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BOROUGH OF TORQUAY.



Annual Report
OF THE
MEDICAL OFFICER OF HEALTH
FOR THE YEAR 1905,
BY
THOMAS DUNLOP, M.B., C.M., D.P.H.,
TOGETHER WITH THE
Annual Reports of the Sanitary Inspectors
AND THE
Report of the Borough Meteorologist.

BOROUGH OF TORQUAY, 1905.

Area of the Borough, 3,858 acres.

Rateable value, £187,000.

Population—Census (1901), 33,625 ; estimated at the middle of 1905, 33,900.

Number of inhabited houses—Census (1901), 6,614.

Average number of persons per house, 5.

Density of population, 8·7 persons per acre.

Crude death rate, 1905, 13·9 per 1000. Average for previous 10 years, 15·5 per 1000.

Corrected death rate, 1905, 14·5 per 1000. Average for previous 10 years, 14·2 per 1000.

Death rate if all visitors excluded, 12·3 per 1000.

Birth rate, 15·4 per 1000. Average for previous 10 years, 17·4 per 1000.

Infantile mortality, 1905, 95. Average for previous 10 years, 134.

Death rate from zymotic diseases, ·94 per 1000.

Mean annual temperature, 51·2.

Hours of Bright Sunshine Recorded, 1774·8.

Total Rainfall, 27·88 inches.



BOROUGH OF TORQUAY.

ANNUAL REPORT

OF THE

Medical Officer of Health

For 1905.

*To His Worship the Mayor, and to the Aldermen and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I beg to present my third Annual Report on the health of the inhabitants, and the sanitary circumstances of the Borough of Torquay. The report also contains details of the administration of the Factory and Workshops Act as required by the Secretary of State for the Home Department.

It will be noticed that there is again a slight decline in the birth-rate, which is 15·4 per 1000, against 15·7 in 1904. The gross death-rate—13·9—exactly the same as was recorded in 1904, is very satisfactory. A curious coincidence about the deaths is the fact that the number of deaths of males—211—is exactly the

same as in 1904, and of females 261, only one less than last year. Forty-five per cent. of the total deaths were those of persons over 65 years of age. The infantile mortality—95 per 1000 births—is considerably less than in 1904, when it equalled 120.

I would draw your attention to the details of the epidemic of measles which occurred in the first half of the year, and to the effect it had on the attendance in the elementary schools. The lessons learnt from it should be a guide to us in dealing with future outbreaks.

My appointment as Medical Officer to the Education Authority has considerably helped me in my efforts to improve the healthiness of the town. Principally by giving me early notice of infectious illness, and by giving me a means of access to premises, so that I can form some estimate as to their sanitary condition.

I have to thank the members of the Sanitary Committee, and of the Town Council, for their kindness and support throughout the year, and also members of the Sanitary Staff for their ready assistance.

I am, Gentlemen,

Your obedient Servant,

THOMAS DUNLOP, M.B.

Medical Officer of Health.



THE BOROUGH.

The Borough of Torquay is formed by the civil parishes of St. Mary-Church and Tormoham. The total area of the Borough is 3858 acres. It is divided into nine wards, which, with their populations, according to the 1901 census, are as follows :—

Torre	...	...	...	...	3851
Waldon	...	...	...	...	3576
Upton	...	...	...	...	4339
Ellacombe	...	...	...	...	5911
Strand	...	...	...	...	3129
Torwood	...	...	...	...	3644
St. Mary-Church	...	...	...	...	3312
Babbacombe	...	...	...	...	3264
Chelston	...	...	...	...	2599
The Borough	...	...	...	...	33,625

For the purpose of Sanitary administration, the Borough is divided into three districts, in each of which a Sanitary Inspector has full charge, under the Medical Officer of Health.

No. 1 District.—The whole of the Chelston, Torre, and Waldon Wards, that portion of the Strand Ward on the west side of Fleet Street, and that portion of the Upton Ward on the west side of Union Street.

No. 2 District.—The whole of the Torwood Ward, that portion of the Strand Ward on the east side of Fleet Street, the whole of Ellacombe Ward, and that portion of the Upton Ward on the east side of Union Street.

No. 3 District.—The whole of the St. Mary-Church and Babbacombe Wards.

The principal public Institutions from a Sanitary point of view are—

The Torbay Hospital in the Upton Ward.

The Western Hospital for Consumptives, and the Rosehill Children's Hospital in the Strand Ward.

Smyrna, or the Mildmay Consumptive Home, in the Ellacombe Ward.

St. Barnabas', St. Luke's, St. Raphael's, and Erith House, all Consumptive Homes, situated in the Torwood Ward.

The Borough Sanatorium for infectious diseases is situated on the Newton Abbot Road, just outside the Borough boundary, in the Newton Abbot Rural District. The Corporation possess another Isolation Hospital, also situated outside the boundary, about half a mile from the village of Cockington.

PHYSICAL FEATURES AND GENERAL CHARACTER OF THE DISTRICT.

These are of a highly diversified character, especially the central portions forming the Torquay promontory. In this district the two principal heights are the Warberry, 448 feet, and the Lincombe Hills, 372 feet, forming long ridges running N.E. and S.W., which are composed of the Lower Devonian grits and slates. The lesser heights, such as the Braddons, Waldon Park, and Chapel Hill, are formed of Middle Devonian limestone, which rests above the grits and slates mentioned.

On each side of this central area, viz., at St. Mary-Church and Chelston, rocks higher in the Geological scale for the most part prevail. These rocks belong to the Permian formation, and consist of beds of Breccia—a kind of conglomerate—and sandstones of a deep red colour, owing to the presence of peroxide of iron.

There is very little clay in any portion of the area and what does occur is of the nature of marl, and is confined to the lower levels of certain valleys or depressions, so that rain is not detained on the surface, as it rapidly disappears through these rather pervious rocks and soils.

METEOROLOGY.

Full details of the Meteorology of the Borough will be seen in the appended Annual report of Mr. F. March, F.R. Met. Soc., M.P.S., Borough Meteorologist; but the following resumé of the climatic conditions may be of interest:—

	1904.	1905.
Highest Maximum Temperature	78°·0	78°·7
Lowest Minimum	28°·0	25°·8
Mean Maximum	56°·5	56°·8
Mean Minimum	46°·3	45°·6
Mean of Maximum and Minimum	51°·4	51°·2
Difference from average	+0°·3	—
No. of days on which rain fell	171	148
Total fall in inches	33·73	27·88
No. of hours of bright sunshine	1735·7	1774·8

THE CLIMATE OF TORQUAY.

In last year's report I gave a table (quoted from "The Lancet") showing the character of the winter weather at various English Health Resorts, and a comparison was made with that of Foreign Health Resorts, such as Nice and Florence. The principal points demonstrated were that, although it was slightly warmer in the latter, yet the nights at Torquay were just as warm as those of Nice, while the difference between the day and night temperature was less here than abroad. That Torquay enjoys an excess of sunshine during the winter months over most health resorts is an indisputable fact. The other special features of its climate are equability of temperature and dryness of the air.

The benefit of living under such climatic conditions must be apparent to all, but it is inestimable to those who are asthmatical, or who are sufferers from chronic bronchitis. To the aged and infirm, who are extremely sensitive to every change of temperature, life under such conditions is prolonged and made worth living. The bright sunshine and the possibility of being constantly in the open air are most advantageous to children, and those who are delicate have every chance of growing up strong and healthy.

The fiction that in summer Torquay is unbearable on account of the heat appears to be dying a natural death. The meteorological returns have proved that the maximum temperature during July and August is considerably less (some 5 to 10 degrees) than that of London and most towns in the North and Midlands. This is only what one would expect from the position of Torquay; having such a wide sea front, and being flanked on the north-west by Dartmoor, it is constantly fanned by cool breezes from one or other direction. Indeed, it is an ideal summer holiday resort, a fact that is being demonstrated by the increasing number of visitors who year after year spend their holidays here.

WATER SUPPLY.

The water supply of Torquay is derived from an upland surface gathering ground about 15 miles from Torquay, on the borders of Dartmoor. The area of the gathering ground is about 2,241 acres, and is composed of:—

				Acres.
Moorland	...	...	...	584
Woods	...	...	...	75
Woods (new)	...	...	...	30
Land within zone	...	...	...	350
Land under cultivation	...	...	...	212
Grazing	...	...	...	990
Total				2241

At the present time the water is stored in two large reservoirs—the Tottiford Reservoir containing 103,000,000 gallons, and the Kennick Reservoir 194,000,000 gallons.

The supply is augmented by taking water from the Trenchford stream, the yearly average amount being 170,000,000 gallons. In order to reduce to a minimum the possibility of there being any shortage of water in very dry seasons, the Corporation applied for and obtained an Act of Parliament, enabling them to build another reservoir in the Trenchford Valley, impounding the waters of the Trenchford stream. This reservoir will be capable of containing 200,000,000 gallons.

The work of constructing the dam was commenced in February, 1904, and has continued satisfactorily since then. At the present time the excavation of the trench has been completed and the concrete filling almost finished, while the clay core and the embankment are rapidly being placed in position.

In the Parliamentary Session of 1896-7 the Corporation obtained power to purchase the whole watershed. This they did, and were enabled to remove all farms and inhabited buildings from the area, thus doing away with a constant menace to the purity of the water. The reservoirs and all streams and feeders have also been surrounded by zone fences with trenches inside; the latter being intended to catch all surface water, and cause it to percolate through the ground before reaching the streams. The improved quality of the water fully justifies the Corporation in the large expenditure incurred, and has reduced the possibility of pollution to a minimum.

Much labour has during the year been expended in cleaning up and clearing the streams, and in endeavouring to prevent the passage of peaty matters into the reservoirs.

The rainfall on the watershed is taken at four stations, and the results were as follows :—

Kennick	...	...	...	33·79 inches.
Mardon	...	...	...	33·70 „
Blackingstone	...	...	...	21·32 „
Laployd	...	...	...	25·12 „

Average over whole watershed 28·48 inches, or eight inches less than in 1904, when it was 36·49 inches. The average amount of evaporation was 20·09 inches over a water area of about 37 acres.

The water supply is continuous, and the average amount used for all purposes was 32·75 gallons per head per day, against 34·73 gallons in 1904.

Professor Percy Franklin, after visiting the gathering and examining samples of the water, both chemically and bacteriologically, reported as follows :—

“ A source of water supply which, in respect of freedom from suspicion, ranks with the best upland surface supplies in the Kingdom. The water also contains such a small amount of lime and magnesia salts that it possesses all the well-known advantages of very soft water, whilst its slightly alkaline reaction prevents it from having any solvent power on lead.”

During the year I have made regular chemical analyses of the water taken from different parts of the borough, and also of samples taken from the springs and streams feeding the reservoirs. The following results of a recent analysis are typical :—

PHYSICAL CHARACTERS.

Colour ...	...	Slight brownish yellow.
Turbidity ...	...	Cloudy.
Odour ...	...	None.
Deposit ...	...	A very minute amount of vegetable debris.

CHEMICAL RESULTS.

Expressed in parts per 100,000.

Total solids...	...	...	...	...	6·1
Chloride ...	...	...	...	...	1·5
Hardness ...	...	...	...	...	2·4
Nitrites ...	...	...	...	...	Nil
Nitrates ...	...	...	...	...	·12
Free Ammonia ...	...	...	...	...	·000
Organic Ammonia ...	...	...	...	...	·009
Oxygen absorbed in 4 hours at 80° F. ...	...	...	...	...	·066
Poisonous metals ...	...	...	...	...	Nil

From an examination of the above results and a knowledge of the gathering ground, I have no hesitation in classing this water as an excellent one for all domestic purposes.

SEWERAGE.

The sewage of the whole district, and most of the storm-water, is conveyed to the main sewer in Fleet Street. That of the low-level system, which comprises the area covered by the Strand, Torbay Road, Vaughan Parade, Victoria Parade, Beacon Hill, George Street, and Swan Street, being pumped into the main sewer by means of automatic hydraulic pumps. The main sewer is 7 feet in diameter, and runs from Fleet Street to Hope's

Nose, a distance of almost two miles. The outfall is at such a level that the sewage is discharged at all states of the tide. No method of treatment is adopted, as the flow of current is out towards mid-channel beyond Berry Head, and does not under any circumstances return towards the bay.

During the year, after exceptionally heavy rains, complaints have been received of the flooding of certain houses abutting on the St. Mary-Church Road, through the backing of water in the sewer in Broadmead Road, Plainmoor. The Sanitary Committee, considering that the present sewers are of sufficient capacity to take away ordinary heavy rain, do not accept any liability for flooding through exceptional rain storms, but Mr. Garrett, the Borough Engineer, is, without prejudice, endeavouring to remedy the trouble.

The opening out of a new building estate off Fore Street, St. Mary-Church, has caused the Council much anxiety, owing to the difficulty of drainage. The owner of the estate proposed to drain all the houses to a common cesspool, which must necessarily have become a nuisance to the neighbourhood, and also by the possibility of the overflow finding its way on to Oddicombe Beach. This trouble has, however, after much correspondence and numerous conferences, been overcome by the owner agreeing to pay a fair proportion of the cost of laying a new sewer through into Petitor Road to the existing sewer in that road.

Much consideration has also been given to a proposal of the owner of the Mallock Estate, who desires to open up certain land at Livermead for building purposes. Owing to the impossibility of draining them into the Council's system of sewerage, he proposes to drain both the existing houses and those to be erected to a tank situated near the railway, and to fix an electric motor and pumps to lift the sewage into the nearest sewer of the Council. As it was seen to be desirable that this estate should be opened up, and also that the cesspool receiving the sewage of the houses at present built, and which required constant attention, should be done away with, the Council have practically come to terms with the owner to take over the pumping station when erected.

COLLECTION AND DISPOSAL OF REFUSE.

House refuse is removed by the employés of the Corporation, under the Surveyor's Department. In most parts of the town it is removed once a week, but in certain parts twice. It is carted to the destructor works in Upton Valley, and there consumed, about 12,000 tons being dealt with annually. The destructor is

a "Warner Perfectus" of four cells. The boilers are heated from the furnaces, and the steam generated can be used to drive donkey-engine, vertical engine for running blower, 25-horse power engine for running mortar mill and electrical installation. The clinker produced is ground and used for mortar : for this there is a good demand.

POPULATION.

The population of the Borough at the 1901 census was found to be 33,625, of whom 13,339 were males, and 20,286 females. The number of inhabited houses being, 6,614, and the average number of persons per house was 5.

The further we get from the date of the last census, the more difficult it is to give a proper estimate of the population. There is every reason to believe that the population has increased since the last estimate was made. This is indicated by the fact that during the year some 92 new houses have been erected, that a large number of men have come into the town for employment in the construction of the new electric tramways, and that there appears to be fewer unlet houses in the district. This would almost justify the population being estimated at 34,000, but the tendency is always to over estimate, so that I have merely added the natural increase (50) to last year's estimate, which would make it 33,900, and this is the figure I have used to calculate the various rates.

The average number of persons per acre is 8·7.

It is necessary, in preparing statistics and comparing the various death rates of Torquay with those of the whole country, to consider the age and sex distribution of the population. The population of a district, in which the proportions of males to females, or of young persons to old persons, are different to those of the country generally, will suffer more than the whole country from the diseases which particularly affect persons of the age and sex which predominate in the district. In order to ensure a just comparison between the death-rate of such a district and the country as a whole, it is necessary to raise or lower the gross death-rate of the district to what they would be if the proportions of the local population in respect of age and sex were the same as those in the country generally.

As Torquay has a much larger proportion of females to males in its population, and of people at advanced ages, than that of England and Wales, I have calculated a factor by which all Torquay rates have to be multiplied to compare them with those of the whole country. This factor is ·8044.

BIRTHS.

The births registered during the year were 522—males 272, females 250—being 8 less than in 1904. Of the 522 births, 15 were illegitimate.

The numbers registered in each quarter of the year were as follows :—

1st quarter	...	...	...	131
2nd „	...	...	...	139
3rd „	...	...	...	138
4th „	...	...	...	114
				522
Total	...	...	...	522

The birth rate is equal to 15·4 per 1000 of the population, and is ·3 less than in 1904. It is the lowest rate recorded for the Borough.

The following table shows the gradual decline in the Torquay birth-rate. It must, however, be remembered that the birth-rate of England and Wales is also falling, and the age and sex distribution of the population of the district must also be taken into account when comparing it with other places.

Years.	Number of Births.	Torquay Birth Rate, per 1,000 living.	England & Wales Birth Rate, per 1,000 living.
1900	559	16·6	28·9
1901	556	16·5	28·5
1902	540	16·0	28·6
1903	536	15·9	28·4
1904	530	15·7	27·9
1905	522	15·4	27·2

In view of this continued fall in the birth-rate, not only here, but throughout the country, it is necessary that steps should be taken to reduce the high infantile mortality, and I believe that this can, to a certain extent, be accomplished by the systematic teaching of hygiene in our schools, especially to the elder girls, seeing that ten years hence they will have all the responsibilities of motherhood, and on them the health of the next generation will depend.

VACCINATION.

Through the courtesy of Mr. Edwards, the Vaccination Officer, I am able to give the results of primary vaccination for the years from 1897 to 1904. It is very satisfactory to note the large percentage of children protected from this loathsome disease.

Year.	Total births registered	Successfully vaccinated	Insusceptible of Vaccination	Had Small-pox	Number of Certificates from Conscientious Objectors	Died Unvaccinated	Postponed by Medical Certificate	Removed to other districts the Vaccination Officer of which has been appraised	Removed Address unknown	Percentage successfully Vaccinated	Excluding those who died Unvaccinated. Percentage
1897	683	581	2	—	—	59	—	4	20	% 85	% 93
1898	664	544	2	—	10	64	6	7	25	82	90
1899	612	505	6	—	14	67	6	3	11	83	93
1900	596	502	1	—	15	47	7	3	21	84	91
1901	597	491	2	—	16	57	13	1	17	82	91
1902	579	488	2	—	8	61	4	4	8	84	92
1903	565	508	2	—	14	34	1	3	3	90	95
1904	564	476	—	—	20	49	3	6	8	84	92

INFECTIOUS DISEASES.

Under the Torquay Harbour and District Act, 1886, provision was made for the compulsory notification of the dangerous infectious diseases. It also contained similar clauses to those in the Infectious Diseases Prevention Act, 1890, which rendered its adoption unnecessary.

NOTIFICATIONS.

During the year 59 cases of infectious disease were notified. One case of Small-pox, six of Diphtheria, five of Erysipelas, thirty-six of Scarlet Fever, ten of Enteric Fever and one of Puerperal Fever.

Table giving comparison with previous five years.

Notifiable Disease.	1905.	1904.	1903.	1902.	1901.
Small-pox	1	—	2	—	—
Cholera	—	—	—	—	—
Diphtheria	6	4	13	9	5
Membranous croup	—	—	—	—	—
Erysipelas	5	3	3	3	3
Scarlet fever ..	36	28	21	17	62
Typhus fever ..	—	—	—	—	—
Enteric fever ..	10	9	9	8	18
Relapsing fever ..	—	—	—	—	—
Continued fever ..	—	—	—	—	—
Puerperal fever ..	1	1	1	—	1
Plague	—	—	—	—	—
*Chicken Pox ..	—	—	5	33	—
Totals ..	59	45	54	70	89

*In 1903 Chicken Pox was notifiable for the first three months of the year, and in 1902 for the last nine months.

The following table gives the notifications during each month of 1905 :—

	Small-pox.	Diphtheria and Membranous Group.	Enteric Fever.	Puerperal Fever.	Scarlet Fever.	Erysipelas.	Chicken-pox	Total.
January ..	—	—	—	—	2	—	—	2
February ..	—	—	—	—	—	—	—	—
March ..	—	—	1	—	2	—	—	3
April ..	—	—	—	—	3	1	—	4
May ..	—	—	1	—	—	—	—	1
June ..	—	—	—	—	9	—	—	9
July ..	—	—	3	—	3	—	—	6
August ..	1	—	2	—	2	—	—	5
September ..	—	1	1	—	7	—	—	9
October ..	—	3	1	1	5	2	—	12
November ..	—	2	—	—	3	2	—	7
December ..	—	—	1	—	—	—	—	1
Totals ..	1	6	10	1	36	5	—	59

In table III. of the Local Government Board returns on page 41 full details are given of the age of patients, the number occurring in each ward, and the number of such removed to Hospital.

Out of 59 cases, 32 were removed ; this is equal to 54 per cent. They were as follows :—

Small-pox	...	...	1 to Cockington Sanatorium
Diphtheria	...	...	4 to Sanatorium, Newton Road
Scarlet Fever	...	...	24 to " "
Enteric Fever	...	...	2 to Torbay Hospital

STEPS TAKEN TO PREVENT THE SPREAD OF INFECTIOUS DISEASE.

On the receipt of a notification, the house is visited as soon as possible, particulars as to source of infection, milk supply, school attended, drainage, etc., obtained, and if necessary arrangements

made for the removal of the patient to the Sanatorium. Frequently the Medical Attendant notifies that the case is one suitable for treatment in the Sanatorium, a step which greatly facilitates their early removal.

After removal, or on recovery, should the patient be isolated at home, the infected rooms and bedding are fumigated with formaline. Next day the bedding and clothing is removed to the Disinfecting Station, and there sterilised in a steam disinfector.

The disinfector is one of the Thresh Disinfector Company's machines. The building was erected last February, and the disinfector was ready for use early in March. This has made a handsome and extremely useful addition to the Sanatorium, and the machine is of such simple construction that the Caretaker was, after a couple of lessons, able to work it efficiently. It has been working constantly since March without requiring any special attention. Over 300 articles, such as mattresses, pillows, blankets, clothing, etc., being disinfected.

Where it is found that children in an infected house are attending one of the public elementary schools, the Attendance Officer is notified of the case. All cases suspected to be infectious by the School Attendance Officer, and where no doctor is in attendance, are notified to me as Medical Officer to the Education Authority.

MEANS OF ISOLATION.

The Borough Sanatorium, Newton Abbot Road, consists of the administrative Building—a Scarlet Fever ward block, consisting of two wards, with 7 beds in each; and a Diphtheria ward block, two wards, with 7 beds in each. There is also a private ward for one patient, with Nurse's room attached.

ENTERIC FEVER.

The Authorities of the Torbay Hospital have always been found willing to treat cases of Enteric Fever.

THE COCKINGTON SANATORIUM.

When the Chelston Urban District was absorbed by the Borough, the Corporation were compelled to take over the Isolation Hospital of that district. This building is considerably more than half-a-mile from any inhabited house. It has on two occasions been used for the treatment of cases of imported

small-pox, and is always kept in readiness for future cases. I consider it absolutely necessary to have accommodation for the reception of such cases, especially in a health resort such as Torquay, where the introduction of small-pox is not unlikely, and the consequences of an epidemic would be disastrous.

SMALL-POX.

One case was notified early in August. The patient was a travelling pedlar, who had tramped from Plymouth, and when taken ill was staying in a common lodging-house in the town, where he had been for about 10 days. Fortunately, the case was quickly diagnosed, and as the Sanatorium was ready for use, he was soon isolated. The case was of a moderately severe type, the patient having never been vaccinated, and was of a semi-confluent kind on the face, but with the exception of considerable inflammation under the hard skin on the soles of his feet, the patient made an uninterrupted recovery, and was able to be discharged in about six weeks. After his removal to the Sanatorium, the room he had been staying in, with four other men, was fumigated with formaline, and was not allowed to be used again until the bedding had been sterilised in the steam disinfecter, the floor and bedsteads washed with disinfectants, and the walls limewashed. The Public Vaccinator visited the house three times, but had little success in getting the inmates re-vaccinated. This caused me some anxiety, and they were kept under daily observation for a fortnight, but no further cases occurred. I attribute this to the case having been diagnosed just as the rash appeared, the immediate isolation of the patient, and the efficient manner in which the disinfection was carried out. Had other cases occurred, it would undoubtedly have scared away many of the large number of summer visitors then in the town, and considerably shortened the season.

DIPHTHERIA.

Six cases were notified, compared with four in 1904, and 13 in 1903. Four were removed to the Sanatorium. One case proved fatal. One child was discovered suffering from post diphtheretic paralysis while attending school, and was possibly the source of infection in another case.

SCARLET FEVER.

Thirty-six cases were notified, one of which ended fatally. Twenty-four were removed to the Sanatorium. Three cases were distinctly traceable to a child who came from Birmingham here

while desquamating. She had been going about the town in this condition until the other cases occurred in the same house, when her condition was discovered. Seven cases occurred in Chelston, one of whom was a child notified only when peeling profusely. There is no doubt but that she was the source of infection in one or two of these cases. During the year six distinct cases were either notified or discovered in a desquamating state, and it is difficult to say for how many cases they accounted.

The sex and age distribution is as follows :—

	At all ages.	Under 1.	1—5	5—15	15—25	25—65	Over 65
Males	17	—	3	12	1	1	0
Females	19	—	1	16	2	0	0

ENTERIC FEVER.

Ten cases were notified, against nine last year. Two proved rapidly fatal. Two were removed to the Torbay Hospital for treatment. Two cases occurred in one house, the drains of which were found in a very defective condition. In four other cases defective drainage conditions were discovered in their homes. In three cases the disease was distinctly traceable to the consumption of sewage-polluted shell-fish obtained from the River Teign. During the summer and autumn of each year, in spite of widely posted warnings, we invariably get several cases, often fatal, due to this latter cause. The Sanitary Committee decided to communicate with the Local Government Board and the County Council, in the hope of having the matter investigated. They also informed the Sanitary Authorities, whose districts border on the Teign, as to what steps they were taking. As the result of these communications, the Local Government Board requested that I should furnish them with a special report on the subject. This was done, and a copy of it was also sent to the County Council. The outcome was scarcely satisfactory from our point of view, the opinion held by both authorities being that, as the sewage of the various towns and villages on the banks of the Teign was discharged into tidal waters, little or no authority could be exercised over them. The Local Government Board further stated that we were doing all that it was possible to do in the way of warning the public against eating shell-fish from these sources. I cannot help thinking

that had there been a County Medical Officer of Health, devoting his whole time to sanitary work, such matters as these would receive thorough and independent investigation, and doubtless some steps would be taken to remedy the evil. This is not a new complaint, but one that has been with us for many years; nor is it a matter which affects this district alone. Both Newton Abbot and Teignmouth suffer in a similar manner, as the past annual reports of their Medical Officers show.

It may be of interest to give an abstract of a letter I received from the Secretary of the Fishmongers' Company, London, with reference to the connection of sewage polluted cockles to Typhoid Fever. He states:—

“During the past two years the Fishmongers' Company have paid particular attention to the cockles supplied to the London Markets. Numerous samples have been analysed and special attention paid to the method of cooking. As a result of Professor Klein's bacterioscopic examination, it has been shown that cockles and mussels are sterilised if boiled for at least $3\frac{1}{2}$ minutes. The cocklers were advised that if they boiled the cockles for at least that time, they would be allowed for sale in the London Markets. It was found that instead of the shell-fish being properly cooked, they reached the market in a more or less raw state.

The Fishmongers' Company then tried if steam for cooking would be more efficacious than water, and it was found that both cockles and mussels steamed for five minutes were sterilised and the fish, according to experts from Billingsgate Market, were in good marketable condition and really in appearance, if anything, better than when boiled.

The Company thereupon recommended cocklers to use a steaming apparatus, and also suggested the same to the Corporation of London, which was adopted some time back and has worked satisfactorily ever since, with the result that all the cockles on the London Market are steam cooked. The steaming, instead of boiling the shell-fish, is not only of great advantage to the trade, but as changes of water are obviated, necessarily the process must be much cleaner than the old system.”

If steaming for five minutes is sufficient to sterilise shell-fish without altering their appearance, surely some means might be devised to compel dealers to do this before the cockles are sold.

PUERPERAL FEVER.

One case was notified, the patient having been attended in her confinement by a certified midwife. The confinement was said to be normal and the patient remained quite well till the 8th day, when she became very ill and a doctor was called in. The midwife was at once visited and questioned as to the possible cause, but could only suggest that some article of food had been taken. The midwife was prohibited from attending any other case for three weeks and was instructed to boil all washable articles of clothing she had been wearing when attending the case.

Working of the Midwives Act, 1902.

The local administration of this Act is being carried out by a Sub-Committee of the Sanitary Committee. Early in the year all the known midwives in the Borough were communicated with and the requirements of the Act put before them, both by circular and by personal interviews with many of them.

The result has been that six midwives were certified on the ground of having been in *bona fide* practice as midwives for 12 months previous to 31st July, 1902, and one on the ground that she possessed a certificate from one of the recognised Lying-in Hospitals. Besides these certified midwives, there are probably quite as many women uncertified still carrying on this work and who will continue to do so till 1910, when all must be certified who desire to act as midwives. I have visited the certified midwives at their homes several times for the purpose of inquiring as to their mode of practice, and to arrange for the proper keeping of their books, etc.

Most of these women are intelligent and have had a considerable experience in their work as midwives. Two of them, however, if not absolutely illiterate, have to get their daughters or other friends to fill in their case-books for them. Their knowledge of labour is only superficial, and so long as everything goes right they are quite capable, but I doubt whether they are able to detect an abnormal presentation or whether anything is going wrong until it has actually happened, which is unfortunate for the patient. None seem to know or are able to record the time occupied by the various stages of labour. To require such women to carry or attempt to use a catheter is, in my opinion, running an unnecessary risk; the less they interfere with the patient the better.

The Non-Notifiable Infectious Diseases, such as Measles, Whooping Cough, etc., will be dealt with under deaths from these diseases.

SANATORIUM REPORT

FOR THE YEAR ENDING MARCH 31st, 1905.

To the Chairman and Members of the Sanitary Committee.

GENTLEMEN,

At the close of the financial year, 1904-1905, there were three patients under treatment in the Sanatorium, and from that date till March 31st, 1905, twenty-four fresh cases were admitted, making a total of twenty-seven cases treated during the year.

Two were cases of Diphtheria, one a patient suffering from Measles and occupying a private ward, while the remaining were cases of Scarlet Fever. All were discharged cured, except those who were still under treatment at the end of the year.

The patients were in hospital a total of 1,168 days, giving an average stay of 43 days per patient.

The following table shows the cost of working for the twelve months :—

1905.	EXPENDITURE.	£	s.	d.
Diet of Patients		76	9	0
Wages and Diet of Nurses		95	15	6
Laundress		55	0	0
Curator		65	0	0
Surveyor's Account		51	0	1
Tradesmen's Accounts		38	16	10
Rents, Rates, and Insurance		19	16	11
Drugs		3	12	7
Medical Fees		13	13	0
Conveyance of Patients		7	16	0
Coal, Coke, and Wood		40	16	4
Rent of Telephone		10	10	0
Painting		7	10	0
Replacing Condemned Goods		22	8	9
Total		£507	5	0
Fee received for use of private ward	...	£18	1	0

THE COCKINGTON SANATORIUM.

The building was not used during the year. Its cost of maintenance is as follows :—

	£	s.	d.
Caretaker ...	6	5	0
Rents, Rates, and Taxes ...	51	9	1
Total	£57	14	1

The following table gives the cost of this and previous years :—

			£	s.	d.
1898.	30 Patients cost	...	493	13	2
1899.	35 „ „	...	513	14	11
1900.	42 „ „	...	564	2	10
1901.	26 „ „	...	515	15	11
1902.	58 „ „	...	903	6	6
1903.	26 „ „	...	570	12	5
*1904.	26 „ „	...	598	7	5
1905.	27 „ „	...	507	5	0

*NOTE.—Cockington Sanatorium utilised for the treatment of two cases of Small-pox.

Mr. and Mrs. Arnall and Nurse Hunt have carried out their duties to my entire satisfaction. I have heard nothing but praise from the patients for the treatment they have received.

I am, Gentlemen,

Your obedient servant,

T. DUNLOP,

Medical Superintendent.

DEATHS.

During 1905 the number of deaths registered in the Borough was 472—males 211, females 261.

The gross death-rate is therefore equal to 13·9 per 1,000. If it was permissible to eliminate the deaths of 54 visitors, the rate would be equal to 12·6 per 1,000. To obtain the corrected death-rate, it is necessary to add the deaths of 30 persons occurring in Newton Abbot Workhouse, and of one person dying in a public institution in Liverpool, who belong to Torquay; and subtract the deaths of 12 non-residents who died in the public institutions of this town. The total deaths would therefore be 491, and the corrected rate equal to 14·5 per 1,000 per annum.

The following table gives the Torquay death-rates for recent years, compared with those in England and Wales for corresponding years :—

Year.	Number of Deaths.	Death-rate.	Death-rate excluding deaths of Visitors.	Death-rate of England and Wales.
1901	476*	14·1	12·9	16·9
1902	491*	14·6	13·3	16·3
1903	448	13·3	11·5	15·4
1904	482	14·2	12·4	16·2
1905	491	14·5	12·6	15·2

* No record kept of deaths in Newton Workhouse of Torquay residents.

If the death-rate of 14·5 be multiplied by the factor ·8044 to correct it for sex and age distribution, and so make it strictly comparable with that for England and Wales, it would be equal to 11·6 per 1,000 per annum.

During the year there were 23 inquests held, while eight deaths were uncertified.

DEATHS AT VARIOUS AGE PERIODS.

Of the total of 491 deaths—

					Percentage of total deaths.
53	were under 1 year of age	...	equals		10·8
36	„ 1 year and under 5 years	...	„		7·3
12	„ 5 years	„	15	„	2·5
15	„ 15 „	„	25	„	3·1
155	„ 25 „	„	65	„	31·5
220	over 65 years	...	...	„	44·8
Total 491 at all ages.					100·0

The deaths in the various wards are given on Table II., on page 40.

INFANTILE MORTALITY.

The total number of deaths of children under one year of age was 53, or 11 less than in 1904. As there were 522 births registered, the infantile mortality equals 95 per 1,000 births. This is very satisfactory, but I do not think, in a non-manufacturing town like Torquay, this figure should be exceeded. It compares very favourably with that of last year, which was 120, and also with the rate for England and Wales during 1905, which was 128.

Probably the character of the weather during the late summer and early autumn had something to do with it. It has been noticed that if, as we had last summer, there are periodic falls of heavy rain preventing long spells of dry weather, deaths from summer diarrhoea—that most fatal of infant maladies—are much fewer in number.

The following table gives the causes of death among infants for the past five years :—

		1905.	1904.	1903.	1902.	1901.
Measles	...	5	1	0	1	5
Whooping Cough	...	3	1	3	7	0
Influenza	...	0	0	0	0	1
Diarrhoea	...	3	5	3	3	1
Enteritis	...	4	6	3	3	2
Septic Diseases	...	0	0	1	0	0
Phthisis	...	0	0	0	1	2
Other Tubercular Diseases	...	1	0	1	4	2
Bronchitis	...	4	10	6	12	8
Pneumonia	...	5	2	1	4	2
Premature Birth	...	11	18	8	15	19
Heart Disease	...	0	0	2	0	1
Accidents	...	0	0	2	3	1
All other causes	...	17	21	25	37	26
Totals		53	64	55	91	70

The question of infantile mortality is evidently receiving considerable attention from the Local Government Board, as it is this year, for the first time, requiring Medical Officers of Health to fill a table (No. V., page 43), giving exact details as to the cause of death in weeks and months under one year of age.

THE CAUSES OF DEATH.

The causes of, and ages at, death during 1905 will be found in Table IV. at the end of the report.

DEATHS FROM ZYMOTIC DISEASES.

The Zymotic death-rate is the rate caused by deaths from the seven principal zymotic diseases. They are as follows:—Small-pox, measles, whooping cough, scarlet fever, diphtheria, fever (typhus, enteric, and other continued fevers), and diarrhoea.

During the year there were 32 such deaths registered—measles 18, scarlet fever one, whooping cough seven, diphtheria one, fevers two, and diarrhoea three.

The rate is equal to .94 per 1,000 per annum, compared with .38 per 1,000 in 1904. The zymotic death-rate in England and Wales during 1905 was 1.52 per 1,000, so that the rate for Torquay, although considerably higher than that of last year, is much lower than that of the country generally. The cause of the increase is the large number of deaths from measles (18) and whooping cough (seven). The cause of the deaths will be dealt with more fully when considering these diseases.

SMALL-POX.

As previously stated, one case occurred, but no deaths. Details are given under notifiable diseases.

MEASLES.

In my report for 1904, I stated that Measles had been prevalent during the last quarter of the year. The epidemic was at its height during February and March of this year, gradually declined during April, and finally disappeared in May. As Measles is a non-notifiable disease, it is difficult to estimate the number of cases that occurred in the Borough, but if we calculate that 6 per cent. of the cases prove fatal, there must have been between three and four hundred cases, as there were eighteen

deaths registered from this disease. The following table gives the sex and age at death :—

	Under 1 Year.	1—2	2—3	3—4	4—5	5—6	All ages.
Males.	1	1	4	1	0	0	7
Females.	4	1	4	1	0	1	11
Totals.	5	2	8	2	0	1	18

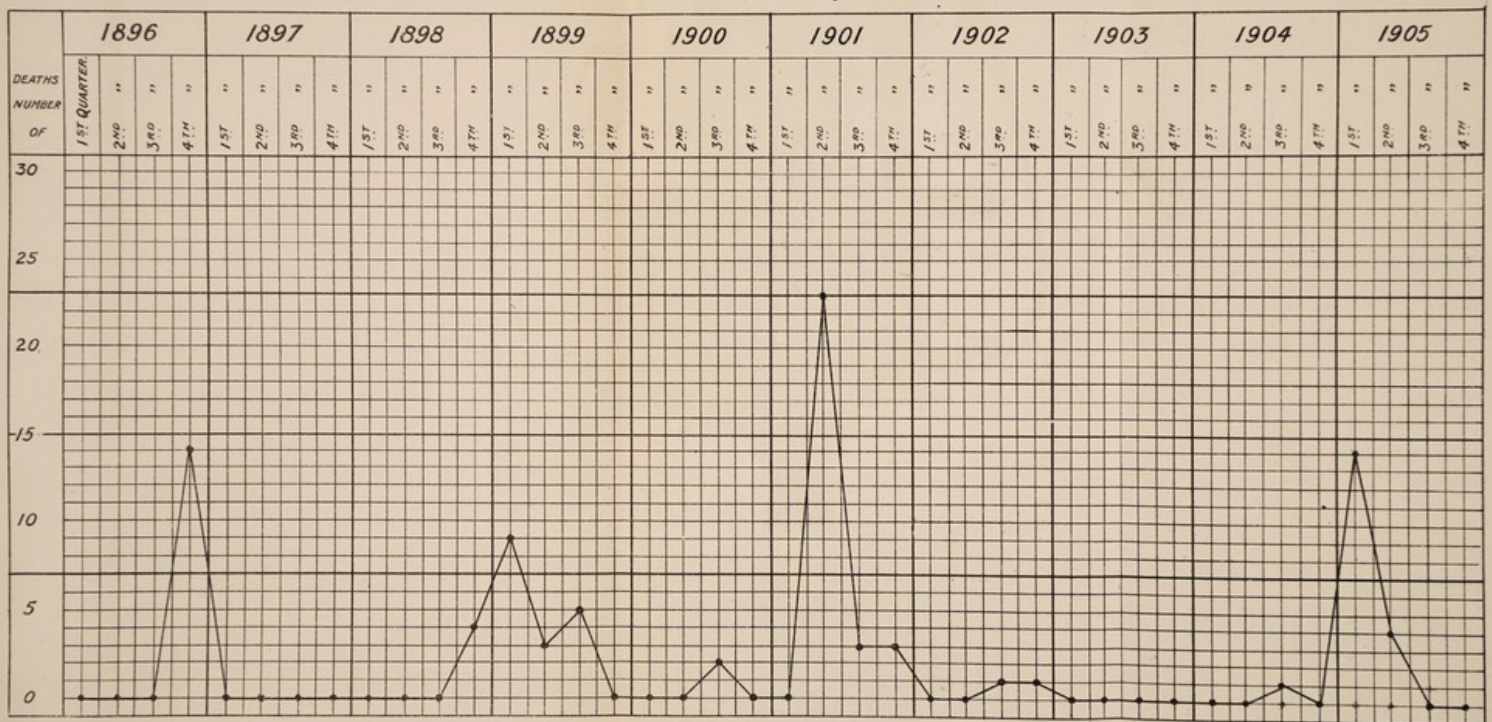
It will be seen that the mortality was greatest among females, and also that the period between 2—3 was the most fatal. Out of eighteen deaths only one occurred in a child over 5 years of age. If it were possible to prevent children under five years catching the disease, the mortality would be very low indeed.

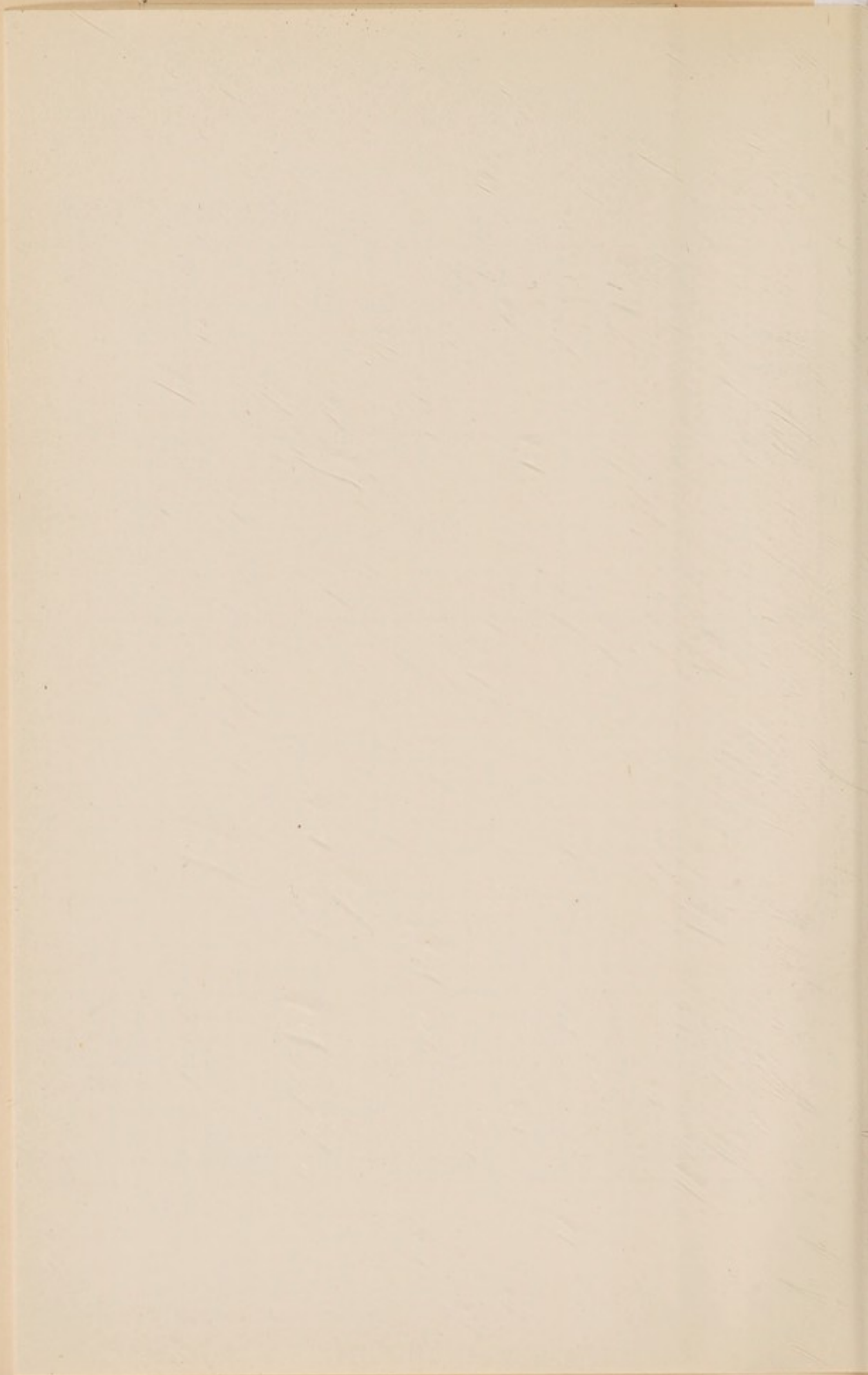
The epidemic may be said to have lasted from the middle of November till the beginning of May, and the infant departments of the following schools were closed for periods of three weeks each. The following table gives the percentage attendance in the upper schools after the closure of the infants' departments :—

MEASLES EPIDEMIC, 1904-1905.

Name of School.	Date of Closure of Infants' Department	Percentage Attendance during Closure of Infants' Department.								
		Boys' School.					Girls' School.			
		1st week.	2nd week.	3rd week.	4th week.	5th week.	1st week.	2nd week.	3rd week.	4th week.
Upton	Nov. 25, '04	90	85·8	90	82	—	81	84	90	82
Torquay National	Dec. 15, '04	Closed 16th Dec. and Xmas. Holi days.					Closed 16th Xmas Holid ays.			
Ellacombe	Jan. 25, '05	85	78	75	71	77	77·4	75	74·3	77·5
Torre	Jan. 31, '05	87	82	88	88	—	84	77	81	82
St. Mary-Church Priory	Mar. 3, '05	84	82	88	—	—	89	87	91	—
Victoria Park Infants	Mar. 13, '05	Elder Children attend Ellacombe					National School.			
Cockington C.E. School	Mar. 20, '05	96·1	92·4	93·3	—	—	93	90	85	—
St. Mary-Church National	Mar. 28, '05	96	96	93·8	95·4	—	92	89	86	85

DEATHS FROM MEASLES — TORQUAY 1896 TO 1905.





Although it cannot be denied that the attendance at these schools (upper) was to some extent affected, yet I do not consider that it justifies the opinion that in future epidemics the whole schools should be closed.

Here it may be desirable to study the course of the disease during past years, and for this purpose I have prepared the chart annexed. It deals with the years 1896 to 1905 inclusive, and we find during that period that four epidemics have occurred. It is apparent, then, that Measles becomes epidemic almost every two years, and we can, to some extent, conclude that all the susceptible elementary school children are attacked during an epidemic, the district then remaining free until another batch of susceptible children appears. This seems to be borne out by the fact that in the last epidemic almost all the deaths occurred among children under 3 years of age.

It may be assumed that the majority of children in the upper schools have either had the disease or are insusceptible to it.

These facts influenced my line of action during the epidemic in dealing with school attendance. After consultation with both the Sanitary Committee and the School Attendance Committee I decided, as soon as I had information that an infants' department had been invaded, to close it for three weeks, the upper departments going on as usual.

I also advised that both the Teachers and School Attendance Officers should see that all children, even if coming from infected houses, if they had had measles previously, should attend the upper departments, but should be excluded from the infants' departments.

In this I have been following the advice given by Dr. News-holme, Medical Officer of Health for Brighton, to his Authority, in dealing with an epidemic of Measles during 1904. Under the heading "Quarantine of Children in Infected Households," he states :—

"It is known that apparently healthy children from infected homes may carry the infection of Scarlet Fever or Diphtheria in their clothes or throats and give it to other children at home. Does the same happen in Measles? It is quite conceivable that a child, not ill with Measles, may convey its infection to others; though not suffering himself from the disease in a recognisable form. I know of no convincing evidence on this point. It is admitted by all that Measles is nearly always, if not always, transmitted by direct personal infection. But in actual practice,

under present conditions, this point may be neglected ; for (*a*) the majority of children over seven years of age have already had Measles ; and (*b*) Measles over this age is a non-fatal disease."

He goes on to show that of the total cases of Measles known to have occurred among children in attendance at elementary schools in Brighton, only 22 occurred in boys' departments, only 19 in girls' departments, and 666 in the infants' departments, and that every one of the deaths from Measles was at ages under six.

If such precautions are to be followed in the future, it seems to me that it is essential that a Measles record should be kept of all elementary school children. I also consider that some system ought to be adopted in which either the School Attendance Officer or the Head Teacher of each school should at once notify every case of Whooping Cough, Chicken-pox, Measles, Mumps, Ring-worm or Itch, or any case in which it is suspected that these diseases exist, and also any suspected cases of Small-pox, Diphtheria or Scarlet Fever.

I have been led to these conclusions both by my experience of the last epidemic and by a perusal of a recent report of Dr. Kerr to the London Education Committee on Measles.

He opens with the statement that Measles is the most fatal disease of childhood. He might have added that it is a disease the prevalence and fatality of which have not been much affected by modern sanitary improvements. Statistics show that the mortality is very much greater in infancy and early childhood than at a later age. According to the last published returns of the Registrar General for 1903, 94 per cent. of the total deaths from Measles were those of children under five years old.

Dr. Kerr details an experiment carried out under the direction of the London Education Committee by Dr. Thomas and Dr. Davies, the Medical Officer of Health of Woolwich. The borough was divided into two. In the eastern half an attempt was made to suppress every appearance of Measles in a school by rigorous class closure, while in the western half the system of excluding individual children was followed. The result of the experiment was interesting, and the statistics showed that class closure had been much more costly in interfering with school work than the exclusion of individual children. The loss of attendance under the system of individual attendance was less than half the loss under the other system of class or school closure. Dr. Kerr draws attention to the desirability of having the Measles history of every child kept by the teachers, and in the schools over which he has control there is a system in force by which, when a child enters

school for the first time, these facts are entered on a card, which is kept up to date, so that a teacher at any time knows how many susceptible children there are in his class or school. Dr. Kerr holds that the balance in favour of closure, even at the earliest opportunity, is doubtful, and that later it is without doubt futile. His final conclusions are that in the exclusion of individuals in face of an outbreak of measles the ultimate solution of the problem will be found ; that the exclusion of unaffected children from infected households is necessary only in infants' departments ; and that " school closure for measles can never take the place of teachers specially trained in school hygiene, imbued with the ideals that constitute a ' sanitary conscience,' and working in good hygienic surroundings."

WHOOPING COUGH.

During January, February and March, Whooping Cough was very prevalent in the Upton Ward, and in June in Chelston. Seven deaths were attributable to this cause, all being children under five years of age. The attendance at St. James' Schools was considerably affected, chiefly in the baby classes, but at no time did I consider that the closure of the school would prevent the spread of the disease. Early in July the attendance in the Chelston C.E. Schools, infants' department, became so seriously affected that I felt justified in advising its closure for three weeks. It is in a case like that of the St. James' Schools that the folly and unfairness of the action of the Board of Education in the withdrawal of Article 101* is apparent. If a whole department is closed the average attendance is not affected ; but if, on the score of health, a single class is closed by the Council acting on the advice of the Medical Officer of Health, their whole attendance is lost and the effect upon average attendance and consequent grant is enormous. So that although when one would feel justified in closing a single class, yet the consequence of such action is so disastrous that it resolves itself into a question of either closing a whole department or taking no steps at all. The only remedy for this appears to be the introduction of a system by which, when the attendance has fallen to such an extent as to seriously affect the grant, the department would be closed independently of the question of health.

CHICKEN POX.

Only a few cases came under the notice of the Sanitary Department. After an outbreak in a large private school, all the infected rooms were fumigated.

MUMPS.

Very few cases occurred in the Borough.

INFLUENZA.

Eleven deaths were registered as due to Influenza, seven being in persons over 65 years of age.

DIARRHŒA.

Only three deaths were attributable to diarrhœa, all being infants under one year of age. Last year there were six.

ENTERITIS.

Seven deaths were attributable to this cause. In classifying these deaths the instructions of the Local Government Board have been carefully followed. There seems to be a difference of opinion among Medical Officers of Health as to whether the deaths from Enteritis should or should not be included among the Zymotic deaths. In my opinion they should not, for if they are known to be of a Zymotic character they should be included among the diarrhœa deaths. It is probable that most of the cases that occur among infants are due to injudicious feeding.

PHTHISIS AND TUBERCULAR DISEASES.

The number of deaths registered as being due to Phthisis was 54, of whom 19 were visitors. As nine of these deaths occurred in public institutions, they may be deducted as non-residents, leaving a total of 45 deaths for the year, against 41 in 1904. The death-rate per 1000 is 1·32.

The rates per 1000 for the past five years are as follows :—

1905.	1904.	1903.	1902.	1901.
1·32	1·21	1·10	1·42	2·02

Other forms of Tubercular disease accounted for 8 deaths, against 12 in 1904.

On the occurrence of a death from Phthisis in a private house, a notice is sent to the occupiers, offering to fumigate the room with formaline free of cost.

CANCER, MALIGNANT DISEASE.

Cancer was responsible for 47 deaths, of whom two were visitors and one occurred in the Newton Abbot Workhouse. In 1904 there were 42, and in 1903, 47. Dr. Tatham, in his analysis of the cause of death during 1903, the last available returns for England and Wales, states that the total deaths attributable to Cancer or Malignant disease amounted to 29,089, exceeding by 2,795 the average number in the previous ten years, corrected for increased population. So that in the country generally there is an undoubted increase of Cancer.

It must be borne in mind that in a health resort such as Torquay, Cancer patients are frequently sent in the hope that the mild climate and bright sunshine may possibly prolong their lives. This materially increases the death-rate from this disease. Again, as I previously stated, no conclusion of any value can be deduced from a bare comparison between the death-rates of two populations very differently constituted as to age and sex. In a community such as Torquay, where the number of persons at advanced ages and of females is greater than that pertaining to the country as a whole, we expect to find a greater number of persons dying from Cancer.

The death-rate from Cancer in Torquay during 1905 was equal to 1·38 per 1000 per annum. If this rate is corrected for age and sex distribution, it would be only 1·08 per 1000. The last published rate for England and Wales is for 1903, when it equalled ·87 per 1000.

AGE AND SEX DISTRIBUTION OF CANCER DEATHS.

	under 30	30—35	35—45	45—55	55—65	65—75	over 75	Totals
Males	1	1	0	1	2	7	2	14
Females	0	1	8	5	6	7	6	33
Total	1	2	8	6	8	14	8	47

In the following table the chief headings under which deaths from Cancer occurred are given :—

REGISTERED DEATHS FROM CANCER (MALIGNANT DISEASE),

Seat of Disease.	Sarcoma.		Carcinoma.		Malignant Disease or Cancer.		Total.
	M.	F.	M.	F.	M.	F.	
Face, Jaw, Tongue	0	0	1	0	1	0	2
Throat and Thorax	0	0	3	1	0	1	5
Oesophagus	0	0	1	0	0	0	1
Stomach and Pylorus	0	0	4	2	1	0	7
Liver and Pancreas	0	0	1	2	0	4	7
Intestines (excluding Rectum) ..	0	0	0	1	0	2	3
Rectum	0	0	0	0	1	1	2
Breast	0	0	0	4	0	6	10
Uterus and Appendages ..	0	1	0	6	0	1	8
Parts not specified	1	0	0	0	1	0	2
Totals	1	1	10	16	4	15	47

SANITARY WORK, 1905.

There have been no changes in the staff of the Sanitary Department during the year. Full details of the work of the Inspectors are contained in their reports, which are appended.

POLLUTION OF STREAMS.

As stated in my last report, steps had been taken to prevent the pollution of the stream running through the Rosery and Recreation Grounds, by having the drainage of several private houses and that of Torre Station, which discharged into it, cut off. This has now been completed, the Railway Authorities having laid down a complete system of sewerage for the Station,

SLAUGHTER HOUSES.

There are eight slaughter-houses in the Borough, one new one in the Barton district having been erected. Four are registered, one has a perpetual license, while three require to be licensed each year.

I have inspected them several times during the year, and on the whole found them kept clean and in a satisfactory condition. In April the Local Government Board's model bye-laws were adopted by the Council, with one or two slight modifications. They are now in force and enable us to have the buildings regularly limewashed, and enforce other matters of cleanliness.

The fact of having so many private slaughter-houses, and also that a considerable amount of meat is brought in from a distance by train, renders the proper inspection of meat impossible.

No complaints reached me during the year of the nuisance that used to arise from the spreading of slaughter-house manure outside the district.

SALE OF FOOD AND DRUGS ACT.

Samples are taken by the County Police. The following is a summary of their action under the Act :—

Article.	No.	Result of Analysis.	Remarks.
Beer	6	Genuine	1 sample was deficient in milk fat 6·7%. Vendor cautioned by Police.
Butter	6	„	1 sample contained 19·7% added water. Vendor fined 3ls. 6d. and 10s. 6d. costs.
Gin	6	„	1 sample deficient in milk fat 16%. Vendor fined 40s. and 16s. 6d. costs.
Milk	46	39 genuine 7 not genuine	1 sample deficient in milk fat 4·7%. Vendor cautioned by Police.
Sugar	6	Genuine	1 sample contained 8% added water. Vendor to pay costs of prosecution, 6s.
Tea	6	„	1 sample contained added water 9·17%. Vendor fined 4s. 6d. and 15s. 6d. costs.
Whisky	12	„	1 sample was deficient in milk fat 11%. Vendor fined 5s. and 12s. 6d. costs.
			1 sample, although genuine, was coloured with annatto.
Total	.. 88		

It is satisfactory to note that after the issue of the circular to Milk Dealers in the Borough and Dairy Farmers on the use of boracic acid as a preservative in milk, no samples were found to contain it,

MILK.

The system of inspecting both the cowsheds and dairies in the Borough, and also the outside dairy farms from which many dealers receive their supply, is carried out twice a year. Particulars are obtained of the condition of the cowsheds as to cleanliness, lighting, ventilation, and paving; the washing of milk vessels; cleanliness of dairies, etc.; the water supply as regards its freedom from pollution; and the number and condition of the cows being milked.

After these inspections a complete register is compiled of all dairies and cowsheds in the Borough, together with the farms outside which supply them with milk, etc. This register is printed in the form of a bill, and is posted up throughout the town, copies being forwarded to all dairymen and farmers concerned. Such bills are a guarantee that we are satisfied with the sanitary state of the places inspected, and is in force for six months. Thus two thorough inspections are made each year. It is satisfactory to be able to report that the farmers meet us with every courtesy, and endeavour to carry out any improvements that are suggested. The dairies everywhere are beautifully kept, and there is a noticeable improvement in the condition of the cowsheds. Cowsheds, which in the past rarely saw a whitewash brush, are now limewashed twice a year; cobble paving, which is almost impossible to keep clean, has in many places been replaced by brick paving. It must also be remembered that in South Devon, for the greater part of the year, the cows are kept out night and day, only being brought in at night from the middle of December to the end of March, so that the animals live under the best conditions possible.

It is to be regretted that although improvement is taking place in the proper housing of cows, yet there is little change in the method of milking. Most of the milking is done by men and boys, who in most instances come straight from the work they are at without any idea of washing their hands before beginning, and it is seldom that attention is given to the teats and udders of the cows, which are often soiled with excrement. Milking appears to be an operation in which speed is the great consideration, little regard being paid to cleanliness. Too much faith is put in the fact that the milk is strained. Of what use is this if the milk contains a solution of the substance that has fouled it? Dairy farmers seem to have little idea how easy it is for milk to become contaminated and thus cause an immense amount of sickness, especially among children.

There are 92 registered dairymen and cowkeepers in the Borough receiving milk from 75 farms situated outside the district,

FACTORY AND WORKSHOPS.

Details of the working of this Act may be found in the reports of the Sanitary Inspectors. As far as practicable they endeavour to visit each workshop and outworker once a year. After three years' experience they soon discovered certain places which require special attention, while others are always found what they ought to be. Fortunately, any requirements of the Inspectors have always been carried out on verbal notice to the occupiers.

BAKEHOUSES.

I always inspect these premises in company with the Inspectors. There are 57 on the register, two of which have been granted certificates as underground bakehouses. For the most part they are usually found clean and well looked after. Occasionally I have not been satisfied that the limewashing has been done recently, but I have only to ask, for it to be done.

OUTWORKERS.

Very little work is done by outworkers. In order that I may obtain the lists of these without friction, I have drawn up a printed circular calling the attention of the employers to the necessity of furnishing me with the names. In many cases we find that the outworkers are persons in a small way of business for themselves. We have not had to complain of the condition of their rooms and in no instance has a case of infectious sickness been reported from such houses.

OFFENSIVE TRADES.

Tripe boiling appears to be the only offensive trade carried on in the Borough. One building, situated in Upton, is suitable for the purpose, and is always found in a clean and satisfactory condition. Towards the end of 1904 another establishment was discovered in Hele, and as in its then condition it was unsuitable for the purpose, the owner was called upon to carry out such alterations as would insure the prevention of nuisance. After considerable delay these alterations were effected and permission given to carry on the work.

There are several marine stores in the Borough, and although they are not particularised as offensive trades, yet the owners must have the permission of the Sanitary Authority to carry them on. Several inspections of these places have been made.

COMMON LODGING-HOUSES.

There are five registered common lodging-houses in the Borough. They have been regularly inspected during the year, and on the whole were found to be kept in a fairly satisfactory state. In one instance overcrowding of a room was detected, but it was discontinued on a warning being sent to the owner.

HOUSING OF THE WORKING CLASSES.

The members of the working classes appear to be well housed. Many houses of low rent are erected every year, and are no sooner ready for habitation than they are occupied. Complaints of overcrowding are rare. A house-to-house inspection was made of a terrace of tenement houses in Upton. Some dirty rooms, sinks, etc., were found and afterwards remedied.

HOUSE DRAINAGE.

The inspection and testing of the drains of all new houses is done by the Sanitary Inspectors, some 70 systems having been tested during the year.

The granting of Sanitary Certificates by the Corporation.

The number of certificates granted during the year was 66; in 1903 there were 89, and 66 in 1902. This is very satisfactory, as it is an assurance that these houses have had all their sanitary arrangements brought up to date. It also shows that the public are beginning to recognise the necessity for some assurance that the drainage of their houses is in a thoroughly sanitary condition too often, however, intending tenants are satisfied with the verbal assurance of agents or owners that this is the case, only to find that when a test is made the drains are defective. I consider that no person should be satisfied with anything less than a certificate not more than three years old. It is well known that in Torquay, where large numbers of the houses are built on the sides of the hills, there are frequent subsidences which are likely to crack the joints of drain pipes; this allows the roots of trees and shrubs to find their way into the pipe, where they soon form a thick matting, causing complete blocking of the drains. I have on several occasions seen pipes so filled that it has been impossible to pass a walking stick through them.

FACTORY AND WORKSHOPS ACT, 1901.

Factories, Workshops, Laundries, Workplaces, and Homework

1.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories (Including Factory Laundries)	—		
Workshops (Including Workshop Laundries)	175	33	Nil
Workplaces	30		
Homeworkers' Premises	10		
Total	215	33	Nil

2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Fouud.	Remedied.	Referred to H.M. Inspector.	
<i>Nuisances under the Public Health Acts :—*</i>				
Want of cleanliness	22	22	0	0
Want of ventilation	4	4		
Overcrowding	2	2		
Want of drainage of floors				
Other nuisances				
† Sanitary accommodations { insufficient	5	5		
unsuitable or defective				
not separate for sexes				
<i>Offences under the Factory & Workshop Act :—</i>				
Illegal occupation of underground bakehouse (S. 101)				
Breach of special sanitary requirements for bakehouses (SS. 97 to 100)				
Failure as regards lists of outworkers (S. 107)				
Giving out work to be done in premises { unwholesome (S. 108)				
which are { infected (S. 110)				
Allowing wearing apparel to be made in premises infected by scarlet fever or smallpox (S. 109)				
Other offences				
Total	33	33	Nil	Nil

* Including those specified in Sections 2, 3, 7, and 8 of the Factory Act as remediable under the Public Health Acts.

† Section 22 of the Public Health Acts Amendment Act, 1890, has been adopted.

3.—OTHER MATTERS.

Class.							Number.	
Matters notified to H.M. Inspectors of Factories :—							Nil	
Failure to affix Abstract of the Factory and Workshop Act (S. 133)							1	
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (S. 5)							{ Notified by H.M. Inspector Reports (of action taken) sent to H.M. Inspectors	
Other								
Underground Bakehouses (S. 101) :—								
Certificates granted during the year							0	
In use at the end of the year							2	
Homework :—							Number of	
Lists of Outworkers* (S. 107) :—							Lists.	Outworkers.
Lists received							18	36
Addresses of outworkers { forwarded to other Authorities received from other Authorities								
Homework in unwholesome or infected premises :—							Wearing Apparel.	Other.
Notices prohibiting homework in unwholesome premises (S. 108)								
Cases of infectious disease notified in homeworkers' premises							Nil	Nil
Orders prohibiting homework in infected premises (S. 110) ..								
Workshops on the Register (S. 131) at the end of the year.								
Important classes of workshops, such as workshop bake-houses, may be enumerated here.	Bakehouses						57	
	Total number of workshops on Register (including homeworkers' premises) ..						342	

* The Lists should be received twice in the year. The year's figures required in the Table are then obtained by adding together the two half-yearly totals.

TABLE I.

VITAL STATISTICS OF WHOLE DISTRICT DURING 1905 AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		Total Deaths Registered in the District.				TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	Deaths of Non-Residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	NET DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate.*	Under 1 year of age		At all ages.					Number.	Rate.*
				Number.	Rate per 1,000 Births registered.	Number.	Rate.*					
1	2	3	4	5	6	7	8	9	10	11	12	13
1895.	33100	652	19.6	102	155	583	17.6	41	55		528	15.9
1896.	33200	650	19.5	107	163	569	17.1	43	41		528	15.9
1897.	33300	630	18.9	81	128	502	15.0	43	83		419	12.5
1898.	33400	626	18.7	83	132	529	15.5	50	70		459	13.7
1899.	33500	573	17.0	84	143	570	17.0	31	49		529	15.5
1900.	33600	559	16.6	70	124	488	14.5	41	58		430	12.8
1901.	33625	556	16.5	70	125	504	15.0	51	28		476	14.1
1902.	33625	540	16.0	84	155	529	15.7	63	38		491	14.6
1903.	33800	536	15.9	51	95	455	13.4	57	28	21	448	13.3
1904.	33850	530	15.7	64	120	473	13.9	42	20	29	482	14.2
Averages for years 1895—1904.	33500	585	17.4	80	134	520	15.5	46	47	—	479	14.2
1905.	33900	522	15.4	50	95	472	13.9	46	12	31	491	14.5

* Rates in columns 4, 8, and 13 calculated per 1,000 of estimated population.

NOTE.—The deaths included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public Institutions" to be taken into account for the purposes of these tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses, and lunatic asylums.

TABLE II.

VITAL STATISTICS OF SEPARATE LOCALITIES IN 1904-5.

LOCALITIES.	Population Census 1901.	1904.			1905.		
		Births registered.	Deaths at all Ages.	Deaths under 1 year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.
Torre	3851	50	51	5	50	76	4
Waldon	3576	42	45	4	39	42	4
Upton	4339	92	84	13	87	63	8
Ellacombe... ..	5911	124	82	16	118	82	13
Strand	3129	51	50	11	52	43	5
Torwood	3644	21	51	2	27	37	0
St. Mary-Church...	3312	47	49	6	62	52	7
Babbacombe	3264	63	36	4	52	46	7
Chelston	2599	34	25	3	30	31	2
The Borough	33625	524	473	64	517	472	50

NOTE.—This table only includes deaths registered in the district.

TABLE III.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE
YEAR 1905.

NOTIFIABLE DISEASE.	Cases notified in whole district.							Total cases notified in each locality.								No. of cases removed to hospital fr'm each locality									
	At all ages.	At Ages+—Years.						Torre	Waldon	Upton	Ellacombe	Strand	Torwood	S. Marych.	Babc'mbe	Chelston	Torre	Waldon	Upton	Ellacombe	Strand	Torwood	S. Marych.	Babc'mbe	Chelston
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards																		
Small-pox ..	1	—	—	—	—	1	—	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	.	.	.
Cholera ..	—	—	—	—	—	—	—	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Diphtheria ..	6	—	—	4	1	1	—	.	3	.	3	.	.	.	.	.	2	.	2	.	.	.	.	.	.
Membranous croup ..	—	—	—	—	—	—	—	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Erysipelas ..	5	1	—	—	1	2	1	1	1	.	.	.	.	.	3	.	.	.	.	.	.	.	.	1	.
Scarlet fever ..	36	—	8	25	2	1	—	1	5	2	7	2	7	4	.	8	1	4	2	4	2	2	4	.	5
Typhus fever ..	—	—	—	—	—	—	—	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enteric fever ..	10	—	2	2	—	6	—	1	1	1	4	.	2	1	.	.	1	.	1	.	.	.	.	.	.
Relapsing fever ..	—	—	—	—	—	—	—	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Continued fever ..	—	—	—	—	—	—	—	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Puerperal fever ..	1	—	—	—	1	—	—	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Plague ..	—	—	—	—	—	—	—	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals ..	59	1	10	31	5	11	1	3	10	4	14	3	9	5	3	8	2	6	2	7	3	2	4	1	5

NOTES.—The localities adopted for this table are the same as those in Tables II. and IV.

Isolation Hospital :—Newton Abbot Road, outside the Borough.

TABLE IV.

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1905.

CAUSES OF DEATH.	DEATHS AT THE SUBJOINED AGES OF RESIDENTS OCCURRING IN OR BEYOND THE DISTRICT							Total Deaths whether of Residents or non Residents in Public Institutions in the District
	All ages.	under 1	1 and under 5	5 and under 15.	15 & under 25.	25 & under 65.	65 & upwards	
Small-pox	—	—	—	—	—	—	—	—
Measles	18	5	12	1	—	—	—	—
Scarlet Fever	1	—	—	1	—	—	—	—
Whooping-cough	7	3	4	—	—	—	—	—
Diphtheria and Membranous croup	1	—	—	1	—	—	—	—
Croup	1	—	1	—	—	—	—	—
Fever { Typhus	—	—	—	—	—	—	—	—
Enteric	2	—	—	—	—	2	—	1
Other continued	—	—	—	—	—	—	—	—
Epidemic influenza	11	—	—	—	—	4	7	—
Cholera	—	—	—	—	—	—	—	—
Plague	—	—	—	—	—	—	—	—
Diarrhoea	3	3	—	—	—	—	—	—
Enteritis	7	4	—	1	—	—	2	—
Puerperal fever	—	—	—	—	—	—	—	—
Erysipelas	—	—	—	—	—	—	—	—
Other septic diseases	1	—	—	—	1	—	—	1
Phthisis	45	—	—	—	8	33	4	11
Other tubercular diseases	8	1	3	1	1	2	—	2
Cancer, malignant disease	47	—	—	1	—	24	22	4
Bronchitis	42	4	2	2	—	3	31	3
Pneumonia	25	5	5	1	—	6	8	1
Pleurisy	2	—	—	—	—	1	1	—
Other diseases of respiratory organs	10	—	—	—	—	5	5	—
Alcoholism	7	—	—	—	—	5	2	—
Cirrhosis of liver }	—	—	—	—	—	—	—	—
Venereal diseases	3	3	—	—	—	—	—	1
Premature birth	11	11	—	—	—	—	—	—
Diseases and accidents of parturition	2	—	—	—	—	2	—	—
Heart diseases	21	—	—	—	—	11	10	—
Accidents	6	—	—	—	—	3	3	1
Suicides	3	—	—	—	1	1	1	1
All other causes	207	14	9	3	4	53	124	20
All causes	491	53	36	12	15	155	220	46

TABLE V.

INFANTILE MORTALITY DURING THE YEAR 1905.

DEATHS FROM STATED CAUSES IN WEEKS AND MONTHS UNDER ONE YEAR OF AGE.

CAUSE OF DEATH.				Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
ALL CAUSES.	Certified	9	3	3	4	19	4	2	4	3	4	2	2	3	2	3	3	3	51	
	Uncertified	1	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	2	
Common Infectious Diseases.	Small-pox	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Chicken-pox	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Measles	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	1	5	
	Scarlet Fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Diphtheria: Croup	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Diarrhoeal Diseases.	Whooping Cough	-	-	1	-	1	-	-	-	-	-	-	-	1	-	1	-	-	3	
	Diarrhoea, all forms	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	
	Enteritis	-	-	-	1	1	-	-	1	1	1	-	-	-	-	-	-	-	4	
	(not Tuberculous)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Gastritis, Gastro-intestinal Catarrh	-	-	-	1	1	-	-	-	-	-	1	-	1	-	-	-	-	3	
Wasting Diseases.	Premature Birth	7	2	1	1	11	-	-	-	-	-	-	-	-	-	-	-	-	11	
	Congenital Defects	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	
	Injury at Birth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Want of Breast-milk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Atrophy, Debility, Marasmus	-	-	-	-	-	-	2	-	-	1	-	-	-	-	-	-	-	3	
Tuberculous Diseases.	Tuberculous Meningitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Tuberculous Peritonitis:	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	
	Tabes Mesenterica	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Other Tuberculous Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Erysipelas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
(not Tuberculous)	Syphilis	-	-	-	-	-	-	1	2	-	1	-	-	-	-	-	-	-	4	
	Rickets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Meningitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	(not Tuberculous)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Convulsions	1	-	-	1	2	-	-	1	-	1	-	1	-	1	-	-	-	5	
	Bronchitis	-	-	1	1	2	-	-	-	-	-	1	-	-	-	-	1	-	4	
	Laryngitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Pneumonia	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	2	
	Suffocation, overlaying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Other Causes	2	1	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	3	
				10	3	3	5	21	4	2	4	3	4	2	2	3	2	3	3	53

District (or Sub-Division) of NEWTON ABBOT.

POPULATION.

Births in the year { legitimate - 507.
 { illegitimate - 15.

Estimated to middle of 1905.
 33,900.

Deaths from ALL CAUSES AT ALL AGES, 491.

BOROUGH OF TORQUAY.

SANITARY INSPECTORS' REPORTS.

CHIEF SANITARY INSPECTOR'S REPORT.

TOWN HALL CHAMBERS,

12th February, 1906.

*To the Mayor, Aldermen, and Councillors of the
Borough of Torquay.*

GENTLEMEN,

I have the privilege to lay this, my Twenty-Eighth Annual Report, before the Urban Sanitary Authority.

It will not be found to differ much, either in the nature or quantity of the work done, from its predecessors.

The duties principally consist in the inspection of premises upon complaint or after infectious disease has occurred; or at request of agents or owners of property for sanitary repairs prior to re-letting, and sometimes sale of, the property.

HOUSE INSPECTION.

One hundred and seven thorough house inspections were made, of which thirty-four were put in such a good sanitary condition that satisfactory sanitary reports were issued. Eighteen of these were superior houses let for more or less lengthy terms; the others were ordinary small houses and shops, where the owners did the necessary works to abate insanitary conditions and requested the official approval of the same.

DISTRICT INSPECTION.

A house-to-house inspection of the thirty-two houses comprising Rosery Cottages, Chelston, was made and resulted in the finding of indoor sinks in all cases, a most prolific source of sore throats as proved by many of the occupiers suffering from them, also the sanitary conveniences were scarcely partitioned off at all from the scullery-washhouse, and in some instances food was discovered placed on the flat roofs of the w.c.'s.

Letters were written to all the persons concerned, and so far the result has been that the requisite remedial measures have been adopted in sixteen of the cottages.

I am pursuing this matter till all have been treated, which I trust to be able to do as usual without recourse to legal proceedings.

TORRE STATION.

The drainage of Torre Railway Station having for a long time caused trouble by discharging into a brook, which runs through the Rosery to the Bay, has at last been properly tackled, and in the early summer a scheme was drawn up, whereby the whole system could be carried into the Avenue Road sewer.

More than a quarter of a mile of pipes were laid, with inspection chambers at proper intervals, up the back approach to the Station and across the coal-truck lines to the up-platform, where suitable ventilators were fixed. The new system has worked well, as reported to me by the Engineering Inspector from Newton quite recently. A further improvement in the provision of separate conveniences for the Station men is now in hand.

TESTS AND CORRESPONDENCE.

The number of tests of various kinds, which were applied to drains, was 207; and 305 letters, reports and notices were written in connection with the business of the Department.

DETAILS OF OPERATIONS.

A brief summary of the various sanitary operations executed in the premises visited may not be unworthy of a passing notice. These prove to be quite up to the average in volume and importance, and are classified thus:—

- 56 New sanitary conveniences and water supply were fixed.
- 54 New soil pipes were put outside buildings and ventilated.
- 155 Intercepting traps with fresh air inlets and chambers were built.

- 57 New sets of house drains were laid.
- 26 Old masonry drains or traps were abolished.
- 3 Back yards were paved and drained.
- 12 New water supplies from the main were fixed.
- 88 Premises were limewashed or cleansed and disinfectants supplied.
- 12 Ashbins provided or dungpits roofed and covered.
- 41 Offensive accumulations were removed.
- 143 New gully traps to sinks were fixed.
- 24 Fumigations took place, eleven being after Phthisis.
- 6 New roofs were put on, in place of dilapidated ones.

This gives a total of 704 separate operations, as compared with 537, during the year 1904—a substantial increase under almost all the headings.

NEW BUILDINGS.

The number of new buildings erected was 15, as compared with 33 last year, and like those in that period were chiefly built in the Chelston Ward.

FACTORIES AND WORKSHOPS: BAKEHOUSES.

The bakehouses, workshops and workplaces were visited and found to be generally in an improved condition. The number is, unfortunately, diminishing slightly in the dress-making line of business.

The total is classified as follows:—

- 21 Dressmakers and milliners.
- 11 Plumbers and painters.
- 7 Coachbuilders or cycle works.
- 9 Tailors.
- 5 Laundries.
- 8 Builders and carpenters.
- 2 Printers.
- 5 Watchmakers.

Also 19 bakehouses. These latter, it must be stated, have very much improved in cleanliness and ventilation, and on the whole are in creditable condition.

The milkshops and dairies have also been inspected periodically, and the same report may be made of them; two exceptions to this rule have last year conformed to sanitary requirements and are now in line with the rest. The cowsheds outside the Borough, in Cockington Parish, were inspected each half-year with the Medical Officer, and found in good order.

As considerable alterations were being carried out at one of the principal hotels, I seized the opportunity to get the sanitary arrangements in the basement, which were of an obsolete and

offensive type (and in fact causing injury to the health of the servants occupying the rooms contiguous), entirely re-modelled on the best system; the work has been done and an excellent improvement, well appreciated, has been effected.

As usual, I have the pleasure to report that it has not been necessary for me to advise any legal notices to be issued, or compulsory steps to be taken, to enforce the execution of works found necessary to be done; thus testifying to the general desire of owners of property and others concerned to march with the times, and so maintain Torquay in her well-earned place as a premier health resort.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

CHARLES MACMAHON,

C.R. San. Inst., A.M.B. Inst. Public Health;

Chief Sanitary Inspector and Surveyor of New Buildings.



ASSISTANT SANITARY INSPECTOR'S REPORT.

TOWN HALL CHAMBERS,
TORQUAY.

February 3rd, 1906.

*To His Worship the Mayor, and to the Aldermen and
Councillors of the Borough of Torquay.*

GENTLEMEN,

I have pleasure in making this my Eighth Annual Report to the Council for the year ending December 31st, 1905, dealing with that portion of the Borough under my supervision, viz., the wards of Torwood, Strand, Upton, and Ellacombe.

One hundred and twenty-five houses and premises have been visited and inspected on receipt of complaint, or by request, and forty-five smoke and twenty-nine hydraulic tests applied to the drains in various instances.

Ninety-two notices were served to abate nuisances, and of these eighty-five were preliminary and seven legal.

Ninety visits of inspection were made to premises where work was in progress, and also one hundred and nine smoke and seventy-one hydraulic tests applied to the drains during and after alterations to same.

Upon application being made for Sanitary Certificates, twenty-four houses and premises have been examined and reported upon, and on completion of the work found necessary to comply with the requirements laid down by the Council, certificates were granted in fifteen instances.

The 10s. testing fee was paid in each case, a total of £12 received.

Certificates were also granted for four other houses, where on complaint or illness the drains were found defective and were

afterwards relaid and other work carried out to meet the requirements for a certificate.

In connection with this work sixty-five smoke and sixty-one hydraulic tests were made, and thirty visits of inspection made while work was in progress.

In connection with New Buildings in my district, one hundred and three smoke tests were applied to the drains of fifty-nine houses and premises, and fifty-five houses were examined on completion and certified as fit for habitation.

Included in this was the extensive additions and alterations to villa "Syracusa," which has now been converted into a fine "Hydropathic" establishment; a new system of drainage was laid down and the house equipped with all the latest appliances.

A large number of visits were paid, and tests applied to the drains while the work was in progress.

SUMMARY OF STRUCTURAL WORK.

- 45 New sets of house drains laid.
- 4 Old masonry drains found and abolished.
- 58 Intercepting traps, with fresh air inlets fixed.
- 68 Inspection chambers to drains built.
- 33 New sanitary conveniences with water supply fixed.
- 14 Soil pipes fixed outside houses and ventilated.
- 50 Iron and brick traps removed and earthenware gullies fixed.
- 14 Old pan closets removed.
- 4 Water supplies laid on to w.c.'s found to be without.
- 4 Taps with water supply direct from main fixed.
- 21 Choked drains cleared.
- 48 Waste pipes from baths, lavatories, and sinks trapped.
- 10 Ashbins for house refuse provided.
- 7 Offensive accumulations removed.
- 3 Nuisances from keeping fowl and animals abated.
- 20 Dirty premises limewashed and cleaned.
- 7 Nuisances from stables and manure pits abated.
- 50 Premises disinfected.
- 9 Defective yards paved.
- 15 Drains ventilated.
- 13 Old masons traps abolished.
- 1 Cellar dwelling closed.
- 1 Cesspool abolished.

Total 499

As in the previous year, a considerable amount of time has again been taken up in connection with the inspection and examination of premises under the Factory and Workshop Act,

Description of Trade.	Number.	No. of workrooms or workplaces
Laundries	27	50
Dressmaker and Milliner	21	34
Corset Maker	1	1
Tailors	14	17
Bootmaker	3	3
Saddler and Harness Maker	6	6
Sailmaker	2	2
Coachbuilder	1	3
Wheelwright	1	2
Shoeing Smith	2	2
Wood Turner	1	1
Upholsterer and Cabinet Maker	5	17
Printing Works	4	10
Plumbers	11	11
Painters and Decorators	10	10
Builders	8	22
Watchmakers and Jewellers	4	4
Dye Works	1	1
Photographers	2	4
Picture Framers	1	1
Blind Maker	1	3
Umbrella and Trunk Maker	2	2
Marble Masons	2	2
Cycle Works	3	7
Electro-plate Works	1	1
Quarries	5	5
Ironmonger and Iron Founder	2	6
Bakers and Confectioners	19	19
Total ...	160	246

In connection with this work twenty-two written or verbal notices were given to remedy the following defects —

Defects	Notices
Foul and Defective w.c.'s	4
Dirty premises	17
Overcrowding	1
Total ...	22

During the month of May, and again in October, I have made the half-yearly inspection of forty-four Dairies, Milkshops, and Cowsheds in my district; in several instances it was necessary to enforce limewashing, but in other respects the places were found in a satisfactory condition.

Also during May, and again in November—December, the Dairies and Cowsheds on thirty-eight farms outside the Borough, and situate in the following districts, have been visited and inspected with the Medical Officer in regard to the supply of milk, etc., sent into the town:—

Garabridge.	Wrangaton.	Brent.	Totnes.
Dainton.	Abbotskerswell.	Marldon.	Bovey.
Kingskerswell.	Paignton.	Churston.	

It is gratifying to note the marked improvement which has gradually taken place in the cleanliness and general condition of the Cowsheds since this work was undertaken.

In connection with Common Lodging Houses, during the year five of these premises have come under my supervision and have been periodically inspected.

Two houses changed hands and were re-registered.

One additional house has been registered during the year, the drains being previously overhauled and found to be old masonry drains; these were abolished and pipe drains laid throughout.

One case of overcrowding was detected and abated, and the keeper of the house cautioned.

One house was found being used as a Common Lodging House and was unregistered, and proved on examination to be unfit for the purpose; on notice being given the premises were vacated.

With regard to work in connection with Infectious and other diseases, thirty-eight rooms in various houses were disinfected after the following cases:—

- 1 Small Pox,
- 3 Enteric Fever,
- 13 Scarlet „
- 2 Diphtheria,
- 3 Cancer,
- 1 Chicken Pox,
- 9 Phthisis.

Also 12 rooms in a Consumptive Home were disinfected previous to the premises being closed.

The drains of the five houses in which the Enteric and Diphtheria cases occurred were examined and tested, and in each instance serious defects were found, with the result that the drains were relaid.

In reference to the above-mentioned case of Small Pox, which occurred in a Common Lodging House in my district, on the case being notified the house was at once visited, and on removal of the patient to the Isolation Hospital, all the bedding was removed and certain portions destroyed; the rest was disinfected in the new steam disinfector. The room was also thoroughly disinfected and afterwards cleansed and limewashed, with the happy result that no further cases occurred.

The disinfection of rooms after cases of Phthisis is optional with the occupiers, and though in every instance offers are made to disinfect, too often this is either refused or ignored.

The following comparative table for the last five years will shew the result of this work in my district:—

Year.	No. of cases.	No. of disinfections.	Refusals.
1900	... 42	20	22
1901	... 45	14	31
1902	... 25	9	16
1903	... 12	0	12
1904	... 20	8	12
1905	... 17	9	8
Total ...	161	60	101

A house-to-house inspection was made of a block of 14 tenement houses containing two, three, and four families, and as a result it was found necessary to serve notices to abate nuisances found from

One cellar dwelling occupied by two persons,
Choked drains,
Filthy and defective w.c.'s,
Dirty premises,
Defective floors.

Office work, as usual, has demanded a certain amount of time in regard to the keeping of the necessary books and records of work, and in correspondence.

I am, Mr. Mayor and Gentlemen,
Yours obediently,

WILLIAM B. WATSON,

*Cert. R. San. Inst., Sanitary Inspector, and
Inspector of New Buildings, Workshops, and Dairies, etc.*

ASSISTANT SANITARY INSPECTOR'S REPORT.

*To His Worship the Mayor, Aldermen, and Councillors of the
Borough of Torquay.*

GENTLEMEN,

The following account of work done in the St. Mary-
Church District during the year ending 31st December, 1905,
constitutes my Fifth Annual Report.

HOUSES VISITED ON COMPLAINT.

Sixty-seven different premises were visited on receipt of
verbal or written complaints. The following table shows the
nature of those complaints:—

Defective drains	16
Choked drains	7
Defective flush cisterns	4
Keeping of animals	13
Manure and offensive deposits	11
Damp or dirty premises	6
Trade nuisances	7
Overcrowding	1
Fouled well	1

The following is a list of improvements effected, to abate
the nuisances found on investigating the above complaints:—

Drains relaid or repaired	17
Choked drains cleared	7
Flush cisterns provided or repaired	10
Animal nuisances abated	13
Offensive deposits removed	11
Premises cleaned or repaired	6
Trade nuisances abated	7
Overcrowding abated	1
Sample of well water analysed and found safe	1

A total of one hundred and fifty-eight visits to premises
and twenty-one smoke tests were made in the execution of this
work.

According to our usual custom, prior to the Easter Holidays, the Race Course was visited for the purpose of inspecting the sanitary conveniences provided for the annual Race Meeting. It was then found that the number and suitability of these had been increased, thus obviating any complaints from the public.

PREMISES VISITED BY REQUEST.

Thirty-two premises were visited at the request of owners or occupiers, and in some instances builders wished me to test work executed by them, thus bringing under my supervision work which would not otherwise have been tested.

Defects were found in twenty-seven of these houses. Eighteen drains were relaid throughout, and nine were thoroughly repaired. Thirteen sanitary certificates were issued. The sum of seven pounds ten shillings was received in drain-testing fees, being an increase of two pounds compared with last year.

In carrying out this work, one hundred and forty-six visits, one hundred and ten smoke tests, and seventeen water tests were made.

NOTIFIABLE AND OTHER DISEASES.

Ten houses were visited in consequence of there having been infectious disease therein. Five were cases of scarlet fever, two erysipelas, one of each of diphtheria, typhoid fever, and chicken pox. Eight rooms were fumigated. Two defective drains were relaid entirely, and disinfectants were supplied in seven cases.

Six deaths from phthisis were reported. Four of these premises were disinfected with formalin, and the other two disinfected by the occupiers of the premises concerned.

Two other rooms were disinfected, one in which death from cancer had occurred, and the other from which a consumptive patient had removed.

Last year, 1904, seven deaths from phthisis were reported, and eight rooms were disinfected.

NEW BUILDINGS.

Thirty-one new buildings and houses to which additions or alterations were made were visited during the year. In all cases

the drains were tested in sections with smoke or water. Inspection chambers are now constructed on the line of drainage in all new buildings, to facilitate cleansing and clearing the drain should occasion arise. Seventeen drainage and twenty-two habitation certificates were issued in 1905. This shows an increase on last year, 1904, when twenty buildings were visited, and thirteen drainage and thirteen habitation certificates were granted.

During the year 1905, a total of more than one thousand feet of new sewers was laid to develop building estates in this district. On one of these estates it is proposed to erect forty houses, of which five have been built up to the present time.

These sewers were tested in lengths of about fifty to eighty feet. Last year, 1904, only three hundred and fifty feet of new sewers were laid.

A total of one hundred and eighteen visits, one hundred and two smoke tests, and four water tests were made in connection with new buildings and new sewers.

HOUSE TO HOUSE INSPECTION.

Under this head thirty-two houses were visited. Eighteen defective drains were relaid and one repaired. Six water closets, which were without a means of flushing, were provided with water-waste preventers. Fourteen defective yards were repaved or repaired. One hundred and forty-eight visits, thirty-seven smoke, and two water tests were made during this systematic inspection.

DAIRIES, COWSHEDS, AND MILKSHOPS.

These were inspected twice during the year at the usual times, namely, before the cows were turned out and before they lay in again, and were found in a satisfactory condition. The paving, lighting, and drainage of most of the cowsheds will compare very favourably with those of any district. I regret to find, however, that several occupiers require to be visited oftener than twice annually, or I fear the limewashing would not be carried out as required by our bye-laws.

Two new cowsheds were built in the year, plans having been submitted to the Council. I visited both on many occasions during their erection, to test the drains and to see that the requirements as to paving, lighting, and water supply were

fulfilled. One other cowshed, which is only used for milking purposes during the summer months, has been paved and supplied with water.

A total of ninety-four inspections were made relating to Dairies and Cowsheds in this district.

After the half-yearly inspection of the Dairies and Cowsheds within the district, I accompanied the Medical Officer of Health and inspected twenty-five dairy farms outside the Borough. From these a considerable part of our milk supply is obtained. In all cases we were courteously received, and the farmers shewed great willingness to carry out our suggestions. The farms were on the whole found in a satisfactory state.

SLAUGHTER HOUSES.

There are now seven slaughter-houses in St. Mary-Church and Babbacombe, a new one having been built at Barton according to plans sanctioned by the Borough Council. During the year copies of our new bye-laws affecting slaughter-houses were sent to all occupiers. A circular which related to Anthrax was received from the Board of Agriculture, and posted to occupiers or owners of slaughter-houses.

Periodical visits were made to slaughter-houses, and similar visits were paid to a tripe-boiling establishment, this being an "offensive trade" under Section 112 of Public Health Act, 1875.

BAKEHOUSES.

One new bakehouse having been opened and one discontinued during the past year, the number still stands at seventeen. These were visited in due season by the Medical Officer and myself, and in all cases were found to comply with statutory requirements. The drain of one bakehouse was found on examination to be defective, and to need alteration and amendment. The owner of these premises had the drain repaired, and manhole, interceptor, and flushing apparatus provided.

FACTORY ACT.

Fifteen laundries and twenty-seven workshops were visited. There were found to be many alterations, some having been discontinued, whilst others were carried on at a different house, and again, new ones had sprung up where previously none

existed. This entailed measuring and recording the cubic capacity of several rooms. There were found to be very few "outworkers."

A curious incident occurred at a workroom in this district. A very bad smell being noticed in a cupboard of a ground-floor workroom, the matter was accordingly reported to this department. I visited the house, and expressed the opinion that the smell was not that of a drain but of coal gas. The meter and gas fittings were tested by the Gas Department, and were pronounced to be satisfactory. A few days after this an explosion occurred in this workroom early in the morning, after the doors had been closed overnight. Attention was then directed to the gas main in the road, with the result that about thirty yards away a considerable escape was found, which travelled under the ground and entered the workroom with such serious result.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

H. RUSSELL SMITH,

*Cert. Royal San. Inst., San. Inspector,
and Inspector of New Buildings. Workshops, &c.*



BOROUGH OF TORQUAY.



Meteorological Report

FOR THE YEAR, 1905.

FREDK. MARCH, F.R. Met. Soc., M.P.S.,

Borough Meteorologist.

The Borough Observatory,

February 1st, 1906.

METEOROLOGICAL REPORT.

*To the Worshipful the Mayor, Aldermen and Councillors
of the Borough of Torquay.*

GENTLEMEN,

It is with pleasure I report that in the department under my control a step has been taken during the past year which is, in my judgment, of far reaching benefit to the Borough. I refer to the daily despatch since June of a weather telegram to the Meteorological Office. Until this was sanctioned, I was constantly being asked why no report of our weather appeared in this, that, or the other journal. These complaints are now much rarer, because the information that is wired to the Meteorological Office is made use of by Press agencies and circulated in all corners of the kingdom.

Beyond this, the regular services of daily, weekly, and monthly reports have been maintained, the charts of the morning readings have been duly posted in the town and in the windows of the weather office. The evening observations have been forwarded direct to the following papers:—"Liverpool Post," "Manchester Guardian," "Newcastle Chronicle," "Bristol Mercury," "Sheffield Independent," "Leeds Mercury," "Birmingham Post," "Western Morning News," "Western Daily Mercury," London "Leader," "Bradford and Yorkshire Observer," and through agencies to the London "Standard," "Daily Chronicle," "Daily News," and "Sheffield Telegraph."

Copies of the same observations have been sent by post each night to twenty-four stations and receiving offices on the Great Western Railway, and exhibited the following morning, through the continued courtesy of the company.

The Daily Weather Report of the Meteorological Observatory has been exhibited outside 34 Fleet Street, and has been valued by many visitors.

Weekly Reports have been sent for publication to the "Torquay Directory" and to the Exeter "Express." A weekly report of bright sunshine has been forwarded to the Meteorological Office.

The Monthly Report, as presented to the Council, has been published in the "Torquay Directory" and in the "Western Morning News" and "Western Daily Mercury," and has been posted in the town.

Reports have also been made monthly to the Royal Meteorological Society and to the British Rainfall Organization.

Many interesting enquiries concerning the climate of Torquay have been made verbally and by post. Full replies have always been furnished, and this has led in some cases to the free advertising of Torquay in journals of wide and influential circulation.

I am, gentlemen,

Your obedient servant,

FREDERICK MARCH.

OBSERVATORY AND INSTRUMENTS.

The Observatory is organised and maintained by the Town Council, and is under the supervision of the Royal Meteorological Society and of the Meteorological Office.

The several Barometers, Thermometers, and Rain Gauges have been verified at Kew Observatory, and regularly examined by a representative from the Royal Meteorological Society. Readings are all corrected for instrumental errors.

The Hygrometrical Results are deduced from the daily morning readings of the Dry and Wet Bulb Thermometers by means of Glaisher's Tables.

The averages for Sunshine are the result of 17 years', for Temperature and Rainfall of 28 years', and for Pressure of 21 years' observations.

The following are the instruments and appliances in regular use, those marked with an asterisk being the property of the Torquay Natural History Society, and lent by them to the town:—

* The **Barometer** is a Fortin Standard, and is read twice daily, at 9 a.m. (local time) and at about 5 p.m. All readings are reduced to 32° F. and mean sea level, and are thus comparable with all readings similarly reduced.

* An **Aneroidograph**, by Richard Freres, gives in graphic manner the alternations of pressure.

There are two double louvred **Stevenson's Screens**, each containing **Dry** and **Wet Bulb**, and **Maximum** and **Minimum Thermometers**. The instruments are of Casella's make, and are so placed that the bulbs of the hygrometer are four feet above the level of the grass. One of these sets has been working throughout the year at Cary Green, where the published temperatures have been taken; the other in the Princess Gardens.

A third ***Stevenson's Screen**, also double louvred, has been in position in the Princess Gardens, and has held a ***Thermograph**, or Self-recording Thermometer, and an **Ozonometer**.

***Solar Radiation Thermometers**, black bulb in vacuo and bright bulb in vacuo, are contained in a stand of their own, placed in the Princess Gardens.

The **Grass Minimum** is by Hicks, and is placed on grass in the Princess Gardens about an inch above the ground.

The **Rain Gauges** are of copper, by Casella, and of Snowdon pattern. They are placed, one on Cary Green, one in the Princess Gardens, with the upper edge 12 inches above the level of the ground.

The **Sunshine Recorders** are placed upon the covered shelter at the southern end of the Pier deck.

They are—

(1). A Curtis' Improved Campbell-Stokes instrument, fitted with a $3\frac{1}{2}$ -inch spherical lens of crown glass, and working on the principle of the burning-glass.

(2). A Twin Jordan Photographic Recorder, which works by the differentiation in colour effected by bright sunlight on specially prepared chemical paper.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Campbell-Stokes' Standard Instrument.

1905.	Total Bright Sunshine.	Percentage Actual of Possible.	Difference from Average.	Greatest Amount in one day.	Date.	Percentage Actual of Possible.	Sunless Days.
	Hours.	%	Hours.	Hours.		%	
January ...	87·3	34	+ 25·9	7·5	29th	84	9
February ...	98·3	36	+ 17·9	9·0	14, 21, & 22	91	3
March	153·9	42	+ 15·6	10·5	19th	87	0
April	107·8	26	- 72·4	11·2	24th	79	5
May.....	288·3	61	+ 61·1	14·3	20th	91	1
June.....	167·2	34	- 64·0	14·8	24th	91	5
July	238·9	49	+ 3·0	14·8	7th	92	0
August.....	193·7	44	- 13·6	12·8	14th	89	2
September..	153·2	41	- 11·3	10·3	21st	85	2
October ...	133·0	41	+ 20·4	9·1	22nd	89	3
November..	103·3	39	+ 36·0	8·2	2nd	86	4
December ..	49·9	21	- 3·4	7·3	11th	94	16
Year...	1774·8	40	+ 15·2	14·8	June 24th July 7th	91 92	50

REMARKS.

The total sunshine for the year amounted to 1,775 hours, being 15 hours above the average of 17 years, and 39 hours above the total of 1904. We were particularly fortunate in the distribution of the sunshine. The winter total was 626 hours—December alone shewing a deficit, and that a small one—giving an average of $3\frac{1}{2}$ hours per day. In an article in the "Lancet" of February 11th, 1905, entitled "January at Home and Abroad," Torquay and Jersey were expressly mentioned as being "particularly bright." Our advantage in the matter of winter sunshine is brought out in the following table, compiled from the official records of the Meteorological Office, and giving the totals of the first three months of 1905. The towns selected are the best known in their various districts:—

	January.	February.	March.	Total.
TORQUAY	87·5	98·3	154·0	339·8
St. Leonard's (S.)	93·6	89·3	139·0	321·9
Cambridge (E.)	83·4	87·1	138·2	308·7
Brighton (S.)	72·7	85·4	150·5	308·6
Margate (S.)	71·3	85·6	142·2	299·1
Bath (S.W.)	68·4	75·0	125·9	269·3
Nottingham (Mid.)	54·7	59·9	128·2	242·8
Sheffield (Mid.)	54·7	57·7	123·6	236·0
Birmingham (Mid.)	57·6	43·4	106·2	207·2
London (Brixton) (S.) ..	42·8	62·5	96·5	201·8
York (N.E.)	38·4	56·5	103·9	198·8
Manchester (N.W.)	9·5	30·2	76·1	115·8

The summer sunshine amounted to 1,149 hours, an average of 6·3 hours per day. The April and June totals were much below the average, but May, with 288 hours, was the sunniest month of the year.

The following table gives the comparative sunshine returns for the year 1904, the last figures available:—

BRIGHT SUNSHINE, 1904.

COMPARISON WITH OTHER TOWNS AND HEALTH RESORTS.

From the Yearly report of J. BAXENDELL, Esq., F.R. Met. Soc., the Fernley Observatory, Southport.

HEALTH RESORTS.	Hours.		Hours.
TORQUAY	1735·7	Bath	1427·7
Southport	1473·5	Folkestone	1800·4
Scarborough	1416·1	Brighton	1713·2
Harrogate	1371·4	Eastbourne	1761·6
Blackpool	1539·1	Bournemouth	not given
Buxton	1323·8	Newquay	1574·3
Margate	1633·1	Jersey	1867·7
St. Leonard's	1796·3		
CITIES.			
LONDON	1327·6	Nottingham	1386·6
Manchester	1014·1	Newcastle	1098·1
Sheffield	1324·7	Hull	875·1
Birmingham	1231·0	Bolton	951·3

SHADE TEMPERATURES.

Taken at 9 a.m. (Local Time).

1905.	Maximum <i>mean.</i>	Minimum <i>mean.</i>	Max. & Min. <i>mean.</i>	Difference from Average.	Range <i>mean.</i>	Highest.	Date.	Lowest.	Date.
	°	°	°	°	°	°		°	
Jan. ...	48·0	37·6	42·8	+0·5	10·4	54·8	7th	29·4	27th
Feb. ...	49·7	40·2	45·0	+1·9	9·5	56·8	14th	32·0	25th
March.	52·3	40·4	46·4	+2·3	11·9	58·5	18th	31·5	15th
April ..	53·6	43·8	48·7	+0·5	9·8	59·3	11th	36·9	23rd
May ...	60·2	45·8	53·0	-0·1	14·4	68·8	17th	37·9	4th
June.	63·3	53·5	58·4	-0·3	9·8	75·9	25th	46·9	9th
July ...	70·9	57·2	64·1	+2·4	13·7	78·7	26th	50·7	7th
Aug....	65·7	54·8	60·3	-1·3	10·9	69·8	14th	50·2	14th
Sept. ...	62·9	51·3	57·1	-1·2	11·6	72·4	3rd	43·1	22nd
Oct. ...	55·4	43·1	49·3	-2·7	12·3	63·1	10th	31·9	17th
Nov....	50·4	38·8	44·6	-2·8	11·6	55·7	4th	25·8	21st
Dec. ...	48·9	41·2	45·1	+1·5	7·6	54·5	1st	33·8	12th
Year	56·8	45·6	51·2	—	11·1	78·7	July 26th	25·8	Nov. 21st

REMARKS.

With a rainfall in January and February 4 inches below the average, no snow being gauged at all ; with a total of bright sunshine 44 hours above the average, and a mean temperature in January of 43° (mean maximum 48° , mean daily range 10°), in February of 45° (mean maximum 50° , mean daily range 9.5°), and in March of 46° (mean maximum 52° , mean daily range 12°), Torquay was, perhaps, during these spring months, from a climatic point of view, the most desirable spot in Europe. That this may not be thought the indiscriminating praise of an enthusiast, there are appended portions of an article from the "Lancet" of February 11th, 1905. The figures relating to Torquay were supplied by the present writer, and the interpolated notes in brackets are his, but the comparisons are those of an impartial critic.

JANUARY AT HOME AND ABROAD.

The month of January must have been a great disappointment and a source of great discomfort to all except the most robust, who travelled south to escape the rigours of the coldest period of the year. Without going so far as to say that the cold and rough weather of January was unprecedented in the south of Europe, it can safely be affirmed that it was the most severe during the present generation. Nor was the cold confined to any particular locality, but while all the more sheltered spots naturally suffered the least none of the winter resorts escaped a temperature far below the normal, besides experiencing unpleasant falls of cold rain, sleet, and snow, and a sky usually very cloudy or quite overcast. In studying the appended table it is seen that Nice and Biarritz each had a lower minimum temperature, recorded by the screened thermometer early in the month, than our own inland places of Bath, Nottingham, and London [Bath 19° , Nottingham 19° , London 23° , TORQUAY 29°], while that at Florence was only one degree higher than at Bath and Nottingham, and that at Rome just equal to London, St. James's Park. Even at Naples and Palermo there were several degrees of frost [Naples 26° , Palermo 28° , TORQUAY 29°], while at Algiers and Lisbon the thermometer descended to within two degrees of the freezing point. At Naples frost was registered on seven nights, at Nice on ten, at Rome on twelve, and at Florence on as many as nineteen. In London there were only sixteen frosts, at Torquay two or three [two only— 31.1° on the 19th, and 29.4° on the 27th], and at Scilly none. The mean temperature for the month was highest at Algiers, Palermo, and Lisbon, but at all the other foreign resorts it was lower than at the Scilly Isles, Torquay, and Jersey ; at Florence it was three degrees lower than in London and two

degrees lower than at Nottingham, one of the coldest parts of England [and 7.5° lower than TORQUAY]. At almost all the foreign stations the means of the minima were inferior to those on our own south-west coasts [*e.g.*, TORQUAY 38° , Nice 34° , Biarritz 36° , Rome 34° , Naples 36° , Paris 27°]; at Florence the mean minimum was ten degrees lower than at Torquay and Jersey and 14 lower than at the Scilly Isles. The highest temperature of the month was recorded at Nice, and occurred immediately after the severe cold at the beginning of the year. The average day at Rome and Biarritz had the same degree of warmth (49° degrees) as the Scilly Isles, while that at Naples just equalled Torquay. With regard to equability [a very important consideration for invalids; mean daily range was at TORQUAY 10° , Nice 16° , Biarritz 13° , Florence 14° , Rome 13° , Naples 12° , Palermo 16°], none of the continental resorts can compare with Scilly, Jersey, and Torquay, and few of them were as equable as Nottingham. The precipitation from the clouds, composed largely of sleet or snow, was only excessive at Algiers; in this country it was, except at Jersey, much less than during an ordinary January. At all the British stations the number of hours of sunshine was far above the average, Torquay and Jersey being particularly bright.

Temperature and Rainfall.

Stations.	Highest temperature.	Lowest temperature.	Mean maximum.	Mean minimum.	Mean temperature.	Total rainfall in inches.	Number of hours sunshine.
	Degs.	Degs.	Degs.	Degs.	Degs.		
Nice	70	18	50	34	42.0	0.43	—
Biarritz	63	18	49	36	42.5	2.05	—
Florence	57	20	44	28	35.5	0.56	—
Rome	59	23	49	34	41.5	0.70	—
Naples	58	26	48	36	42.0	1.92	—
Palermo	60	28	55	39	47.0	2.18	—
Algiers	66	34	59	47	53.0	4.40	—
Lisbon	64	34	54	43	48.5	1.97	—
Paris	50	12	41	27	34.0	0.64	—
London	55	23	45	32	38.5	1.15	31.2
Scilly Isles	54	38	49	42	45.5	1.02	61.7
Jersey	54	25	47	38	42.5	2.04	95.3
Torquay	55	29	48	38	43.0	1.42	87.3
Bath	54	19	44	32	38.0	0.59	68.0
Nottingham	53	19	43	32	37.5	0.69	54.7

The summer months (June to September) were again relatively cool, with a mean maximum of 65.7 , and a mean temperature of 60° . The hottest day was July 26th, 78.7° .

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Jordan Photographic Twin Instrument.

1905.	Total Bright Sunshine.	Difference from Camp- bell-Stokes' Record.	Greatest Amount in one day.	Date.	Sunless Days.
January	82.0	- 5.3	7.2	29th	8
February	96.2	- 2.1	8.8	14th & 21st	3
March	160.5	+ 6.6	10.5	19th	0
April	103.4	- 4.4	10.5	8th	4
May	277.3	- 11.0	13.8	20th	1
June.....	167.3	+ 0.1	14.4	24th	3
July	237.1	- 1.8	14.5	7th	0
August.....	200.6	+ 6.9	13.1	14th	2
September.....	159.2	+ 6.0	10.3	21st	1
October	133.2	+ 0.2	9.0	22nd	3
November	98.5	- 4.8	8.2	2nd	3
December	51.1	+ 1.2	7.1	11th	14
Year.....	1766.4	- 8.4	14.5	July 7th	42

RAINFALL

In inches and hundredths.

1905.		Total Amount.	Difference from Average.	Wet Days.	Mean Wet Day Rainfall.	Greatest fall in 24 hours.	Date
January ...	*C. G.	1.42	- 1.91	10	0.14	0.82	16th
"	†P. P.	1.44					
February ...	C. G.	0.84	- 1.96	10	0.08	0.46	25th
"	P. P.	0.87					
March	C. G.	5.33	+ 2.76	19	0.28	1.42	10th
"	P. P.	5.27					
April	C. G.	2.65	+ 0.32	15	0.18	0.67	10th
"	P. P.	2.65					
May	C. G.	0.56	- 1.46	5	0.11	0.43	1st
"	P. P.	0.59					
June	C. G.	2.77	+ 0.60	17	0.16	0.61	16th
"	P. P.	2.82					
July	C. G.	0.59	- 1.89	5	0.12	0.20	27th
"	P. P.	0.64					
August	C. G.	3.16	+ 0.48	20	0.16	0.77	15th
"	P. P.	3.15					
September	C. G.	1.86	- 0.54	11	0.17	0.82	5th
"	P. P.	1.87					
October ...	C. G.	2.30	- 1.67	11	0.21	1.09	31st
"	P. P.	2.38					
November	C. G.	5.39	+ 1.74	16	0.34	0.88	12th
"	P. P.	5.23					
December	C. G.	1.01	- 2.85	9	0.11	0.24	27th
"	P. P.	1.04					
Year	C. G.	27.88	- 6.38	148	0.19	1.42	Mar. 10th
"	P. P.	27.95					

* Cary Green.

† Princess Pier.

REMARKS.

An excellent illustration of the uncertainty of the British climate, particularly in regard to downfall, is furnished by a comparison of the figures in this table with those of last year's Report. In January and February, 1904, about $11\frac{1}{2}$ inches of rain fell, this being about twice the ordinary amount, and there were 43 rain days; in January and February, 1905, the total was $2\frac{1}{4}$ inches only, or about 4 inches below the average with 20 rain days. In July, 1904, residents and tourists were treated to the liberal allowance of 4.62 inches, and rain fell every other day; in July, 1905, the total rain gauged $\frac{1}{2}$ inch, and fell on five days only. On the other hand, March and November, 1905, gave a total of nearly 12 inches, as against $4\frac{1}{2}$ inches in 1904, and 35 wet days as against 25.

In addition to the dry months specified above, there was a shortage of rain also in May, September, October, and December, so that the year closed with a deficit of 6.38 inches upon a total of 27.88 inches. Of the 29 years' rain records that we have upon our books, only six shew a lower total, the annual amounts varying from 24.13 inches in 1892, to 46.88 inches in 1891.

Technically there were 148 wet days in 1905, but, as a matter of fact, on no fewer than 57 of these the rainfall was trifling in amount, frequently the result of one morning shower at the beginning of a beautiful day.

The present writer feels each year more strongly the necessity for the revision of Meteorological language, so that a day upon which the rainfall is only the trifling amount of $\frac{1}{100}$ th of an inch, shall not be described to the public as a "wet" day, the term being altogether misleading. For rainfall purposes days should be classified under some such terms as "rain days," "wet days," and "very wet days."

BAROMETRIC PRESSURE

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1905.	<i>Mean</i> of Month.	Difference from <i>Mean</i> of Month.	Highest Reading.	Lowest Reading.	Extreme Range of Pressure.
January	30·311	+0·268	31·035	29·311	1·724
February	30·248	+0·261	30·615	29·277	1·338
March	29·783	-0·172	30·319	29·052	1·267
April	29·860	-0·025	30·326	29·258	1·068
May	30·132	+0·161	30·451	29·438	1·013
June.....	29·956	-0·057	30·386	29·625	0·761
July	30·096	+0·143	30·273	29·850	0·423
August.....	29·914	-0·056	30·298	29·361	0·937
September	30·000	-0·019	30·349	29·581	0·768
October	30·090	+0·133	30·477	29·262	1·215
November	29·683	-0·288	30·185	28·940	1·245
December	30·235	+0·264	30·864	29·354	1·510
Year	30·026	+0·048	31·035	28·940	2·095

REMARKS.

The mean reading of the barometer for the year, as taken at 9 a.m., was 30.026 inches, being 0".036 above the mean of 1904, and 0".048 above the average of 21 years.

In every month except September high readings went with low rain totals, and low readings with high rain totals. In September the barometer was slightly below the average (0".019 inches), and the rainfall also below (0".54).

The highest official reading (31".035) was taken at 9 a.m. on the 28th January. This was abnormally high, the previous highest reading being 30".919 in 1902. The mercury rose still more during the day, attaining its highest level soon after midnight. By the aid of the barograph, an approximate reading was obtained of 31".075 (Sunday, January 29th, 12.15 a.m.)

The lowest reading was 29".354 on December 29th, giving an extreme range for the year of 2".095.

HUMIDITY, CLOUD, OZONE, AND WIND.

1905.	HUMIDITY.			CLOUD <i>mean</i> 1 to 10.	OZONE. Per centage of possible.			WIND. Prevailing Quarters.
	Dry Bulb <i>mean.</i>	Wet Bulb <i>mean.</i>	Relative Humidity.		<i>Mean</i> Daily Amount.	Greatest Daily Amount	Least Daily Amount.	
	°	°	%		%	%	%	
January	41.7	39.6	83	6.0	46	90	20	N., N.W., & W.
February	44.4	41.8	82	5.0	52	90	10	W. & N.W.
March ...	47.5	44.9	81	6.0	58	75	30	W. & S.W.
April ...	49.5	46.3	78	8.0	60	90	35	S.W. & W.
May	54.4	49.1	68	3.5	56	90	40	E., N.E., & W.
June.....	59.0	55.1	76	7.5	52	80	20	E. & W.
July	65.7	60.2	70	6.5	34	60	10	E., S.E., & S.W.
August...	61.5	55.9	69	6.0	47	70	20	W. & S.
Sept. ...	57.9	54.1	77	6.0	44	70	20	N.W. & N.E.
October	48.8	45.7	78	5.0	40	70	10	N.W.
Nov.....	42.9	41.2	86	6.0	42	80	10	N.W.
Dec.	44.8	43.1	88	8.0	38	65	10	S.E. & SW.
Year...	51.5	48.1	78	6.0	47	70	10	W. & N.W.

REMARKS.

Cloud is estimated according to a scale 0—10, 0 being clear blue sky and 10 a sky entirely overcast. The mean amount at the time of taking the daily observation, 9 a.m., was 6, varying from an average of 3·5 in May, to an average of 8 in April and December.

The mode of observing ozone is "to expose slips of white absorbent paper, soaked in a solution of iodide of potassium and starch for a definite period, in a cage allowing free access of air, while excluding direct sunlight and rain, and to note according to a definite scale the degree of discolouration the paper exhibits."

The prevailing winds for the year were W. & N.W. In the winter months, particularly, westerly winds predominated, and not until May was there any large proportion of easterly breezes.

The mean humidity for the year was again 78, varying from 69 in August, to 88 in December. This figure denotes the percentage of possible moisture in the air (100 = complete saturation), and it should be noted that the air of Torquay is relatively dry and not humid. This is shewn by the following schedule :—

MEAN HUMIDITY TABLE.

(From Mr. Baxendell's Report, 1903, to the Southport Corporation).

			%				%
TORQUAY	..	..	78	Bath	..	..	78
Southport	..	..	82	Ilfracombe..	..	..	80
Douglas	..	..	89	Tunbridge Wells..	..	..	81
Llandudno	..	..	78	Bude..	..	..	85
Buxton	..	..	82	St. Leonard's	..	..	82
Cheltenham	..	..	82	Brighton	..	..	83
Margate	..	..	82	Eastbourne	..	..	82
Scilly ..	..	..	83	Bournemouth	..	..	79
Guernsey	..	..	85	Newquay	..	..	86
Falmouth	..	..	84	LONDON (Greenwich)			80

SOLAR AND TERRESTRIAL RADIATION.

SOLAR.

ON GRASS.

1905.	Max. Mean	Highest.	Date.	Max. Solar Radiation.	Minimum mean.	Lowest.	Date.	Number of Days at 32° and below.
Jan.	70.4	90.8	28th	22.4	32.4	22.7	19th	15
Feb.	82.0	98.7	16th	32.3	35.7	25.8	12th	9
March....	95.1	111.5	29th	42.8	37.1	26.2	4th	5
April	92.2	108.3	1st	42.7	41.1	30.8	6th	1
May	96.9	107.2	29th	42.5	41.5	32.1	4th	0
June.....	96.7	113.5	26th	33.4	51.3	43.5	9th	0
July	105.3	113.8	13th	34.4	55.1	46.8	7th	0
Aug.	104.1	117.6	7th	38.4	52.4	46.3	2nd	0
Sept	104.0	116.4	12th	41.1	47.9	39.5	26th	0
Oct.	90.3	109.1	4th	34.9	37.6	24.7	25th	8
Nov.....	78.2	97.4	5th	27.8	30.0	19.9	20th	19
Dec.	64.4	86.3	1st	15.5	33.8	23.7	10th	12
Year	90.0	117.6	Aug. 7th	33.2	41.3	19.9	Nov. 20th	69

METEOROLOGICAL ABSTRACT,

1905.

Highest Shade Temperature	-	-	78°·7
Lowest Shade Temperature	-	-	25°·8
Mean Maximum Temperature	-	-	56°·8
Mean Minimum Temperature	-	-	45°·6
Mean Temperature	-	-	51°·2
Mean Range of Temperature	-	-	11°·1
Total Rainfall	-	-	27"·88
Hours of Bright Sunshine	-	-	1774·8
Sunny Days	-	-	315
Mean Humidity	-	-	78
Mean Ozone	-	-	47

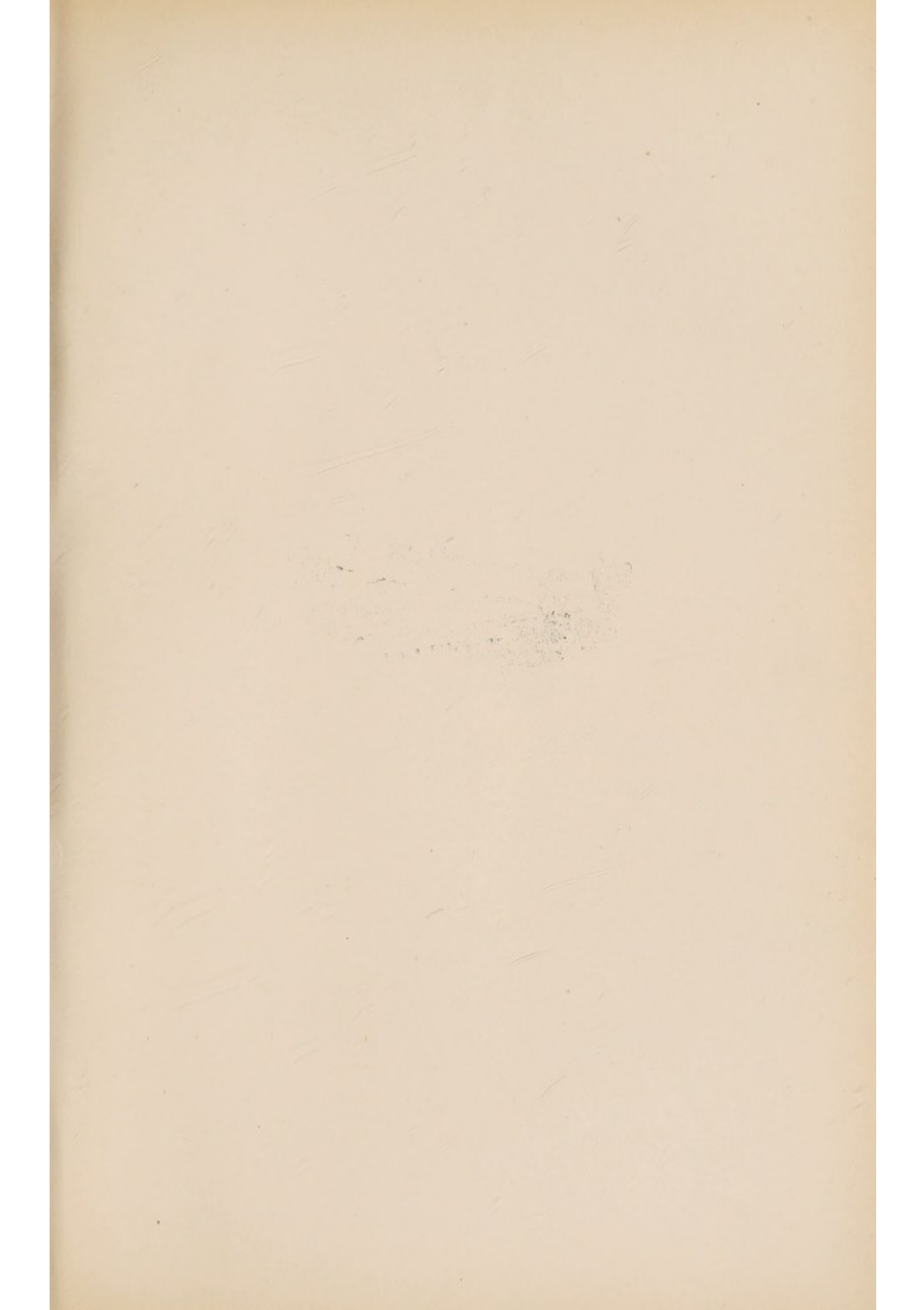
THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY
RESEARCH REPORT NO. 100

1. The purpose of this study was to determine the effect of temperature on the rate of reaction between hydrogen peroxide and potassium iodide in the presence of a catalyst. The reaction was carried out at various temperatures ranging from 10°C to 40°C. The rate of reaction was measured by the volume of oxygen gas evolved over a fixed period of time. The results showed that the rate of reaction increased with increasing temperature, and the activation energy of the reaction was calculated to be 50 kJ/mol.

2. The effect of the concentration of the reactants on the rate of reaction was also studied. The reaction was carried out at a constant temperature of 25°C, and the concentration of hydrogen peroxide was varied while the concentration of potassium iodide was kept constant. The results showed that the rate of reaction increased with increasing concentration of hydrogen peroxide, and the order of reaction with respect to hydrogen peroxide was determined to be 1.5.

3. The effect of the concentration of the catalyst on the rate of reaction was also studied. The reaction was carried out at a constant temperature of 25°C, and the concentration of the catalyst was varied while the concentrations of the reactants were kept constant. The results showed that the rate of reaction increased with increasing concentration of the catalyst, and the order of reaction with respect to the catalyst was determined to be 1.





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