings	cirrhosis of liver 65, old age 81
Ashling villas	cancer 84
Bath parade	heart disease 77, bronchitis 88
Bath road	pelvic cellulitis 28, paraplegia 58, cancer 63, bronchitis 68, apoplexy 48, pleuro-pneumonia 23
Bath terrace	chronic emphysema 54, convulsions 1
Belmore place	syncope—result of shock from accidental fall—82
Blenheim parade	cancer 83
Blenheim place	cancer 63, chronic alcoholism 42
Bon Marchè place	cerebral hemorrhage 75
Buckingham villas	hypertrophy of prostate 82
Cambray	cancer 74, scirrhus of breast 61
Cheltondale villas	hemiplegia 87
College road	bronchitis 1, pulmonary tuberculosis 32
Commercial street	cancer 62
Corpus street	pneumonia 1, bronchitis 68
Delancey Hospital	scarlet fever 5
Ewlyn terrace	pneumonia 28, old age 73, cancer 66
Exmouth street	marasmus 1
Exmouth place	syncope 67
Francis street	epilepsy 46, heart disease 58
Francis terrace	old age 81, gastric catarrh 1
Gratton street	phthisis 34
Great Norwood street	pulmonary tuberculosis 33
Hermitage street	maldevelopments 1
High street	heart disease 75
Leckhampton road	old age 81, erysipelas 53
Lynton place	pneumonia 1
Montpellier grove	bronchitis 82, spastic paralysis 76
Montpellier retreat	internal hemorrhage 52
Montpellier terrace	gastric ulcer 77
Montpellier villas	cerebral hemorrhage 83, old age 82
Mitre street	rodent ulcer 81, cerebral hemorrhage 76
Northwick terrace	nephritis 76
Nazareth house	old age 75, cerebral embolism 69, morbus cordis 27, syncope 76
Naunton crescent	bronchitis 1, pulmonary tuberculosis 25, 48
Old Bath road	bronchitis 77, heart disease 79
Oriel terrace	cerebral apoplexy 68
Oriel place	fracture of skull—suicide—32
Oriel walk	gastritis 49
Orrisdale terrace	old age 74
Oxford place	pulmonary tuberculosis 14
Pilley	intercranial hemorrhage 74, heart disease 69
Providence place	cerebral congestion 1
Princes street	cancer 69

Rodney terrace	...	...	cancer 61
St. Luke's road	...	...	scirrhus of breast 77
Suffolk road ...	...	...	inanition 1
Suffolk parade	...	...	syncope 56
Sydenham road	...	...	found dead 1, tubercular meningitis 10
Thirlestane road	...	...	pneumonia 86
Victoria cottages	...	...	tubercular meningitis 27
Victoria place	...	...	convulsions 1, bronchitis 1
Victoria walk	...	...	chronic rheumatic arthritis 73
White Cross square...		...	peritonitis 35

THE GENERAL HOSPITAL.

Gastritis 36; pneumonia 25, heart disease 44, 42; malnutrition 1; apoplexy 55; empyema 8, 26; tubercular abcesses 24; bronchitis 57, 1, 74; phthisis 4, 2, 20; ovarian tumour 47; pyæmia 25; otitis media 10; tubercular disease of bowel 1; broncho-pneumonia 1, 2, 2, 2; meningitis 9, 1; concussion of brain, result of accidental fall, 45; abortion 24; tubercular peritonitis 19; pernicious anœmia 18; stricture of æsophagus 63; abcess in broad ligament 34; emphysema 59; intussusception 1; infantile atrophy 2; diarrhœa 1; congenital syphilis 2; gastro-enteritis 1, 2; enlarged prostate 83; pulmonary tuberculosis 46; chronic nephritis 56; tubercular enteritis 4; gastric ulcer 31, 30; diphtheria 6; marasmus 1; enteric fever 22; enteritis 42; cystitis 66; tuberculosis 50.

EAST WARD.

Albert place ...	...	...	hemiplegia 75, paralysis 71
All Saints' road	...	...	old age 84, 85, 83, 81, phthisis 28
All Saints' terrace	...	...	eczema 1
Belle Vue lawn	...	...	bronchitis 1
Berkeley place	...	...	heart disease 79
Brighton road	...	...	malignant disease of intestines 75, old age 69, heart disease 68
Britannia square	...	...	gastric catarrh 1
Columbia street	...	...	congenital syphilis 1
Denmark villas	...	...	prolapse of funis at birth 1
Duke street ...	...	...	morbus cordis 48, diarrhœa 1
Fairview street	...	...	suicide by hanging 59, whooping cough 1, 2, tuberculosis 1, 1, heart disease 39, phthisis 44
Fairview terrace	...	...	cancer 53
Glenfall street	...	...	whooping cough 1, premature birth 1, 1, phthisis 68
Grosvenor street	...	...	paralysis agitans 64, peptic ulcer 47, pleurisy 48, phthisis 52
Grosvenor terrace	...	..	diarrhœa 1, gout 74
Hales road ...	...	..	tubercular meningitis 10, heart disease 69, 60
Harp hill ...	...	...	diarrhœa 1
Hewlett road...	...	..	diphtheria 1, pneumonia 73, cancer 54, spinal cord sclerosis 76, broncho-pneumonia 74

Hewlett street	diarrhœa 79, old age 73
High street	hemorrhage into pericardium 56, perforative peritonitis 35, phthisis 23, apoplexy 19, atrophy 78
Jersey street	old age 74, senile phthisis 63
Jersey cottages	bronchitis 1
Jersey place	old age 81
Keynsham street	premature birth 1, phthisis 24, heart disease 74, 76, influenza 74
King's road	general tuberculosis 31, malignant disease of peritoneum 80, cancer 80, paralysis 76
Leighton road	diphtheria 4
London road...	accidentally suffocated 37, premature birth 1, hemiplegia 54
Marlborough place	rupture of varicose vein 72
Oxford street	heart disease 77
Oxford parade	cancer 59
Pittville circus	old age 90, heart disease 34, epilepsy 59, scirrhus of breast 53
Pittville circus road... ...	diabetes 86, marasumus 1, heart disease 52, premature birth 1
Providence square	bronchitis 1
Priory street	strangulated hernia 61
Princes street	debility 1, atrophy 1
Rosehill street	stricture of pyloric end of stomach 50, carditis 12, cerebral hemorrhage 68, influenza 56, 67
Selkirk parade	old age 84, 82, eczema 78, heart disease 55, paralysis 68
Selkirk street	premature birth 1
Sherborne terrace	old age 80, colica explumbo 45
Sherborne place	exhaustion following epileptic convulsions 6, nephritis 39, old age 72
Sherborne street	heart disease 45, 70, cancer 66, pertussis 1
Sydenham vllas	heart disease 69
Stretton terrace	gastritis 76
Sussex place...	intestinal tuberculosis 31
Trinity School lane	premature birth 1
Upper Park street	heart disease 68, whooping cough 1, teething 2, old age 82
Union street	cerebral hemorrhage 75, cancer 49, 73
Victoria place	bronchitis 63, 62, old age 87
Witcomb place	old age 79, 82
Whaddon lane	phthisis 19, old age 56, tabes mesenterica 11
Winstonian terrace	pneumonia 2, whooping cough 2
Woodbine cottages	phthisis 49
York street	old age 78

WEST WARD.

Arle	whooping cough 2, bronchitis 88, cerebral hemorrhage 69, injuries through being accidentally crushed 69 meningitis 2
Alstone	fœcial obstruction 73, cerebral hemorrhage 73, convulsions 1
Ambrose place	old age 74
Bayshill parade	meningitis 7
Briton terrace	strumous diathesis 1
Castle terrace	cerebral hemorrhage 84
Christ Church road	pneumonia 85
Douro road	papilloma in abdomen 72, paraplegia 68
Firgrove cottages	phthisis 15
Gloucester road	atelectasis 1, debility 1, pneumonia 1, phthisis 8, heart disease 60, diphtheria 69, general debility 59, anæmia 57, old age 81
Granley villas	diabetes mellitus 67
Great Western road... ...	bronchitis 1
Great Western terrace ...	debility 1
Lansdown crescent	syncope 71, bronchitis 89, 70
Lansdown place	shock through accidental injuries 58, heart disease 55
Lansdown road	cancer 62, debility 1
Lansdown lawn	heart disease 63
Lansdown parade	old age 71
Libertus road	heart disease 72, debility 76
Little Bayshill terrace ...	pneumonia 1
Malvern road	syncope 66
Malvern place	heart disease 84
Manchester street	syncope 23, phthisis 57
Manchester square	phthisis 39
Millbrook street	phthisis 31
New street	pertussis 2, paralysis 70, premature birth 1, old age 79
Overton park	calculus 90, hemiplegia 76
Queen's retreat	tuberculosis 1
Queen's road...	Bright's disease 61, heart disease 77
Royal Well terrace	pneumonia 13
St. George's parade... ...	typhoid fever 43, intestinal new growth 60
St. George's road	cerebral meningitis 1, paralysis 77
St George's place	pressure on bile duct 69, old age 93
St. George's square	convulsions 1
St. James' square	urethral stricture 71, pulmonary tuberculosis 43, influenza 34
St. Mark's Emporium ...	heart disease 64
Trusty cottages	whooping cough 1
York terrace	old age 90

CENTRAL WARD.

Albert road	old age 90
Albion street...	angina pectoris 58
Beaufort buildings	internal hemorrhage 36, old age 74
Bennington street	diphtheria 3, convulsions 2
Blenheim terrace	heart disease 66
Berkeley avenue	apoplexy 54, bronchitis 1
Belmont terrace	diarrhœa 1
Brunswick street	debility 1, paralysis 66
Brunswick street North ...	bronchitis 61, cancer 65, epilepsy 55
Brunswick terrace	phthisis 27
Clarendon villas	suffocation caused by quinsy and inflamation of windpipe 60
Clarence square	apoplexy 83, old age 84
Courtenay street	tuberculosis 1, cystitis 60, cancer 58
Dunalley parade	phthisis 58, hœmatemesis 57
Evesham road	German measles 38, cancer 90
Gloucester place	cancer 60, heart disease 65
Grosvenor place South ...	pneumonia 60
Hanover street	child birth 37, deficient circulation from birth 1, anæmia 1, old age 82, bronchitis 84, premature birth 1
High street	perityphlitis 53, premature birth 1, debility 1, old age 73, syncope 62
Henrietta street	phthisis 24
Larput place	phthisis 25, cancer 57
Leamington place	hemiplegia 65, bronchitis 53
Malthouse lane	influenza 1
Marle Hill parade	diabetes 36, heart disease 60
Marle Hill road	gastro-enteritis 1
Mount Pleasant	accidentally suffocated 1, old age 77, paralysis 75
North place	cancer 60, glioma retinæ 1, cerebral hemorrhage 75, broncho-pneumonia 1, premature birth 1, bronchitis 75
Northfield passage	congenital syphilis 1
Northfield terrace	cerebral hemorrhage 84, heart disease 66, broncho-pneumonia 76
Pittville parade	heart disease 82, old age 91, cancer 81
Pittville street	stricture of æsophagus 74, influenza 79, sclerosis of cord 65
Pittville villas	heart disease 76, pneumonia 70
Pittville lake	found dead 1
Pittville lawn...	heart disease 47, 43, old age 93
Pittville crescent	heart disease 68
Portland square	phthisis 6, hemiplegia 73, heart disease 52, spina bifida 1
Portland street	icterus 1, marasmus 28
Portland terrace	convulsions 1, heart disease 73
Prestbury road	cancer 64
Rose and Crown passage ...	pulmonary emphysema 42, pneumonia 65

Rutland street	... ..	general tuberculosis 1, pertussis 2, marasmus 1, phthisis 41, pneumonia 1, dentition 1
Sherborne street	... ...	heart disease 8, 79
Sherborne place	... ...	bronchitis 2
Segrave place	... ...	atheroma 81
St. George's street	... ...	heart disease 70, hemiplegia 54, laryngitis 1, phthisis 37
St. Paul's street North	...	hemiplegia 81, 29
St. Paul's parade	... ...	bronchitis 81, 82
Swindon road	... ...	influenza 22
The Children's Hospital	...	morbus coxœ 17, phthisis 15, pneumonia 2, tubercular ulcer of bowel 13
Warwick buildings	... ...	chronic renal disease 42
Wellington passage	... ...	whooping cough 2
Wellington grove	... ...	gastro enteritis 1
Wellesley villas	... ...	phthisis 23
Windsor street	... ...	phthisis 41, heart disease 84 tuberculosis 2, paralysis 72
Windsor place	... ...	old age 89, diarrhœa 1
Winchcomb street	... ...	syncope 76, hepatitis 66, gastro-enteritis 43, whooping cough 2, nephritis 45, pulmonary consumption 15
Winchcomb place	... ...	pneumonia 65

MIDDLE WARD.

Alexandra street	... ...	abdominal growth 54, prostatic disease 68
Albany road	... ...	premature birth 1
Andover terrace	... ...	apoplexy 75, heart disease 69
Argyle place	... ...	paralysis 58
Benhall cottages	... ...	malignant disease of stomach 43
Brandon terrace	... ...	cancer 73, 37
Clarence parade	... ...	old age 90, pleurisy 2, heart disease 77
Clarence street	... ...	suicide by poison 55
Croft street	... .	chronic gastritis 67
Dagmar villas	... ...	cerebral disease 66
Edward street	... ...	phthisis 57, premature birth 1, bronchitis 1
Edward place	... ...	erysipelas 61
Edward terrace	... ...	heart disease 62
Fairlight terrace	... ...	old age 81, heart disease 80
Gloucester road	... ...	enteritis 1, suicide by throwing himself over bridge 60
Great Norwood street	...	old age 87, intercranial hemorrhage 81
Hatherley	...	heart disease 62, exhaustion from inability to take nourishment 1
Hatherley road	... ...	syncope 60, accidentally crushed by roller 57, asthma 73, pelvic and cervical enchondroma 78
Hatherley street	... ...	broncho-pneumonia 1, old age 71
Hatherley cottages	... ...	debility 1
High street	...	chronic gastritis 23, accidentally crushed by a cab 13

Imperial square	debility 1, heart disease 55, 56, ovarian disease 72, pleurisy 70, influenza 73
Imperial circus	rheumatism 7
Lansdown road	cerebral congestion 13, heart disease 78
Lypiatt street	whooping cough 3, pneumonia 1, 1
Lystra villas	epilepsy 43
Montpellier Spa road ...	cerebral meningitis 68
Montpellier terrace	primary carcinoma 60
Montpellier lane	congenital malformation 1
Montpellier parade	exhaustion 80
Moorend street	diarrhœa 1, 1, phthisis 45, heart disease 77
Moorend crescent	broncho-pneumonia 1, heart disease 24
Moorend terrace	marasmus 1
Norwood terrace	bronchitis 59, old age 81
Park view	old age 80, middle ear disease 2
Park lawn	diabetes 78
Painswick road	old age 81
Promenade	old age 91, 84, broncho-pneumonia 57
Promenade terrace	malignant disease of liver 58
Rodney terrace	cancer 58
Rockford terrace	diphtheria 6
Rotunda terrace	old age 82
Regent street	laryngitis 63, phthisis 33
Royal parade	cystitis 84, asthma 69, appendicitis 19, paraplegia 67
Royal Well terrace	atrophic scirrhus of mamma 61
Short street	heart disease 42
Shurdington road	heart disease 54, 62, cerebral disease 50
St. Phillip's street	gastro-enteritis 1, debility 1, phthisis 16
St. Phillip's road	chololithiasis 87
St. Phillip's terrace	broncho-pneumonia 39, exhaustion following fracture of thigh 72
St. George's place	bronchitis 1
St. Stephen s road	heart disease 76
St. James' place	cancer 60
Spa buildings	chronic progressive cerebral suffering 65
Tavistock place	nephritis 32
Tivoli street	old age 74, broncho-pneumonia 1
Tivoli place	heart disease 73
Tivoli road	pneumonia 65, measles 1, influenza 80
Tivolian villas	asthma 62
The Park	septicœmia 68, old age 95, contracted liver 78, heart disease 48
Trafalgar street	bronchitis 91
Upper Norwood street ...	old age 91, bronchitis 74, diarrhœa 1
Victoria parade	bronchitis 57, old age 86

THE NOTIFICATION OF ZYMOTIC DISEASES.

CHELTENHAM suffered no alarming visitation of any Infectious Disease last year. There was—towards the end of the year especially—a certain prevalence of mild Scarlet Fever, many of the cases having arisen from the infection distributed by some children whose parents had carelessly failed to notify or isolate them. I am glad to think that such neglect is only occasional in our district. The very natural jealousy of those parents who have had their children taken to hospital serves a useful purpose in preventing a neighbour's child that is desquamating, or showing other signs of disease, escaping discovery. The Notification of Diseases, as in force here, is undoubtedly of great public use and importance, and the criticisms that some people have sought to raise in connection with it are baseless or trivial aspersions. It is a pity that it is not extended to some other diseases—especially measles—over which at the present hardly any control can be exercised for want of knowledge of the occurrence of cases, both as to time and place. It is true that but few cases of measles occurred in Cheltenham last year, but this was only the calm which followed the destructive storm of the year before, and at the moment of writing the death returns are beginning to show signs of a recrudescence of the malady. Whatever may be the case in rural districts, and in some other places, I am sure that in Cheltenham the notification of measles would be of advantage. The East Ward, in which the neglect on the part of the parents (who were summoned and fined) took place, contributed most cases of Scarlet Fever; and one or two localities in the West Ward were productive of a few cases of Diphtheria. It is rather a common thing to have successive cases of Diphtheria notified from the same locality, *i.e.* after one case has been notified one may look out for other notifications of cases occurring in the same street or neighbourhood. The cause probably more often lies in the conveyance of infection by personal contact at school or elsewhere, than in any peculiarity of the neighbourhood itself.

Infectious Diseases Notified in Cheltenham since Notification began in 1890.

Year.	Scarlet Fever.	Enteric Fever.	Diphtheria.	Puerperal Fever.	Smallpox.
1890	93	24	16	2	...
1891	75	19	15	...	...
1892	264	10	10	...	...
1893	419	63	33	4	2
1894	147	27	26	1	3
1895	89	34	25	3	1
1896	126	26	60	4	22
1897	224	20	43	1	...

In the following Tables the number of cases of Infectious Diseases notified in each quarter of the year, and in the respective Wards and Institutions where they occurred, are shewn :—

Cases of Infectious Diseases Notified in each Quarter of 1897.

Disease.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total for the Year.
Scarlet Fever	50	42	44	88	224
Enteric Fever	2	3	2	13	20
Puerperal Fever	1	...	...	...	1
Diphtheria	9	10	9	15	43
Total of all Diseases notified in 1897					288

Cases of Infectious Diseases Notified in 1897 Distributed in Wards and Institutions.

Ward or Institution.	Scarlet Fever.	Enteric Fever.	Puerperal Fever.	Diphtheria.	Total in each Ward or Institution.
North Ward	51	4	...	13	68
South Ward	21	2	...	1	24
East Ward	70	4	...	4	78
West Ward...	15	5	...	14	34
Central Ward	27	1	1	7	36
Middle Ward	30	4	...	4	38
The Workhouse	6	...	...	...	6
Female Refuge	2	...	...	...	2
The Crêche	2	...	...	...	2
Totals in Borough	224	20	1	43	288

SCARLET FEVER.

It would appear from our experiences gained by notification, and from our former death returns, that Scarlet Fever has to be reckoned a constant item for every year's statistics. The numbers notified during the last eight years have shown a gentle alternation of from the comparatively few cases to the comparatively many. We reached a maximum number in 1893; then for two or three years the numbers declined, and latterly we have been again on the upward grade, the 224 cases notified in 1897 exceeding in number those of any year since the 419 in the epidemic year of 1893. The character of the complaint has of late years been comparatively benign. There has, happily, been but one death in the last three years. The case death-rate for the eight years which have elapsed since notification became compulsory is 1·3 per cent. The whole history of Scarlet Fever however, shows it to be subject to great variations in severity of type, and epidemics have sometimes proved very fatal in their results. We hope that improved sanitary conditions and the early removal of cases to the Isolation Hospital, where, generally speaking, they have much greater care bestowed upon them than they would have in their own homes, will prevent the possibility of such a fatal visitation as that which was suffered by Cheltenham in the year 1876, when there were 96 deaths registered in the at that time smaller borough. With such a past experience of Scarlet Fever before us, it is sufficiently evident that we cannot afford to relax our efforts to control this disease. We are not sure that neglected mild cases do not lead to an aggravation of the malignancy of type, and, be this as it may, there remains a great uncertainty as to how Scarlet Fever will comport itself in the future. The present low death-rate and mildness of type of this disease is a matter for congratulation, but not for relaxation of care.

WHOOPING COUGH.

This disease, which during 1896 was prevalent in Gloucestershire, was some time in reaching us, but came at last, and is responsible for the deaths of 22 children. Although

Whooping Cough is not infrequently as fatal, and more fatal, than this, it is an unusual experience in Cheltenham, for, as I had occasion to report last year, our town for many years past has suffered a remarkable comparative immunity from this disease. We had 22 deaths last year, but in the previous 20 years there were but 71 deaths, the highest number in any year of the 20 being 10 deaths.

DIPHTHERIA.

The increased incidence of Diphtheria continues throughout the whole country, but with us 1897 was a more favourable year than 1896, the cases notified being 43 as against 60, and the deaths 6 as against 13. The whole of our statistics are contradictory to any supposition that Cheltenham is a locality where Diphtheria may be expected to be prevalent. Such a stigma undoubtedly does attach to some parts of the country, the constant comparitive prevalence of the disease forcing itself upon attention. Here, however, the average incidence is probably below that for all England, and is certainly considerably below that of some other towns located at no great distance away.

ENTERIC (OR TYPHOID) FEVER.

We were favoured last year in having but few cases of Typhoid—20 in all, the average for the previous seven years being 29. There were but 2 deaths in the town from this disease last year, which is considerably below the average number. This small incidence of Enteric Fever speaks favourably for the general sanitary condition of Cheltenham. The occurrence of an epidemic of this fever through a polluted milk supply in another Gloucestershire town during last year is somewhat alarming in the evidence it bears of the danger that may lurk in an article of diet which is so universally utilized as milk.

INFLUENZA.

Influenza from having fallen off in the year before became prevalent again last autumn, and there were 11 deaths primarily assigned to this cause during the year. The

insidiousness of the infection of this disease, and the manner in which it is apparently borne by the air, render escape from it extremely difficult, and one attack does not protect against further attacks, or if so, only for a short period. The disease is generally reckoned to be directly infectious from person to person, but this fact is rarely remembered by those who are suffering attacks, since it has been common for people to go into the streets or other public places, before free of the heightened temperature and other symptoms ; and thus the complaint has no doubt, been given to those susceptible persons who have, so to say, had the infection thrust upon them. There can be no question as to the right and wrong of this matter. To limit himself to his own house whilst suffering from Influenza is a duty every man owes to his neighbour. It might be remembered with advantage when Influenza is about, that the resistance offered by the body to the infection of the disease varies under different conditions. Exposure to chills do in all probability, predispose to attacks. A little extra care when the danger is known to be abroad would often be preventive of an attack of Influenza with its unpleasant consequences. Those persons who have suffered two or three attacks will, may be, have grown more careful as to how they expose themselves, but it behoves everybody to be wary of such an enemy. When attacked, the course of the disease as to the bronchitis and other disorders, which not infrequently follow the fever, may be modified by staying a sufficiently long time in a bedroom kept at a moderately cool and constant temperature. The fatal effects of Influenza make themselves most apparent amongst elderly people, and those suffering from heart affections, and other chronic troubles.

UNCERTIFIED DEATHS IN 1897.

THERE were ten deaths last year, for which no medical certificate was given, and in which no inquest was held. From time to time a death will occur in the case of a person who has not been attended in the illness by a medical man, and in which the facts adduced by the relatives point so conclusively to the probability of the death being a natural one, that an inquest will appear a superfluity. Nevertheless,

it would be most unsatisfactory to see the annual list of uncertified deaths growing longer, such vague assignations as "syncope," "failure of heart's action," "dropsy of abdomen," and "heart disease," savouring of guesswork and being the reverse of helpful in the keeping of correct statistics.

Congenital debility, at age 3 minutes	1
Convulsions, at age 2 days	1
Dropsy of Abdomen, at age 30 minutes	1
Failure of Heart's Action, caused by pain following stoppage the result of Painter's Colic, at age 44 years	1
Heart Disease, at ages 77, 60, 70 years	3
Premature Birth, at age 1 hour...	1
Syncope, at ages 71, 76	2
	10

RESULT OF CORONER'S INQUESTS, 1897.

THIRTY-NINE deaths were reported as having been certified by the Coroner after an inquest from causes tabulated below :—

Accident, drowned in bath whilst in fainting fit	1
,, suffocated whilst in bed with parents (overlain?)	2
,, fall, resulting in death in senile persons ...	2
,, fall, resulting in injury to knee-joint, &c., and consequent pyœmia	1
,, fall, resulting in heart failure or syncope ...	2
,, fall from trap and consequent concussion of brain	1
,, crushed by cab	2
,, crushed by wheel of straw-binding machine ...	1
,, injured by falling under horse roller	1
Apoplexy or hemorrhage into brain	2
Convulsions	2
Carcinoma and hemorrhage into stomach	1
Epileptic Fit and exhaustion from same	1
Found Dead, exact cause not determined	2
Carried forward ...	21

Brought forward	21
Heart Disease, heart failure, syncope	5
Hemorrhage, internal, due to rupture or ulceration ...	4
Infantile Atrophy	1
Paralysis	1
Pneumonia	1
Suicide, threw himself from house and fractured his skull	1
,, threw himself from bridge...	1
,, by hanging	1
,, by poison	1
Tuberculosis	2
	39

Form A.

Table of DEATHS during the Year 1897, in the Cheltenham Urban District (classified according to Diseases, Ages, and Localities).

Names of Localities adopted for the purpose of these Statistics; public institutions being shown as separate localities.	Mortality from all causes at subjoined ages.								Mortality from subjoined Causes, distinguishing Deaths of Children under 5 years of age.																		
										1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
														Fevers																	
	At all Ages.	Under 1 year	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards			Smallpox	Scarlatina	Diphtheria	Membranous Croup	Typhus	Enteric or Typhoid	Continued	Relapsing	Puerperal	Cholera	Erysipelas	Measles	Whooping Cough	Diarrhœa and Dysentery	Rheumatic Fev.	Phthisis	Bronchitis, Pneumonia, and Pleurisy	Heart Disease	Influenza	Injuries	All other Diseases	Total
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)																							
Cheltenham	667	148	40	20	19	183	257	Under5 ...	...	...	3	...	...	...	...	...	...	...	...	2	20	10	..	4	38	..	2	2	107	188
								5 upwards	..	.	2	1	.	1	...	...	...	...	2	...	...	1	...	41	56	76	9	14	276	479
Union Workhouse	74	3	1	...	...	11	59	Under 5...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	4
								5 upwards	..	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	8	..	...	59	70
General Hospital...	50	9	9	4	6	19	3	Under 5...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	5	...	...	...	10	18
								5 upwards	...	...	1	...	...	1	...	.	...	...	...	...	...	...	...	3	3	2	...	1	21	32
Delancey Hospital	1	...	...	1	...	...	...	Under 5...	..	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
								5 upwards	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	1
Children's Hospital	4	...	1	1	2	...	...	Under 5...	..	...	...	...	..	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
								5 upwards	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	1	...	1	...	...	1	3
Nazareth House ...	4	...	...	...	...	1	3	Under 5...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
								5 upwards	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	2	4
TOTALS	800	160	51	26	27	214	322	Under 5...	...	...	3	...	...	...	...	...	...	...	...	2	22	11	...	6	44	...	2	2	119	211
								5 upwards	...	1	3	1	...	2	...	...	...	..	2	...	...	1	1	45	61	89	9	15	359	589
The subjoined numbers have also to be taken into account in judging of the above Records of Mortality.																														
Deaths occurring outside the district among persons belonging thereto	...	...	...	...	...	...	...	Under 5...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
								5 upwards	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deaths occurring within the district among persons not belonging thereto	24	2	..	2	4	7	9	Under 5...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2
								5 upwards	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	2	3	...	1	13	22

Form B.

Table of POPULATION, BIRTHS, and of NEW CASES of INFECTIOUS SICKNESS, coming to the knowledge of the Medical Officer of Health during the year 1897 in the Cheltenham Urban District, classified according to Diseases, Ages, and Localities.

Names of Localities adopted for the purpose of these Statistics; Public Institutions being shown as separate lacalities.	Population at all Ages.		Registered Births.	Aged under 5 — or over 5	New cases of Sickness in each locality coming to the knowledge of the Medical Officer of Health.					No. of such cases removed from their homes in the several localities for treatment in Isolation Hospital.				
								Fevers					Fevers	
	Census 1891	Estimated to middle of 1897.			Smallpox	Scarlatina	Diphtheria	Enteric or Typhoid	Puerperal	Smallpox	Scarlatina	Diphtheria	Enteric or Typhoid	Puerperal
Borough of Cheltenham	47514	49000	1043	Under 5...	...	42	6	...	...	...	40	1	...	...
				5 upwards	...	168	33	17	1	...	155	7	5	...
Union Workhouse	...	...	...	Under 5	...	2	...	...	...	...	2	...	...	...
				5 upwards	...	4	...	...	...	...	4	...	...	...
General Hospital	...	...	...	Under 5...	...	...	...	...	...	...	...	...	...	...
				5 upwards	...	1	4	3	...	...	1	4	3	...
All other Public Institutions ...	...	...	...	Under 5...	...	...	...	...	...	...	...	...	...	...
				5 upwards	...	7	...	...	...	...	7	...	...	...
Totals...	47514	49000	1043	Under 5...	...	44	6	...	...	...	42	1	..	...
				5 upwards	...	180	37	20	1	...	167	11	8	...

Table No. 3.—SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Cheltenham Urban Sanitary District.

Deaths Registered from all Causes during the Year 1897.

	AGES.												
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards	Totals.	55 to 69
I. SPECIFIC FEBRILE OR ZYMOTIC DISEASES	28	17	3	3	1	2	3	2	8	2	...	66	1
II. PARASITIC DISEASES	...	...	...	...	...	1	...	...	...	...	...	1	...
III. DIETIC DISEASES	...	...	...	...	...	...	...	...	...	...	...	...	...
IV. CONSTITUTIONAL DISEASES	10	9	12	15	13	14	15	25	16	18	2	155	7
V. DEVELOPMENTAL DISEASES	25	...	...	...	...	...	...	1	15	49	29	119	...
VI. LOCAL DISEASES	58	23	10	8	14	21	38	67	89	74	10	392	19
VII. DEATHS FROM VIOLENCE	3	...	1	...	2	1	2	6	2	1	1	19	3
VIII. DEATHS FROM ILL-DEFINED & NOT SPECIFIED CAUSES	34	2	...	2	1	1	2	4	6	4	...	48	4
TOTALS	159	51	26	27	31	40	58	89	136	144	42	800	34
I. SPECIFIC FEBRILE, OR ZYMOTIC DISEASES.													
1.—*Miasmatic Diseases.*													
Smallpox — Vaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox — Unvaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox — No Statement	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	2	...	...	...	...	...	...	...	...	...	...	2	...
Scarlet Fever	...	...	1	...	...	...	...	...	...	...	...	1	...
Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	9	15	...	...	...	...	...	...	...	...	...	24	...
Diphtheria	1	2	2	...	...	...	...	...	1	...	...	6	...
Simple Continued and Ill-defined Fever	...	...	...	1	...	...	...	...	...	...	...	1	...
Enteric or Typhoid Fever	...	...	...	...	...	1	...	...	...	...	...	1	...
Influenza	2	...	...	1	1	...	...	1	5	1	...	10	1
German Measles	...	...	...	...	...	1	...	...	...	...	...	1	...
2.—*Diarrhœal Diseases.*													
Simple Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa, Dysentery	11	...	...	...	...	...	...	...	1	...	...	12	...
3.—*Malarial Diseases.*													
Remittent Fever	...	...	...	...	...	...	...	...	...	...	...	...	...
Ague	...	...	...	...	...	...	...	...	...	...	...	...	...
4.—*Lazarous Diseases.*													
Cowpox and Effects of Vaccination	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases (*e.g.*, Hydrophobia, Glanders, Splenic Fever)	...	...	...	...	...	...	...	...	...	...	...	...	...
5.—*Venereal Diseases.*													
Syphilis	3	2	...	...	...	...	...	...	...	...	...	5	...
Gonorrhœa, Stricture of Urethra	...	...	...	...	...	...	...	1	...	...	...	1	...
6.—*Septic Diseases.*													
Erysipelas	...	...	...	...	...	1	1	...	...	...	...	2	...
Pyæmia, Septicæmia	...	...	...	...	...	...	...	1	...	...	...	1	...
Puerperal Fever	...	...	...	...	...	...	...	...	...	...	...	...	...
II.—PARASITIC DISEASES													
Thrush, and other Vegetable Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...
Worms, Hydatids, and other Animal Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...
III.—DIETIC DISEASES.													
Want of Breast Milk, Starvation	...	...	...	...	...	...	...	...	...	...	...	...	...
Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...
Chronic Alcoholism	...	...	...	...	...	1	...	...	...	...	...	1	...
Delirium Tremens	...	...	...	...	...	...	...	...	...	...	...	...	...
IV.—CONSTITUTIONAL DISEASES.													
Rheumatic Fever, Rheumatism of the Heart	...	...	...	...	...	...	1	...	...	...	...	1	...
Rheumatism	...	...	1	...	...	...	...	1	...	...	...	2	...
Gout	...	...	...	...	...	...	...	...	1	...	...	1	...
Rickets	1	...	...	...	...	...	...	...	...	...	...	1	...
Cancer, Malignant Disease	...	...	1	...	...	4	6	20	12	12	1	56	4
Tabes Mesenterica	10	...	1	...	1	...	...	...	...	...	...	12	...
Tubercular Meningitis, Hydrocephalus	2	2	4	...	1	...	...	...	...	...	...	9	...
Phthisis	2	4	3	11	10	9	7	5	2	...	...	51	2
Other forms of Tuberculosis, Scrofula	4	3	1	3	1	...	1	1	...	...	...	14	1
Purpura, Hemorrhagic Diathesis	...	...	...	...	...	...	...	...	...	...	...	...	...
Anæmia, Chlorosis, Leucocythæmia	1	...	1	1	...	...	...	...	...	...	...	3	...
Glycosuria, Diabetes Mellitus	...	...	...	...	...	1	...	...	1	1	1	4	...
Other Constitutional Diseases	...	...	...	...	...	...	...	...	...	1	...	1	...
V.—DEVELOPMENTAL DISEASES.													
Premature Birth	19	...	...	...	...	...	...	...	...	...	...	19	...
Atelectasis	2	...	...	...	...	...	...	...	...	...	...	2	...
Congenital Malformations	4	...	...	...	...	...	...	...	...	...	...	4	...
Old Age	...	...	...	...	...	...	...	1	15	49	29	94	...
VI.—LOCAL DISEASES.													
1.—*Diseases of Nervous System.*													
Inflammation of Brain or Membrane	...	...	2	1	1	1	7	5	16	19	1	53	2
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis	...	...	...	...	...	...	...	...	2	...	...	2	...
Insanity, General Paralysis of the Insane	...	...	...	...	1	1	2	2	...	1	...	7	1
Epilepsy	...	...	...	...	...	...	...	...	...	...	...	...	...
Convulsions	8	2	1	...	...	...	...	...	...	...	...	11	...
Laryngismus Stridulus (Spasm of Glottis)	...	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	3	...	...	...	...	1	1	2	11	6	1	25	1
Other Diseases of Nervous System	3	1	...	...	...	...	...	...	2	...	...	4	...
2.—*Diseases of Organs of Special Sense.*													
(*e.g.*, of Ear, Eye, Nose)	...	...	1	1	...	...	...	...	...	...	...	2	...
3.—*Diseases of Circulatory System.*													
Pericarditis	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Endocarditis	...	...	...	...	...	...	...	...	...	...	...	...	...
Valvular Diseases of Heart	...	...	2	...	...	3	3	2	5	3	...	18	1
Other Diseases of Heart	...	...	1	1	3	4	7	17	19	19	...	71	7
Aneurism	...	...	...	...	...	...	...	...	...	...	...	...	...
Embolism, Thrombosis	...	...	...	...	...	...	...	...	1	...	...	1	...
Other Diseases of Blood Vessels	...	...	...	...	...	...	...	...	...	1	...	1	...
4.—*Diseases of Respiratory System.*													
Laryngitis	1	...	...	...	...	...	...	1	...	...	...	2	...
Croup	...	2	1	...	...	...	...	...	...	...	...	3	...
Emphysema, Asthma	...	...	...	...	...	1	2	1	1	...	...	5	1
Bronchitis	18	10	...	...	...	1	2	7	10	12	4	70	4
Pneumonia	7	7	1	...	2	1	2	1	9	1	2	28	...
Pleurisy	...	1	1	1	1	...	1	...	2	...	...	7	...
Other Diseases of Respiratory System	...	...	...	...	...	...	...	...	...	...	...	...	...
5.—*Diseases of Digestive System.*													
Dentition	2	2	...	...	...	...	...	...	...	...	...	4	...
Sore Throat, Quinsy	...	...	...	...	...	...	...	1	...	...	...	1	...
Diseases of Stomach	4	...	...	1	3	2	3	1	...	3	...	17	...
Enteritis	6	2	...	...	...	1	...	...	...	1	...	10	...
Obstructive Diseases of Intestine	1	...	...	1	...	...	1	1	2	...	...	6	...
Peritonitis	...	...	...	...	...	1	...	...	...	...	...	2	...
Ascites	...	...	...	...	...	...	...	...	...	...	...	...	...
Cirrhosis of Liver	...	...	...	...	...	...	1	...	2	2	...	5	...
Jaundice and other Diseases of Liver	1	...	...	...	...	...	1	...	2	...	1	5	...
Other Diseases of Digestive System	...	...	...	...	...	...	...	1	1	...	...	2	...
6.—*Diseases of Lymphatic System.*													
(*e.g.*, of Lymphatics and of Spleen)	...	...	...	...	...	...	...	...	...	...	...	...	...
7.—*Diseases of Glandular Organs of Uncertain Use.*													
(*e.g.*, Bronchocele, Addison's Disease)	...	...	...	1	...	...	...	...	...	...	...	1	...
8.—*Diseases of Urinary System.*													
Nephritis	...	...	...	1	1	1	3	3	...	1	...	10	2
Bright's Disease, Albuminuria	...	...	...	...	...	1	1	1	...	...	...	3	...
Disease of Bladder or of Prostate	...	...	...	...	...	...	...	1	2	4	...	7	...
Other Diseases of the Urinary System	...	...	...	...	...	...	...	...	...	...	1	1	...
9.—*Diseases of Reproductive System.*													
a. OF ORGANS OF GENERATION.													
Male Organs	...	...	...	...	...	...	...	...	...	...	...	...	...
Female Organs	...	...	...	...	1	...	1	...	1	1	...	4	...
b. OF PARTURITION.													
Abortion, Miscarriage	...	...	...	1	...	...	...	...	...	...	...	1	...
Puerperal Convulsions	...	...	...	...	...	...	...	...	...	...	...	...	...
Placenta prævia, Flooding	...	...	...	...	1	...	...	...	...	...	...	1	...
Other Accidents of Child Birth	...	...	...	...	...	1	...	...	...	...	...	1	...
10.—*Diseases of Bones and Joints.*													
Caries, Necrosis	...	...	...	...	...	...	...	...	...	...	...	...	...
Arthritis, Ostitis, Periostitis	...	...	...	...	...	...	...	...	1	...	...	1	...
Other Diseases of Bones and Joints	...	...	...	...	...	...	...	...	...	...	...	...	...
11.—*Diseases of Integumentary System.*													
Carbuncle, Phlegmon	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Integumentary System	...	...	...	...	...	...	...	...	...	...	...	...	...
VII.—DEATHS FROM VIOLENCE.													
1.—*Accident or Negligence.*													
Fractures and Contusions	...	...	1	...	...	...	...	2	2	...	...	5	2
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	...	...	...	...	...	...	...	...	...	...	...	...	...
Burn, Scald	...	...	...	...	...	...	...	...	...	...	...	...	...
Poison	...	...	...	...	...	...	1	...	...	...	...	1	...
Drowning	...	...	...	...	1	...	...	...	...	...	...	1	...
Suffocation	2	...	...	...	...	...	...	...	...	...	...	2	...
Otherwise	1	...	...	...	...	1	...	1	1	...	1	6	...
2.—*Homicide.*													
Manslaughter	...	...	...	...	...	...	...	...	...	...	...	...	...
Murder	...	...	...	...	...	...	...	...	...	...	...	...	...
3.—*Suicide.*													
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	...	...	...	...	...	...	...	...	...	...	...	...	...
Poison	...	...	...	...	...	...	...	1	...	...	...	1	...
Drowning	...	...	...	...	...	...	...	...	...	...	...	...	...
Hanging	...	...	...	...	...	...	...	1	...	...	1	2	1
Otherwise	...	...	...	...	1	...	...	1	...	...	...	2	...
4.—*Execution.*													
Hanging	...	...	...	...	...	...	...	...	...	...	...	...	...
VIII.—DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES													
Dropsy	1	...	...	...	...	...	...	...	...	...	...	1	...
Debility, Atrophy, Inanition	22	1	...	...	...	...	...	1	...	1	...	25	1
Mortification	...	...	...	...	...	...	...	...	...	...	...	...	...
Tetanus	...	...	...	...	...	...	...	...	1	...	...	1	...
Abscess	...	...	...	...	1	...	...	...	1	1	...	3	...
Hemorrhage	...	...	...	...	...	1	1	2	1	...	...	5	2
Sudden Death (cause not ascertained)	...	...	...	...	...	...	...	...	...	...	...	...	...
Causes not Specified or Ill-defined	3	1	...	2	...	...	1	1	3	2	...	13	1

WORK DONE, 1897.

SUMMARY.

The following is a Summary of the work done by the Staff of the Health Department during the year 1897.

Houses and Premises inspected	11,870
Ordinary General inspections	3,233
House to House ditto	2,657
Re-inspections	4,556
Visits to Slaughter-Houses	106
,, Common Lodging-Houses	36
,, Cowsheds, &c.	123
,, Bakehouses	122
,, Workshops	239
,, *re* infectious disease	798
Complaints received	143
Notices served	2,100
Circulars sent referring to notices	245
Authorities under Sec. 41, P.H.A. to open ground, given	175
Corporation Sanitary Certificates granted	51
New drains laid and drains re-laid on notice ...	192
Water test applied to drains...	386
Length, in feet, of stoneware drains laid	15,180
Ditto iron ditto	2,459

Brick drains removed	61
Cesspools abolished	6
Man-hole disconnecting chambers provided ...	48
Soil-pipes and ventilating shafts fixed	188
Ditto ditto tested	69
Intercepting traps fixed	164
Dip and Bell traps removed	1,144
Stoneware gullies fixed	1,264
Rain-water and other pipes disconnected from drains	31
Lead waste pipes provided	197
Ditto traps to ditto	153
Blocked drains unstopped	26
Water-closets built	26
New W.C. pans of the "Washdown" type fixed...	979
W.C.'s unstopped and W.C. pans cleansed ...	14
Flushing boxes fixed...	1,361
Ditto repaired	19
Samples of water collected	255
Wells closed on notice	161
Nuisances from overcrowding abated	17
Ditto animals ditto...	17
Ditto smoke ditto...	3
Ditto insufficient W.C. accommodation abated	11
Houses cleansed and lime-washed, on notice ...	89
Bake-houses ditto ditto	13
Slaughter-houses ditto ditto	9
Workrooms ditto ditto	17
Common Lodging-houses ditto	4
Cowsheds ditto ditto	4
Houses closed, as unfit for habitation	15
House walls repaired...	6
Roofs, eaves and gutters repaired	27
Floors, yards and areas repitched	59
Pigstyes repaired	3
Nuisances from accumulations of hogwash abated	4
Accumulations of manure removed, on notice ...	6
Manure receptacles provided	5
Ash ditto ditto	609
Sinks provided	17
Collections of rubbish removed	4
W.C. apartment ventilated	2

New urinals provided	12
Houses fumigated	119
Rooms fumigated	136
Notices to schools to prevent children after exposure to infection going to school	165
Notices to parents ditto ditto	153
Articles of clothing, &c., disinfected in steam disinfector	3,975
Loads of clothing, &c., disinfected for outside Authorities or private persons	10

A. E. HUDSON,

Chief Inspector of Nuisances.

In the foregoing summary of work done, which has been drawn up as usual by our very able Chief Inspector, Mr. Hudson, proof will be found of continued activity in the Public Health Department during 1897. Some of the items are perhaps deserving of more detailed comment.

Affixing of Flushing Cisterns to W.C.'s.—This matter which was for many years neglected, has received great attention with us during the last few years, and the number of water-closets without a proper disconnected cistern and water supply for their efficient flushing is being very rapidly reduced. In the course of the last three years 3,716 of such flushing cisterns have been affixed and water laid on, last year the number being 1,361. At this rate the number of unflushed closets must soon be reduced to zero, and not too soon, for no closet ought to be connected with any drain or sewer without proper provision being made to flush it. It has been a very common thing, not only in Cheltenham, but in many other places where the water carriage system is in vogue, to connect closet pans of various and often improper forms, with the sewers, and leave the flushing to chance buckets of water, which in many instances have had to be carried by hand from a pump or tap situated quite a considerable distance away. Under the most favourable circumstances, when the occupiers really try to keep the

necessity of flushing in view, hand-flushed closets are not likely to have sufficient water applied, and in the greater number of cases, filthy closets, and blocked drains are the common result.

New Closet Pans.—Very commonly in connection with flushing, a new pan is necessary, which accounts for nearly a thousand new closet pans being put up last year. The old long hopper with a vertical pipe descending to the trap many feet below appears once to have been a favourite form, but the impossibility of properly flushing these long hoppers, in whatever way the water is applied, leads to the necessity of their removal and substitution by short pans, with the water of the trap standing well up to receive the soil.

Ash Receptacles.—The Cheltenham Improvement Act, 1889, which gave us power to get flushing apparatus affixed, also provided that every house should have a receptacle for ashes and house refuse of such sort as should be approved by the Corporation. We advocate the galvanized iron moveable ash bins before any other kind, and it would be better if the whole of the fixed ash receptacles could be abolished in favour of the moveable metallic bins, but our powers are not wide enough to secure such a result. Where one is not sufficient to hold the ashes of a week two can be used, for it is desirable not to have them of so large a size that they cannot be readily lifted by the men who collect the ashes, dust, and house refuse. By the use of these moveable receptacles and the more frequent collection of refuse, an insanitary and dangerous contrivance is got rid of in the shape of the great old fashioned "ash-pit" or "dust-bin," which, very generally being uncovered, and containing a mixture of decomposable materials in large quantity, created a nuisance which was undoubtedly prejudicial to health. The saving of labour in the collection of ashes by the use of moveable receptacles of the kind above mentioned is also very great, so that their universal adoption would greatly expedite a most important work, and one which in past time was but laxly performed. 1,500 moveable receptacles of galvanized iron have been provided during the last three years, and there are many more still required, and which will fill further lists for presentation at future meetings of the Public Health Committee.

Improvements in House Drains.—A great deal of conscientious work has again been done in this connection. Before any system of inspection and testing of drains was adopted, much careless and imperfect laying of house drains took place. The fact of the work being below ground made it easy to scamp the job, and the evidence of such bad work is to be met with on all sides. The renewing of old house drainage is an unending business. There is no difficulty at any time to find work of this description that requires to be done. The 17,000 or 18,000 feet of drains laid or re-laid during the year represents rather the amount that the Inspectors found time to cope with, than what might have been found to be required as the result of diligent search. That, however, which appeared to urgently call for action, or of which complaint had been specifically made was attended to. The inefficient surface trapping of drains was further remedied during the year by substituting 1,260 stoneware gullies for 1,144 iron D. and bell traps. Many of the latter had become quite loose in their setting, and were giving free exit to sewer gas at their rims, their water seal also being no deeper than half-an-inch in most cases, whilst in many instances, owing to the trap being tipped sideways, or for other reason, there was no seal at all. Many more of these ineffective fittings still remain, but their number is undergoing rapid reduction. The house drains of the town were also improved last year by the addition of numerous new man-hole disconnecting chambers, ventilating shafts to soil pipes, and main traps between the drain and sewer ; also by the provision of new lead pipes and traps to scullery sinks. All these measures have tended to the general improvement of the properties dealt with, and have led in each case to purer air and more healthful conditions in and around so many dwelling houses. The work of testing drains by the water-test has grown to very formidable dimensions, and takes up a great proportion of the Chief Inspector's time. It is of such importance however, that it is difficult to delegate it to a less responsible person, nor indeed is there any assistant to whom this work could be given, for the work of the Health Department has so grown that we are always now short of hands, and can only get through the work that is done with difficulty.

Testing of Drains.—(1)—As the result of complaints made at the instance of any person, including members of the Public Health Service. Authorities are obtained to open the ground, etc., under Sec. 41, P.H.A., and the drain is invariably tested with water. The common result is the relaying of the drain. (2)—As the result of an application for the Sanitary Certificate of the Corporation. Here, although there is no complaint, the drain is invariably tested by water, as no certificate is ever given unless the drain be water-tight. Fully 90 per cent. of the drains tested for this purpose have required to be relaid. When relaid the drains (both 1 and 2) are again tested. (3)—Testing of drains which have been relaid by owners without notice. No application from any builder or other person to test a drain that has been relaid has ever been refused, and the tendency is for an increase in the number of such applications. It is distinctly in the public interest that this testing should be done. If we could have got power as an addition to the Building Byelaws for it to be done compulsorily, it would have been a valuable power to have possessed. The additional byelaw required might run as follows :—"Whenever the drain of an existing dwelling-house or other building be proposed to be relaid without any requirement having been made by the Sanitary Authority or its officers for its relaying, notice shall be sent to the Sanitary Authority in order that an opportunity may be given for the inspection and testing of the drain ; and the provisions of the byelaws as to the drains of a new house shall apply in the case of all drains that are relaid or renewed in connection with houses and premises that are not new." We must therefore express ourselves glad and ready, in the absence of such a byelaw to inspect and test any relaid house-drain.

Other Improvements to Dwelling-houses.—Apart from work in connection with drainage, insanitary property was dealt with in reference to defective walls, roofs, floors, ceilings, etc., etc. Notices being served under the Nuisance Section of the Public Health Act, with detailed specifications of requirements.

Yards.—Perhaps one of the most dangerous things connected with many a dwelling-house is its dirty neglected

yard. A very interesting paper, by Sir R. Thorne Thorne, recently published upon "Soil and circumstance in their control of Pathogenic Organisms" has brought into prominence the disease-producing effects of the polluted ground which may surround a house. The experiments of Dr. Sidney Martin and others have established the probability of typhoid fever bacteria being capable of growth and diffusion in soils containing a quantity of organic material, what in fact, one might call 'dirty' soils. In making enquiry as to cases of infectious disease which have been notified, it is a very common experience to find the house backed by a yard whose surface soil is of such an impure sort as to suggest an admirable breeding ground for the causal germs of disease. One is aware that such soil is teeming with bacteria of many kinds, and that among them may be those that cause not only typhoid fever, but diphtheria, scarlet fever, and other diseases, is extremely likely as a common sense consideration. In such neglected yards fowls and other animals are too often kept to add to the dirt that would be there in any case, and which, with all its microbes, is trodden into the house on wet days, and blown in by the wind when the weather is dry, to alight upon articles of food, milk or what not, or to pollute the air which is inhaled into the lungs. The cleansing and re-pitching of yards, a certain amount of which was done in the town last year, is a subject requiring further attention in our town, where a great many houses have little yards connected with them. I have always discouraged the keeping of animals in such places, and should like to instil into the minds of those people who delight in keeping fowls in such confined spaces, that the doubtful profit and advantage of obtaining eggs laid upon the premises is entirely out-balanced by the dangers attending a dirty yard, to which I have alluded.

Houses in a Filthy and Unwholesome Condition.—The houses which were found to require notices to be cleansed and limewashed, as having been allowed to get into a filthy condition, were, generally speaking, occupied by those naturally sluttish people, whose natures appear to be wanting in the elements which constitute the faculty of tidiness, and the appreciation of the difference between cleanliness and filthiness. They form a bad class of tenant for any landlord

to get into his house. It is only a careless landlord, however, that will permit his house to get into so dirty a condition, so far as paper and whitewash goes, as is so often met with. In regard to landlords, however, one knows of several sorts. One hears a good deal of the absentee landlord, and sees something of the poverty-stricken landlord who is dependent upon his rents for a meagre subsistence; but the model landlord, who, at the beginning of his ownership, puts his property into first-rate sanitary condition, and is careful always afterwards to maintain it in that state, is a *rara avis,* deserving of full appreciation when met with, which is not often.

Overcrowding of Dwelling Houses was dealt with during the year in 19 separate cases. Each of these was a flagrant instance of a nuisance calculated to cause injury to health by overcrowding, to say nothing of the immorality, which attached to the occupation in common of small sleeping rooms by several members of a family varying in age and sex. The number of rooms provided in cottages built for the habitation of the working class, and the cubic space of such rooms is very generally far below what is required in theory for healthful homes. So much can be said for hundreds of houses in this town, and the inhabitants of some of them are of more respectable character than might be expected under the circumstances. Practically, however, we can only apply the law as to overcrowding in the very worst cases, where perhaps, the cubic sleeping space is less than 300 feet per adult person, two children under 12 years of age counting as one adult, unless indeed the case presents some special circumstances. If we attempted more we should be unhousing hundreds of people who would be quite unable to find better accommodation in the town in the first place, and would be unable to pay the price of it in the second place, even were it to be found. Certainly no houses can be obtained with good hygienic accommodation, for the parents and children of a large family under a rental of four or five shillings a week, which is as much as a third of the average weekly wages of many fathers of such families, in fact, the people who occupy and overcrowd the worst houses are very often almost destitute, the father being out of work and perhaps much in debt to his landlord. It is a matter of

the distribution of wealth, and nothing short of some sort of alteration in the distribution of money or means can ever permit the dwellings of the working classes to be everywhere what according to the dictates of hygiene they ought to be.

Closing of Houses Unfit for Human Habitation.—The consideration of the condition of a delapidated house as to whether it be such as should be repaired without the occupants leaving it, or whether it must be closed for the repairs to be done, not infrequently offers a fine point for decision. The convenience of both tenant and landlord has to be considered in connection with the question, and speaking generally, it would be very inexpedient to cause dwelling houses to be closed when the repairs can be done without greatly discommoding the tenant. The condition of that house for which a certificate of unfitness for human habitation is given, may be therefore taken to be very bad, and sometimes is so bad as to be beyond remedying by any measures short of re-building. There appears to be a misapprehension in the minds of some people as to the numbers of houses in the town which should be considered unfit for habitation. The same remarks as those I have made above in connection with overcrowding here apply. To make the small cottages, throughout the country generally, theoretically perfect would require the demolition and re-building of one half of them. In this town we should have to rid ourselves of a large number, but this could not be done without an equal provision of better homes in equally convenient positions, and *at the same rent.* In practice it is only occasionally that a conscientious recommendation to close a house as wholly unfit for human habitation can be made under Section 32 of The Housing of the Working Classes Act. Last year representations under this section were made in regard to the following properties :—

No. 14, Grove Street, and Cottage behind the same.
No. 1, Eton Cottage, Bath Road.
Beethoven Cottage, Sherborne Place.
Nos. 8 & 9, Brunswick Terrace.
Nos. 1 to 9, Barnard's Row, New Street.

In the case of some of these nothing has yet been done, the notices not having expired. Others have been made good under the notices served, or are in process of repair, and others have been evacuated and stand empty. In Cheltenham we have happily, only one or two short rows of back to back houses, and our poor streets are fairly wide and well apart, and there is no area which can be said to be badly overcrowded with houses.

THE CORPORATION SANITARY CERTIFICATE.

Last year 52 additional Corporation Sanitary Certificates were granted, for as many houses, to the tenants or landlords who made application for them. The granting of this certificate continues to serve a useful purpose, and probably more people would apply for it if they knew that by payment of a small fee, varying from five shillings to a guinea, according to the rental of the house, they could obtain a certificate which practically guarantees the house to be up-to-date in regard to all its sanitary appliances. The certificate is granted when these are found to be up to date, or a list of requirements necessary to bring them up to date if not found to be already in that condition. The demand that the house drain, which under the water test is found to be leaky, shall be made to stand this test before the certificate is granted, has sometimes been thought to be a severe requisition, since it usually necessitates the re-laying of the drain. It would be impossible to grant such a certificate as this however, whilst a defect of this nature existed, and I believe the institution of this certificate is having a salutary influence upon drain laying, for sometimes the certificate having been applied for for houses in which the drains have only recently been re-laid, the application of the test has discovered imperfect joints or a broken pipe due to careless work. Such a discovery serves as a corrective lesson to the man who did the work thus badly, and makes him more careful upon the next occasion. A repetition of the test to the same house drain after an interval of many months has shown, that when once a drain is thoroughly well laid, and cement-jointed, and the trenches carefully filled in so as not

to break the pipes by casual and unnecessary ramming or otherwise, it will stand good and sound for a long time. I should like to see every lodging-house keeper in the town in possession of this Corporation Sanitary Certificate. Very few have yet obtained it, although it must tell considerably to the advantages of those who are able to point to it in its frame hanging in the entrance hall or passage of their houses.

LIST OF HOUSES FOR WHICH SANITARY CERTIFICATES WERE GRANTED DURING 1897.

Name of House.	Annual Value. £
Battledown Grange	100
Bayshill Villas, 7	100
Bayshill Terrace, 9 ..	60
Beaufort House, Montpellier Villas	50
Brandon House	163
Chelsea House, Manchester Street	30
Clarence House	90
Courtrai House, Tivoli	45
Clareville, Lansdown	90
Clarence Square, 2	40
Ditto 7	40
Eamont, Bayshill	165
Eltham Lawn, Lansdown Road ..	160
Fern Bank, 1 (Pittville)	80
Foreland, The Park	90
Great Norwood Street, 18 ...	30
Grafton Terrace, 6	25
High Street, 318	60
Hatherley Villas, 5	30
Hatherley Lawn	170
Imperial Square, 4	55
Lansdown Crescent, 37	40
Ditto 38	40
Lansdown Parade, 8	28
Linsdale, Gloucester Road ...	24
Montpellier Villas, 31	35
Montpellier Terrace, 40	45

Netherby, Leckhampton Road ...	33
Oriel Place, 3	30
Oxford Street, 2	25
Ditto 8	24
Park Promenade, 1	70
Paragon Buildings, 4	50
Pittville Parade, 8	50
Pittville Crescent, 1	55
Prospect House, Bath Road ...	20
Pinehurst, Gloucester Road ...	30
Queen's Parade, 6	70
Rotunda Terrace, 12	30
Royal Parade, 11	60
Royal Well Terrace, 7	65
Spa Buildings, 4	50
Silwood, The Park	120
St. Johns Villas, 2 (Berkeley Street)	30
Suffolk Square, 10	70
Sydenham Grove, 1	45
Ditto 2	45
The Granleys, St. Marks ...	120
Wellesley Villa, Painswick Road ..	28
Woodleigh, Bath Road	55
Westall, Lansdown Parade ...	90
York Terrace, 1	50

THE COMMON LODGING HOUSES.

The Inspectors have paid the usual amount of attention to these during the year that is just past, and two night inspections were made by them without discovering any breach in the Byelaws which have been obtained for their regulation. Two of the common lodging houses in Stanhope Street have been removed from the register—the registered keepers having died, and the places being found to be too unsuitable for the purpose for a favourable consideration of the application of the would-be new proprietors. There are other common lodging houses in Stanhope Street that are not as one would have them, the houses in that street being, most of them, inappropriate for the purpose, but by virtue of their having been placed upon the register in the long ago, they cannot be interfered with so long as the Byelaws

are moderately well complied with. It would be much better for all common lodging houses to be in the ownership and under the management of the Sanitary Authority, and this ought to be aimed at in Cheltenham. Before long one or more others of the existing registered houses will come up for re-registration, for the same reasons as the houses of Mrs. Gapper and Mrs. Jordan, both deceased. Work that was ordered to be done on the premises of Mrs. Lyddiard stands postponed on account of her very great age and extreme poverty, and it is unlikely that her house will be registered again upon the application of any other person. Common lodging houses are, however, a necessity, and either other houses will have to be registered and kept by private persons, or the Corporation may step in and build a house. This latter course, in my opinion, should now be adopted—that is, a Corporation common lodging house should be erected, and there would be no difficulty at the present juncture to find a convenient site. The house need not be a large one, and, judging from the experiences of other towns, it would probably prove to be at least self-supporting financially. I have already introduced this subject for the consideration of the Committee, and have hope that upon another occasion it will be viewed with greater favour.

DAIRIES, COWSHEDS, AND MILKSHOPS.

We obtained last year a small additional power in regard to the notification by the cowkeeper, dairyman, etc., of any case of infectious disease existing in any person engaged in, or connected with any place from which milk is supplied to our Borough. This may in itself be of slight use, but it has led to a list being made of the places from which milk comes into our town. Some new general law is badly required to regulate the mode of production and sale of milk. The great importance of securing a pure milk supply, and the dangers to health attaching to the careless production and handling of milk, have recently received another illustration in an epidemic of typhoid fever at Clifton, which was clearly traced to a milk supply by the Bristol Medical Officer of Health, and this is only one of many instances in which milk has served as the medium of

conveyance for the causing germs of disease. At the present time the inspection of cowsheds and dairies, and the control of milk production in rural districts, would be very nearly represented by a cipher. Steps are being taken abroad to remove the danger of the tubercle bacillus being conveyed in milk, by testing the cows with tuberculin with a view to the elimination of all tuberculous animals from amongst milch kine. There is evidence to prove the success and value of the practice, which can be made to result in the retention of strains of cattle that are not subject to tubercle. Very little has been done, in this line, in England, and, so far as I know, nothing at all in the County of Gloucester.

In the present condition of the milk supply, we in the towns, being to a large extent dependent upon what is sent us from the outside country districts, have but one safe course to follow, which is to boil or scald all milk. This is best effected by placing a vessel containing milk in a larger vessel of water, the water being made to boil. Milk thus submitted to the heat of a water bath, either in such a simple way as that indicated, or in one of the so-called sterilizers that are advertised for sale, can be rendered safe without any fear of burning or boiling over, which so frequently happens with milk heated in a saucepan. When the milk has been maintained at as high a temperature as 200 degrees Farenheit for ten minutes, it is little likely to be capable of setting up disease, and the practice of obtaining so great a degree of safety is not very difficult or tiresome.

There were 14 applications in 1897 for registration as dairymen or purveyors of milk, 13 of which were ultimately registered, the premises having been inspected, and any existing fault, in the matter of drainage, water-supply, etc., made good. There was one application for registration as a cow-keeper. His cowsheds were measured up, and the number of cows for which the cubic space was found sufficient was noted, and sent to him, along with a copy of the bye-laws as to cowsheds.

FACTORIES AND WORKSHOPS.

The inspection of factories is the duty of Her Majesty's Inspector of Factories for this district of the country, Mr.

R. P. Arnold, who resides at Worcester. The inspection of workshops is the business of the Local Sanitary Authority. Our duties as to workshops however trench closely upon, or overlap those of the Factory Inspector, and certain matters have to be reported between us. The Acts of Parliament as to Factories and Workshops are multiple in number and somewhat confusing, and in their application are not generally a great success. An effort was made here last year to obtain an extended and corrected list of the workshops in the borough. About 250 premises were visited. They include the various places where manufactures are carried on in a small way, tailors, dressmakers, carpenters and cabinet-makers, etc., etc., as well as laundries, etc. I have had some forms printed showing the cubic space of the workshops, and the numbers of workers that can occupy them during the ordinary and the extraordinary, or overtime, working hours. The measurement of the apartments, and filling up of the cards that are intended to be hung in each workshop is in progress, and is being proceeded with as fast as possible, having regard to the many calls upon the Inspector's time. A register is of course kept, and a large number of additions were made to it last year, but as the act is so inclusive as to take in every little dressmaker who may at anytime come and start business in the town, and as these will generally be ignorant of the law, and no notice of the establishment of the trade be sent to the factory inspector as it is supposed to be, the difficulties of keeping a correct register are very great. I contemplate the future inspection of every workshop we now have or shall have in the future, upon the register as a distinct piece of work to be done at regular periods, and not less often than twice a year.

THE BAKEHOUSES.

These, which are likewise included in the Factory and Workshops Acts receive special attention with us, and were all inspected last year as usual, and the requisite notices for limewashing, &c., where that had been neglected, have been served.

THE PUBLIC ABATTOIR & PRIVATE SLAUGHTER-HOUSES, INSPECTION OF MEAT, &c.

The great advantage to the public of having all animals intended for human food killed at a public abattoir must be apparent to everyone who troubles himself to think of the subject. Not only would it lead to the abolition of the numerous private places used for the purpose, and so improve the conditions of the localities where they are situated, from the point of view of general sanitation, but what is quite as important, if not more so, the centralization of this business would allow of the ready inspection of all animals intended to be slaughtered, as well as of the meat as prepared for sale, and the foisting upon the public of the flesh of diseased animals at the usual price of sound meat would be prevented. Our own public abattoir has proved an undoubted advantage in these respects, and it is a matter of regret that its use should be limited to a portion only of the butchers of the town. The butchers consider their own immediate interests before all else, and do the best they can to guard them. In this they do not differ from other sections of humanity. Thus they are unwilling to forego the little conveniences attaching to slaughter-houses in proximity to their shops, which they can use at any time of day or night, and go instead to a public abattoir situated half-a-mile away, where all they do will be under surveillance and criticism. It is futile to expect them to do this of their own free will, and the process of compulsion under such legal powers as have ever yet been obtained, is a difficult and costly one. Right, as established by usage in regard to the use of private registered slaughter-houses is recognised by the law, and has to be bought out, a matter which would appear to result in interminable negociations, and which cannot always be carried to a successful issue without awakening animosity in the minds of interested parties. The general law upon the subject is weak and unsatisfactory alike for both the governing Corporation and the butchers, and the whole question of slaughter-houses and meat inspection will not be satisfactorily settled without some amendation of the general law. The fact of local regulations upon this matter extending no further than the borough

boundary, beyond which no provisional order or local law is in force, allows of the existence of a Gretna Green which is easy of access to the butcher who is determined to evade inspection. On the butcher's side, the absence of any compensation for meat seized as unfit for food, when the animals have been purchased alive in perfect good faith, is cause for just complaint, and results in the practice of underhand devices to prevent the seizure of meat.

At different times during the year the carcasses, etc., of 2 sheep, 1 pig, and 1 cow were destroyed as unfit for human food. Each of the animals were suffering from some disease at the time of slaughtering, the first three being killed at the abattoir, and the cow by a farmer outside. As the meat was not deposited or exposed for sale no prosecution resulted.

The superintendent of the abattoir reports that the butchers in the following list used the abattoir last year :—

Mr. Ashcroft, 77, High Street
Mr. Carrick, 294, High Street
Mr. W. C. Davis, 244, High Street
Mrs. Fisher, 294, High Street
Mr. Green, Albion Street
Miss Gwinnell, Winchcomb Street
Mr. Giles, Grocer, High Street
Mr. Jackson, Grocer, High Street
Mr. Jackson, Grocer, Winchcomb Street
Mr. Lane, 267, High Street
Mr. Lloyd, High Street
Mr. Moody, Winchcomb Place
Mr. Pleydell, High Street
Mr. Pugh, High Street
Messrs. Waghorne Bros., 346, High Street
Mr. F. Waghorne, 4, Tivoli Buildings
Mr. Wilcox, 44, Tewkesbury Road
Mr. G. Willis

The numbers of animals killed in the abattoir were fewer last year owing to the prohibition against removing

pigs from one place to another on account of Swine Fever.

	1897.	*1896.*
Beeves ...	... 566	... 521
Calves ...	... 446	... 494
Sheep ...	... 3915	.. 3884
Lambs ...	... 860	... 854
Pork Pigs	... 701	... 1746
Bacon Pigs	... 133	... 227
Totals	... 6621	7726

THE ISOLATION OF INFECTIOUS DISEASES.

The one disease above all others which contributes most cases to the filling of isolation hospitals is scarlet fever. In fact, in many towns and places no provision is made for the isolation of any infectious diseases besides scarlet fever and small-pox, and as the latter disease is now only an occasional visitor, the isolation of infectious diseases resolves itself in those places into the isolation of scarlet fever almost simply. That the segregation of infectious persons should be limited in this manner to one or two diseases is not in accordance with the ideals of the sanitarian, but one may conceive that in many districts at least, the difficulties attending the discovery and removal of cases, as well as the great expense involved in retaining them in hospital till free of infection, are sufficient to bar the possibility of isolating more than a moiety of the infectious cases that occur. Thus the isolation of enteric fever and diphtheria has not been attempted in many districts otherwise than in an irregular or casual way, although the advantages of an early segregation of such dangerous infectious disorders is too patent for argument. So far as I am aware no attempt at all has been anywhere made to systematically isolate measles and whooping cough, which are diseases that annually claim many thousands of victims, chiefly children of tender age. The great numbers of cases which in epidemic periods are liable to occur preclude the possibility of adequate hospital accommodation being provided in the case of the last two mentioned diseases, although I may say in passing, that in my opinion the notification of them would tend largely to diminish the death

rate amongst such cases, and in some degree to limit their numbers. In a population of some fifty and odd thousand lying together on a fairly distinct and circumscribed area, such as that of this town and its suburbs, the opportunities of an effective isolation should be greater than in a larger or more scattered district, and the feasibility of such a contention is well illustrated by the fact of our having isolated in hospital 93 per cent. of the scarlet fever cases which occurred in the borough last year, the complaint being at times rather prevalent in one locality or another. I should like to be able to say as much for the diphtheria and enteric fever cases, and in regard to the former there is no reason why so much might not be said, but although special provision has now been made here for the isolation of both these diseases, I apprehend from one cause and another that we shall not, at least for some time to come, be able to remove to hospital so large a per centage of the enteric fever cases, one of the main reasons being the habit that medical practitioners have acquired of treating such patients in their own homes, and their reluctance to allow them to be sent away. That enteric fever patients may be treated at home and no second case in the house or in any of the neighbouring houses occur is quite true, but the experience one has had of another case, or other cases, cropping up in the near vicinity of a first case, leads one to the opinion that it would be to the public advantage if most enteric fever cases were treated in hospital, where a routine system of disinfection of stools, etc., could be much more certainly carried out than is ever done in private houses, not to mention other advantages of hospital treatment. Of course for any hospital it is desirable that there should be a resident medical officer, but in the absence of such a provision patients are still infinitely better off in regard to their care and medical treatment than they would be in their own homes. In our own case the medical officer to the hospital lives on the same side of the town as that in which the hospital is situated, and is in communication with the hospital by telephone. Acting under general instructions of the Managing Committee of the Hospital, he is able at any time to call in such medical assistance as he may require in any operation or for other purposes. Sister Isabel, the matron, was formerly a nursing sister in the hospital, and she has under her an efficient staff of nurses.

It is quite possible that the question of *cui bono* may arise in the minds of some of our guardians of the public purse when contemplating the removal of so many mild cases of scarlet fever to hospital, and the continuance of the disease in the town notwithstanding. But although one cannot hope that the notification and isolation of such a disease as scarlet fever, the cause of which is obscure in its nature and origin, will lead to its extinction, yet I think we have ample evidence to show that the number of cases occurring is limited, and what would have been a serious outbreak but for these measures, is often toned down into a very minor affair. The considerable outbreak in Duke Street last year, which arose as the result of the neglect and exposure, etc., of the children of one family whilst in an infectious state, may be instanced as an example of the powers of isolation, for every case being removed to hospital as it arose, the outbreak in that locality was undoubtedly checked and brought to a termination.

A teasing question connected with the isolation of infectious cases is the recovery of fees from the patients for maintenance in the hospital. Such recovery of fees is permissively authorised by the Public Health Act, 1875, but in the case of the very poor, the attempt to recover would not only be a hardship upon the patient or those responsible for him, but would be sure to lead to an objection on the part of the friends of the sufferer to the removal, and under such circumstances it would not be possible to get half the cases into hospital. This practical difficulty has had to be met by an assurance, which has now come to be an understood thing, that poor people will not be called upon to pay anything for the maintenance and treatment of their cases. I am strongly of opinion that no charge should be made for any case that is sent into hospital by the Medical Officer of Health on public grounds, and should suppose that if a person were sued in a court for the recovery of these charges, and stated that it was neither his will nor desire that his child was sent into hospital, but that he yielded to the pressure of the Medical Officer, and permitted his child to go purely for the public benefit, as represented to him by the public officer, it would be doubtful justice if he were ordered to pay. Those who can afford it will naturally have

their cases treated in the private wards, and for these of course payment must be made, but that is quite another matter.

The Cheltenham Corporation is in the extraordinary position of not having the control of the infectious diseases hospital. Originally founded as a charity it is managed by a board of trustees, and is still to some extent supported by public subscription. The Corporation send in cases upon the following terms. They subscribe £200 per annum as a subscription towards the permanent maintenance of the hospital, and 2/- per day per case treated for them, with a maximum charge of £5 per case. Occasionally they have made an additional subscription, and are not unlikely to be called upon for further financial aid in the future. Below are given the sums paid for isolation of infectious diseases, mostly scarlet fever, during the last five years, together with the amounts recovered each year from patients who were called upon to pay. The years are financial years, ending at March.

Amounts paid by the Cheltenham Corporation to the Delancey Fever Hospital, 1893-7 inclusive, and amounts recovered from Patients during same periods.

Year.	Annual Subscription to Delancey Hospital.	Amounts paid for Treatment of cases at Delancey Hospital.	Amounts recovered by Corporation from Patients.
1893	—	‡‡£1340 9 0	*Nil*
1894	£200	*£760 0 0	£12 16 0
1895	£200	*£533 12 0	£27 12 9
1896	£200	*£284 12 0	£44 7 6
1897	£200	*£489 14 0	£27 16 6

‡ At 3/6 per day per case. * At 2/- per day per case.

From 1893 to 1897 £138 10s. 0d. was also paid to the Cheltenham General Hospital for cases of typhoid fever treated there, but since provision was made at the Delancey Fever Hospital for treatment of typhoid fever cases, no further sums have been paid to the General Hospital.

Numbers of Cases Notified and Treated in Hospitals in 1897.

	Scarlet Fever.	Diphtheria.	Enteric Fever.	Puerperal Fever.
No. notified	224	43	20	1
No. treated in hospital	209	12	8	1

VACCINATION.

Since the great scare of 1896 occasioned in this town by the epidemic of Small Pox at Gloucester, the prejudice against vaccination has revived, and the law requiring all children to be vaccinated being a dead letter by reason of the failure of the Board of Guardians to see it rigorously applied, there are few vaccinations now being done. The anti-vaccination propagandists have again been busy, and have doubtless made other converts, or have reconverted those who had seceded from their ranks in the time of danger. These having obtained protection against small-pox by the means for which previously they had pretended a great abhorrence, may probably, so far as themselves are concerned, be anti-vaccinators without fear or danger for the rest of their lives. It is a pity that any law should be allowed to be brought into such signal contempt as is the case with the law as to vaccination. It is indeed a broken reed and worse than useless as an aid to preventive medicine, for in its weakness it has undoubtedly helped to foster the spirit of resistance which is so frequently exhibited against it. With a remembrance of the manner in which observance of the dog muzzling order—another unpopular measure—has been compelled, one cannot help thinking that had it been the duty of the police to see the vaccination law carried out,

vaccination would have been universally done, and the objectors to it would have been but few in number.

The vaccination officer has furnished the following numbers as representative of the vaccinations done in Cheltenham in the year 1897.

No. of births in 1897 in the Cheltenham vaccination district	944
Total number of vaccinations performed	178

It is satisfactory to notice that the government is introducing a bill into the present parliament to amend the law as to vaccination. Its provisions have not yet been published, but one is hopeful of their being more stringent than those of the existing laws, and that the enforcement will be in the hands of the Sanitary Authority rather than with the Board of Guardians.

THE WATER SUPPLY.

The water supply to the borough is growing more satisfactory, especially in regard to the diminution of the numbers of shallow wells in use. Four or five years ago these were numbered by thousands, in fact, I showed in a special report upon the subject that over a third of the houses in the town were supplied with water from shallow wells. Energetic action in this connection has led, by one means and another, to the substitution of the corporation supply for the well-water at a rapid rate. The public supply has been introduced into 2,542 additional premises in the last five years, last year the number of new supplies made being 568. Whilst bringing so many new customers for the water, which has resulted in some financial advantage, the drain upon our water supply has been very naturally increased, and it has become plain that the Dowdeswell reservoir, seconded by the smaller supplies from Leckhampton and Hewletts, no longer remains sufficient for the permanent and plentiful supply of water to the borough. Our auxiliary supply from the Severn is consequently becoming of increasing importance to us, especially in the late autumn of the year, when the shortness of our supply

from other sources generally makes itself evident. For several weeks last autumn, as in the previous year, the greater part of the water supplied to the town was from Tewkesbury, and had we been unable to have recourse to the Severn, resort must have been had to the intermittent system of supply, with all its inconveniences and dangers, and even then we should have been in fear of running out of water. I obtained a good deal of additional information during last year concerning the variations in quality of the Severn water, both before and after filtration, by making fortnightly visits to the water works at Tewkesbury, and taking samples at the works, and from taps supplying houses in Tewkesbury town, for chemical and bacterioscopic examination. The general character of the samples I obtained was satisfactory, and it appears to me as a result of further experience, that there should be no difficulty in supplying a water of safe and good quality from the Severn at all times. A keen superintendence and constant examinations of the water lead to greater care in the purification, and tend to keep up the vigilance necessary to a good result. The inspection of water supplies and the examination of the water are matters of great importance everywhere, but up to the present time they have been greatly neglected throughout England. The laxity which exists in one place or another is occasionally brought into notice by the occurrence or recurrence of an epidemic of typhoid fever, as at Kings Lynn and Maidstone during last year, but no law or rule is made to ensure a more careful management and the matter drifts on from one catastrophe to another. An obstacle often stands in the way to official examinations being made on behalf of the consumers of the water, in the fact of the water works being owned by a private company, upon whose premises the local Sanitary Authority have no power of entry. We are not in this difficulty in Cheltenham however, the water undertaking being owned by the Corporation here.

Application has been recently made to the Local Government Board for powers to borrow further sums of money for expenditure upon the existing water works for their improvement. Some alterations and additions to the filters, storage tanks, and engines, at Tewkesbury are

proposed, and advice has been given for certain action to be taken for the improvement of the Dowdeswell gathering ground.

LEGAL PROCEEDINGS.

We had one prosecution only last year, which was for exposure of a child whilst suffering from a dangerous infectious disorder, Scarlet Fever to wit, also for failing to notify the case in accordance with the Cheltenham Improvement Act, 1889. The child was peeling profusely and playing at hoop with other children in the street at the time of discovery. She was also going to school. Two other children of the same family were at this time in bed suffering the acute symptoms of the same disease. The curious question arose in court whether the father or the mother was the responsible person in charge of the child. The father being out at work at the time the child was discovered, it was held that the mother was responsible, ultimately, the case having been adjourned, both father and mother appeared in answer to summonses and the woman was fined £2 and costs, the case being dismissed against the father. The exposure of this child led to a large number of cases in the neighbouring houses of the same street, and amongst the children attending the same school.

BYE-LAWS AS TO HOUSES LET IN LODGINGS.

Last year I mentioned the adoption of the model bye-laws of the Local Government Board as to houses let in lodgings. The adoption, however, has not yet been ratified, the draft having been returned with the suggestion that one or two points should be reconsidered.

The question of bye-laws for houses let in lodgings is in no sense a new one, for such bye-laws have been in force in a good many places for a long time. The necessity for such bye-laws was recognised in the more recent general sanitary law—the Public Health (London) Act, 1891—which makes it compulsory upon all the Metropolitan Sanitary Authorities to adopt such bye-laws, and again in the Public Health (Scotland) Act, 1897. Lodging houses

vary in class almost to as great an extent as the population itself varies. There are the "furnished apartments" kept by the common-lodging-house keepers or their neighbours, which are perhaps of the lowest class, and there are the numerous large boarding-houses and lodging-houses in the western central, and western districts of London, as also those upon our own Promenade and elsewhere, and there is every grade in between. Now, no doubt, as a general statement, the lower the class of lodging-house the more it will require to be looked after from a sanitary point of view, in regard to liability to overcrowding, neglect of cleansing and ventilation, faulty provision of necessary requirements and the rest, but it is by no means safe to assume that because a lodging-house is on a good terrace of large houses that therefore its condition will sure to be satisfactory, and that there can be no need for bye-laws to regulate its management. In industrial towns the object of such bye-laws will mainly be to regulate the lodging-houses occupied by the industrial classes. But this is not so much the case in districts like Marylebone, Paddington, and Cheltenham. In each of these districts there will be some lodging-houses occupied by the labouring classes, but the importance of the subject attaches rather to houses and to populations of a much superior class. In several places, especially in certain large provincial towns, the better class of lodging-house has been exempted from the operation of the bye-laws, by limiting their application to houses below a given annual value, or in which the rooms furnished or unfurnished let below a given weekly rental. The reason of this limitation probably lay in the shyness of the Sanitary Authority to subjecting the better class of houses to inspection and the provisions of the bye-laws, and their weakness is likely to have been increased by some of its members undertaking a championship of the supposed interests of the lodging-house keepers, whose places were likely to be affected.

To the general question as to whether it be desirable in the public interest that the lodging-houses of Cheltenham, great and small, should be registered and regulated by bye-laws, my answer is an emphatic affirmative. To make a rent limitation, and so exclude the larger houses is not

advisable, since one knows well by experience that some of the larger houses are badly managed, and not in the condition which lodgers have a right to expect them to be in. The adoption of bye-laws would lead to a general improvement, and any inconvenience caused to the lodging-house keeper would be slight, and for the most part temporary. In the long run the thing would redound to his interest, as it must also do to the interest of the town. A town of this description is partly dependent for its prosperity upon those people who live in lodgings, and it is hoped that this is a class that may increase in numbers in future years. Sanitary and well-kept lodging-houses would conduce to such a result.

Inspections made in the ordinary way by powers conferred by the Public Health Act, 1875, etc., are quite insufficient in themselves to insure an adequate improvement of the lodging-houses. The obstacles that would arise in a simple attempt at a systematic inspection under existing powers are easy to foresee, and would so surely occur as to prevent one embarking upon so foolish a project. The doors might be shut in our faces with impunity, until we should have obtained a justice's order for entry; nor should we be in a position to demand information as to the numbers of rooms let, etc., nor to prescribe the largest numbers of persons that might occupy any room; nor to ask for any of several necessary improvements, unless we were in a position to prove the existing conditions to be a nuisance injurious to health. The occasional visit of an inspector, on the other hand, and the printed copy of the bye-laws which would be supplied to the lodging-house keeper would keep the latter in mind of his duties, and act as a very healthful stimulus to the orderly, cleanly, and hygienic keeping of the lodging-house. I have therefore advocated the adoption of bye-laws for the registration and regulation of the lodging-houses of Cheltenham.

SALE OF FOOD AND DRUGS ACT.

Return of Articles submitted to the Public Analyst, during the year 1897, with the Result of Analyses.

(G. Embrey, Esq., Gloucester, Public Analyst.)

Samples submitted by Superintendent Donald McRae.

Quarter ending March 31st.

Articles submitted.		*Result.*
11	Samples of Butter,	All Genuine.
2	,,	Coffee, 1 Genuine, 1 with 20 per cent. added Chicory, summoned and fined 10/- and £1 4s. 0d. costs.
1	,,	Gin, Genuine.
3	,,	Lard, ,,
3	,,	Milk, 2 Genuine, 1 with 20 per cent. of fat abstracted, summoned and fined 10/- and 18/6 costs.
1	,,	Pepper, Genuine.
1	,,	Rum, ,,
1	,,	Sugar, ,,
1	,,	Whiskey, ,,

Quarter ending June 30th.

8	Samples of Butter.	All Genuine.
2	,,	Coffee, ,,
3	,,	Milk, 1 Genuine; 1 with 20 per cent. of fat abstracted, summoned and fined 10/- and 18/6 costs; 1 with 7 per cent. added water, summoned and fined 10/- and 18/6 costs.
5	,,	Pepper, All Genuine.
3	,,	Sugar, ,,
3	,,	Whiskey, ,,

Quarter ending September 30th.

8	Samples of Butter,	All Genuine.
3	,,	Coffee, ,,
1	,,	Gin, ,,
1	,,	Glycerine, ,,
1	,,	Lard, ,,
3	,,	Pepper, ,,
1	,,	Sugar, ,,
6	,,	Whiskey, 5 Genuine; 1 containing 8 per cent. too much water, summoned and fine £2 0s. 0d. and £1 3s. 0d. costs.

Quarter ending December 31st.

1	Sample	of	Brandy, contained 3 per cent. too much water, summoned and fined 10/- and £1 3s. 0d. costs.
5	,,		Butter, All Genuine.
1	,,		Coffee, ,,
7	,,		Flour, ,,
1	,,		Lard, ,,
5	,,		Milk, ,,
1	,,		Pepper, ,,
1	,,		Sugar, ,,
2	,,		Whiskey, ,,

APPENDIX.

ANNUAL REPORT

UPON THE

Meteorology of Cheltenham.

BY

RICHARD TYRER,

B.A., F.R., Met., Soc., Borough Meteoroligist.

BEING AN ABSTRACT OF METEOROLOGICAL OBSERVATIONS
TAKEN AT THE MODERN SCHOOL, CHELTENHAM,
DURING THE YEAR 1897.

Latitude 51° 54′ 57″ N. Longitude 2° 3′ 21″ W.
Height above Mean Sea Level, 190ft.

THE INSTRUMENTS ARE ALL OF THE HIGHEST QUALITY,
AND HAVE BEEN VERIFIED AT KEW.

Month.	Means of Pressure at 9 a.m & 9 p.m.	Air Temperature.								Relative Humidity.		Rainfall.		Ozone. 0·10
		9 a.m.	9 p.m.	Means of		Absolute Max. and Min.				9 a.m.	9 p.m.	Total Fall.	No. of Rainy Days.	
				Max.	Min.	Max.	Date.	Min.	Date.					
	INCHES.	°	°	°	°	°		°		%	%	IN.		
January ...	29·915	33·7	34·1	38·8	31·3	50·0	7	20·0	18 & 24	91	92	2·03	17	2·3
February ...	30·052	42·7	43·2	48·1	39·5	57·0	22	33·6	28	89	90	2·88	16	1·0
March ...	29·654	44·6	43·3	51·2	39·4	61·8	21	24·0	30	78	81	3·81	22	2·9
April ...	29·858	46·4	44·2	52·8	39·7	67·5	28	27·3	5	78	80	1·05	19	3·8
May ...	29·988	51·9	48·7	60·8	40·7	70·1	17	26·0	13	76	84	1·02	13	3·8
June ..	30·027	60·7	58·0	69·3	52·4	81·0	13	43·0	10	84	89	2·28	12	3·6
July ...	30·026	64·6	60·9	73·4	53·3	86·0	16	37·6	8	70	78	1·18	7	1·9
August ...	29·815	62·2	59·2	70·1	52·3	85·8	2	44·0	27	76	85	3·54	22	3·2
September ...	30·029	54·4	51·7	61·9	45·5	66·7	27	33·0	19	84	89	2·40	14	1·5
October ...	30·176	49·6	48·1	57·1	43·2	65·3	17	29·0	13	84	89	1·48	11	3·0
November ...	30·187	45·6	44·5	51.0	39·6	61·0	1	24·8	30	88	90	1·54	15	2·0
December ...	29·911	41·1	41·9	46·9	36·3	59·9	17	23·0	23	86	86	3·02	23	3·4
Totals ...	359·638	597·5	577·8	681·4	513·2					984	1033	26·23	191	32·4
Means ..	29·969	49·8	48·1	56·8	42·8					82	86	2·19	16	2·7
	1	2	3	4	5	6	7	8	9	10	11	12	13	14

NOTES ON THE TABLES.

COLUMN 1 is the mean reading of the Barometer at 9 a m., and 9 p m. corrected for temperature and reduced to mean sea-level

COLUMNS 4 TO 9.—The maximum and minimum thermometers are read and set at 9 p m , and the readings entered to the same day.

COLUMNS 10 AND 11.—The relative humidity is calculated by dividing the elastic force of aqueous-vapour at the temperature of the dew-point for the month by that at the temperature of the air.

COLUMN 14.—Observations are taken by means of prepared tests. The amount of colour produced after 24 hours exposure in an Ozone-cage is compared with a scale of 10 degrees of colour of increasing intensity.

WIND.

During 1897 the observations taken show that the general directions have been as follows :—

From the North	on 15 days	From the South	on 55 days
,, North-East	on 21 ,,	,, South-West	on 63 ,,
,, East	on 21 ,,	,, West	on 65 ,,
,, South-East	on 29 ,,	,, North-West	on 28 ,,

There were Calms on 68 days.

South Winds prevailed in March, April, October, and December.
South-West ,, in February, March, August, and September.
West ,, in March, May, and July.
North-West ,, in May and June.
Calms ,, in January, September, October and November.

COMPARATIVE TABLE of the Meteorology of Cheltenham for the years 1878-97.

Year.	Atmospheric Pressure.	MEAN AIR TEMPERATURE				Humidity.		Rainfall.	
		Max.	Min.	Mean.	Range	9 a.m.	9 p.m.	Inches	Days.
	Inches.	°	°	°	°	%	%		
1878	29·913	56·1	41·5	48.8	14·6	83	88	33·18	176
1879	29·944	52·2	38·5	45·3	13·7	87	89	32·63	212
1880	29·971	55·8	40·5	48·1	15·3	85	88	33·72	177
1881	29·957	55·0	38·9	46·9	16·1	82	85	25·28	185
1882	29·914	55·9	41·5	48·7	14·4	81	86	37·92	214
1883	29·964	55·6	40·6	48·1	15·0	85	89	29·93	204
1884	29·978	56·8	41 9	49·3	14·9	84	89	24·04	190
1885	29·930	54·8	40·0	47·4	14·8	84	87	26·45	193
1886	29·912	55·0	40·6	47·8	14·4	83	86	32·55	193
1887	30·029	55·3	38.6	46·0	16·7	80	83	22·78	153
1888	29·959	53·8	40·1	46·9	13·7	82	84	28·85	195
1889	29·957	55·4	40·6	48·0	14·8	84	87	27·07	181
1890	29·948	55·6	40·1	47·8	15·5	84	88	20·09	191
1891	29·957	55·1	40·0	47·5	15·1	83	87	33·14	192
1892	29·948	54·6	38·7	46·6	15·9	82	85	19·45	175
1893	29·990	59·1	41·3	50·2	17·8	81	83	19·91	169
1894	29·963	56·2	41·6	48·9	14·6	83	87	29·12	194
1895	29·923	56·2	39·6	47·9	16·6	83	87	24·99	174
1896	30·030	57·0	41·4	49·2	15·6	83	86	21·54	185
1897	29·969	56·8	42·8	49·8	14·0	82	86	26·23	191
Means	29·958	55·6	40·4	48 0	15·2	83	86	27·44	187

THE CLIMATE OF CHELTENHAM, 1897.

Comparison with other Health Resorts.

Station.	1st Quarter.				2nd Quarter.				3rd Quarter.				4th Quarter.			
	Mean Temperature.	Mean Daily Range of Temperature.	Relative Humidity.	Rainfall, Total.	Mean Temperature.	Mean Daily Range of Temperature.	Relative Humidity.	Rainfall, Total.	Mean Temperature.	Mean Daily Range of Temperature.	Relative Humidity.	Rainfall, Total.	Mean Temperature.	Mean Daily Range of Temperature.	Relative Humidity.	Rainfall, Total.
	°	°	%	ins.	°	°	%	ins.	°	°	%	ins.	°	°	%	ins.
Cheltenham	41·4	9·3	80	8·72	52·6	16·7	79	4·35	59·4	18·1	77	7·12	45·7	11·9	86	6·04
Scarborough	39·8	9·6	85	7·27	47·6	11·8	82	5·04	57·0	13·9	79	7·25	45·6	10·1	85	5·64
Douglas	41·1	7·9	92	10·97	49·8	12·3	83	9·46	56·8	13·1	83	10·87	48·1	8·3	89	13·61
Blackpool	40·4	10·6	87	7·27	50·4	16·1	77	8·47	58·8	15·1	78	8·28	46·2	11·5	86	11·09
Southport	39·9	8·3	86	6·32	50·5	13·5	77	7·42	58·2	13·4	76	8·52	46·1	10·8	88	9·59
Llandudno	42·4	7·5	83	6·74	51·2	11·9	79	6·54	59·4	11·8	76	7·52	49·2	9·2	?	9·89
Eastbourne...	42·3	7·6	86	10·37	52·3	10·9	80	6·24	60·7	9·9	80	7·96	48·5	9.2	84	5·43
Torquay	44·1	8·4	86	11·35	53·3	11·6	75	8·30	60·1	11·2	75	7·28	49·9	8·4	82	9·35

With respect to its meteorological conditions, the year was generally uneventful. There were no great extremes either in atmospheric pressure or in temperature. The beautiful weather which persisted during October, the high mean temperature of February, March, and December, and the entire absence of fog in December are the most noteworthy events. The mean temperature is high, the highest, except that of 1893, we have had for twenty years, and is 1·8 deg. above the average On three months only did the mean temperature fall below. The rainfall is 1·21 inches below the average, though the number of rainy days is slightly in excess. There was no fall of one inch during any day in the year.

The hawthorn was in leaf at the end of February. The first swallow was seen on April 14th, about its usual date of arrival ; the cuckoo was heard on the 22nd ; the swift appeared very early on May 1st, while the martin did not put in an appearance till May 6th. The oak and the ash were very early in leafing (April 23rd), and the hawthorn was in bloom on May 16th. Several hornets, the first I have observed here, were seen and captured in June. The trees were finely coloured in October and November. The first ice on the open water came on December 2nd.

EXTREMES FOR 1897.

Atmospheric pressure—	Highest 30·734 in.,	Nov. 21
,, ,,	Lowest 28·711 in ,	March 3
Maximum temperature	86·0 deg.,	July 16
Minimum temperature	20·0 deg.,	Jan. 18, 24
Maximum solar temperature ...	135·2deg.,	June 12
Minimum grass temperature ...	15 0 deg.,	Jan , 24, 27

JANUARY.—Atmospheric pressure was high at the beginning of the month, very steady from the 7th till the 21st, after which it was much disturbed, and was very low at the close. Range of pressure, 1·315 in.

The weather during the early part of the month was warm, with high wind, considerable rainfall, and some slight fog. From the 16th to the 29th it was cold, with slight snowfalls and very variable days—some very bright and pleasant, others just the reverse. The ice was safe for skating from the 24th to the 29th, the only skating we have had this year. The closing days were wet and gloomy. The rainfall was about the average There was very little range of temperature throughout the month—mean temperature, 35·0 deg , 1·4 deg. *below* the average of the past twenty years.

FEBRUARY.—Atmospheric pressure was very low at the beginning of the month, and was generally irregular throughout. It was high from the 14th to the 17th, and from the 21st to the 25th, but low at the close. Range of pressure, 1·413 in.

The weather, with the exception of a few dull days at the beginning, was during nearly the whole of the month very warm, fine, and pleasant, though there was considerable rainfall, chiefly at night, during the first fortnight, and we experienced a flood, fortunately not very high, on the 5th. The night temperatures were remarkably high, no frost in the screen occurring during the whole of the month, and there were only six nights of ground frost. It was the warmest February for twenty years. The range of temperature was very slight. Violets were in bloom and the hawthorn in leaf by the close of the month Mean temperature, 43·8 deg., 4·8 deg. *above.*

MARCH.—Atmospheric pressure was much disturbed throughout the month, especially so at the beginning and end: on one day only did the uncorrected barometric column reach 30 in. The mean pressure is the lowest since 1879. Range of pressure, 1·435 in.

For the first eighteen days the weather was generally unsettled, with gales, heavy rain and slight snow. The rest of the month, with the exception of the last three days, which were cold and ungenial, was warm, with some beautifully fine days. The night temperatures were generally high, frosts occurring on three nights only. The rainfall was very heavy, being 2·07 in. above the average. Mean temperature 45·3 deg., 4 0 deg. *above.*

APRIL.—Atmospheric pressure was low at the beginning of the month; from the 5th to the 22nd it was somewhat unsteady, after which date it was very steady till the close. Range of pressure, 1·187 in.

The weather during the first week was very cold and ungenial, the 5th being the coldest day since the beginning of February, with hail, snow and rain; the rest of the month, with the exception of the 16th and 17th, particularly disagreeable days, was fine and very pleasant, with beautifully warm days at the close; there was a thunderstorm on the 28th. Rain fell on a considerable number of days, but the falls were generally very light, and the mean is much below the average. There were strong winds throughout the month. Mean temperature 46·2 deg., slightly *above.*

MAY.—Atmospheric pressure was high and generally steady during the first half of the month, then gradually falling till the 27th, after which it rose till the end. Range of pressure 1·085 in.

The weather during the greater part of the month was fine and bright, but there were cold and dry northerly winds, and, as hardly any rain fell from the 20th of April to the 25th of May, this condition had a most injurious effect on vegetation in general Slight rain fell during the last week. Mean temperature 50·7 deg., 1·1 deg. *below.*

JUNE.—Atmospheric pressure was very steady during the first and last weeks, but very irregular from the 15th to the 21st. Range of pressure, 0·869 in.

The weather varied considerably during the month. With the exception of the 1st, a cold day, the first week was warm and close ; then followed some cold weather, with heavy and very welcome rainfall. The rest of the month, with the exception of a few cold days was generally fine and pleasant though the weather at times was decidedly relaxing. There was a thunderstorm with heavy rain on the 28th. Mean temperature 60·8 deg., 2·7 deg. *above*.

JULY.—Atmospheric pressure was high and steady throughout the month. Range of pressure 0·761 in.

The first week was cool and pleasant, the night temperature on the 8th being remarkably low. After this date the temperature rose steadily, and the maximum of the 16th was the highest since August, 1893. No rain of any value fell till the 19th, by which time the ground was completely dried up, bnt it was glorious weather for the hay-makers. The closing days were very hot and close The rainfall was very low, considerably less than half the average Mean temperature 63·3 deg., 2·7 deg. *above*.

AUGUST.—Atmospheric pressure was steady but rather low throughout the month. Range of pressure, 0·739 ins.

The maximum temperature during the first five days was very high, but the nights of the first three were cold, and the shade range on the 2nd was nearly 40 deg. The first half of the month was very fine and pleasant, though there was heavy rain on the 8th. From the 18th, when there was a thunderstorm, to the close of the month the weather was unsettled ; the day temperatures during this period were low, though the nights were warm, and the range for the time of the year was very slight. The rainfall was considerably above the average. Mean temperature 61·2 deg., 1·6 deg. *above*.

SEPTEMBER.—Atmospheric pressure was somewhat irregular till the 8th ; the e was a well marked anti-cyclonic period from that date untill the 16th, after which it was fairly steady till the close. Range of pressure, 0·943 ins.

The month opened with heavy rainfall and considerable wind. Then followed some fine and pleasant weather with rainfall chiefly at night. From the 10th to the 13th the dews were very heavy, and there was a dense fog on the 13th. The remainder of the month was marked by very fine weather, the 27th being a particularly beautiful day. The rainfall was somewhat below the average Mean temperature 53·7 deg , 1·7 deg. *below*.

OCTOBER.—Atmospheric pressure was high during the first week ; it then fell gradually till the 15th ; there was a well-developed cyclonic period from the 13th to the 17th, accompanied by strong winds, followed by an anti-cyclonic one : from the 23rd to the close the pressure was remarkably steady. Range of pressure, 1·209 ins.

This was by far the most remarkable month of the year; the weather throughout was bright and beautiful: there was only one day of heavy rain, the little rain that fell coming chiefly at night. There was an almost complete absence of fog, and it was certainly the most enjoyable of all the months. The first frost of the season occurred on the 12th; there was only one other frost, and some of the night temperatures were very high. The rainfall was very low. Mean temperature 50·1 deg., 2·8 deg. *above*.

NOVEMBER.—Atmospheric pressure was high and very steady from the beginning of the month until the 11th, after which there was a rapid fall, and there was a well-devoloped cyclonic period from that date till the 15th. From the 18th till the 23rd it was high and steady. It then fell very rapidly, and was very unsteady during the last few days. Range of pressure 1·524 in.

The weather at the beginning of the month was very beautiful, but the following days were gloomy and somewhat cold. The weather until the 21st was generally fine with many warm and damp days by no means pleasant; there was considerable wind from the 12th to the 16th. Between the 14th and the 20th there was a very remarkable daily variation in the 9 a.m. temperatures, almost unprecedented, the greatest range being as high as 21·4 deg. between the 18th and the 19th. The month closed with very tempestuous weather. The rainfall was very light. Mean temperature 45·3 deg., 1·9 deg *above*.

DECEMBER.—Atmospheric pressure was very unsettled during the first half of the month: it rose gradually from the 15th, and was high from the 17th to the 25th, but was very low at the close. Range of pressure, 1·683 ins.

The chief characteristics of the month are the high mean temperature, the comparatively great range at the beginning, the days being warm, though the nights were cold; the very high maximum temperature of the 16th and 17th, which were the warmest December days for at least twenty years; the entire absence of fog, and a thunderstorm on the 14th. The rainfall was considerably above the average. There were strong winds during the second week, and a very persistent gale on the 29th. Mean temperature, 41·6 deg. 3·7 deg. *above*.

RAINFALL IN THE COUNTY OF GLOUCESTER IN 1897.

STATION.	OBSERVER.	RAIN-FALL.	RAINY DAYS.
		Inches	
Beckford	F. Slade	2[illegible]·04	176
Moreton-in-Marsh	W. Arkell	33·19	163
Cheltenham	R. Tyrer	26·28	191
Bourton-on-the-Water ...	E. W. Kendall	33·94	181
Great Barrington	H. J. Barrett	38·88	164
Coleford	I. Trotter	48·82	222
R.A.C, Cirencester ...	C. C. Duncan	32·09	183
Berkeley	R. Shore	35·16	153
Lechlade	T. Arkell	25·52	147
Horcott	R. A. Iles	26·14	150
Over Court	R. C. C. Lippincott ...	38·56	192
Clifton	R. F. Sturge	37·85	183

The rainfall was very unevenly distributed over the country, ranging from 48·82 ins. at Coleford to 25·52 ins. at Lechlade. The number of rainy days varied from 222 at Coleford to 147 at Lechlade. The mean fall is 32·58 ins., which is 3·67 ins. *above* the average of the past thirteen years.