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BOROUGH OF TORQUAY.



Annual Report

OF THE

MEDICAL OFFICER OF HEALTH

For the Year 1904,

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, 1904.

Area of the Borough, 3,858 acres.

Rateable value, £187,000.

Population—Census (1901), 33,625 ; estimated at the middle of 1904, 33,850.

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, 1904, 13·9 per 1000. Average for previous 9 years, 15·6 per 1000.

Corrected death rate, 1904, 14·2 per 1000. Average for previous 9 years, 14·2 per 1000.

Death rate if all visitors excluded, 12·4 per 1000.

Birth rate, 15·7 per 1000. Average for previous 9 years, 17·6 per 1000.

Infantile mortality, 1904, 120. Average for previous 9 years, 135.

Death rate from zymotic diseases, ·38 per 1000.

Mean annual Temperature, 51·4.

Hours of Bright Sunshine Recorded, 1735·7.

Total Rainfall, 33·73 inches.



BOROUGH OF TORQUAY.

ANNUAL REPORT

OF THE

Medical Officer of Health

For 1904.

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

GENTLEMEN,

In accordance with my statutory duty, I beg to present my Annual Report on the health of the inhabitants, and the sanitary circumstances of the Borough of Torquay. Certain portions of the report may appear too full of local details, but it must be remembered that the reports are prepared for the information of the Local Government Board and the County Council, as well as for the Town Council. The Medical Officer of Health is also required to report, for the information of the Secretary of State, on the administration of the Factory and Workshops Act in his district, and in this report are included details of the work done under this Act.

The birth-rate of 15·7 per 1000 is ·1 per 1000 less than in 1903. The gross death-rate—13·9—is satisfactory, and is 2·3 per 1000 less than that for England and Wales. The zymotic death-rate is extremely low, being only ·38 per 1000, that for England and Wales being 1·94. The infantile mortality of 120 per 1000 births, although not as low as in 1903, is considerably lower than the average, which is 135 per 1000 births.

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 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:—

Highest Maximum Temperature	78°·0
Lowest Minimum	28°·0
Mean Maximum	56°·5
Mean Minimum	46°·3
Mean of Maximum and Minimum	51°·4
Difference from average	+ 0°·3
No. of days on which rain fell	171
Total fall in inches	33·73
No. of hours of bright sunshine	1735·7

THE WINTER CLIMATE.

In an annotation in "The Lancet" for the week ending Saturday April 16th, 1903, the following table is given, showing the character of the winter weather at some English Health Resorts.

Stations.	Temperature.						Rainfall.		Sun-shine.
	Highest maximum.	Lowest minimum.	Mean maximum.	Mean minimum.	Mean of maximum and minimum.	Difference from average.	No. of days with rain.	Total fall.	Total number of hours.
	Deg. F.	Deg. F.	Deg. F.	Deg. F.	Deg. F.	Deg. F.		Ins.	
Harrogate	56	20	41	34	37.5	-0.7	79	11.3	193
Bath	59	21	46	35	40.5	-1.0	72	10.8	198
Tunbridge Wells*	57	23	43	33	38.0	-1.5	57	10.8	188
Hastings	55	23	43	33	38.0	-2.4	80	11.0	222
TORQUAY	59	30	47	39	43.0	-0.2	78	18.7	285
Falmouth	55	30	47	40	43.5	-0.6	83	24.0	254
Scilly Isles	55	33	49	42	45.5	-0.6	88	18.7	260
Jersey	56	28	47	39	43.0	-0.6	85	14.9	285

* The observations for Tunbridge Wells are for January to March only.

These figures are compared with those in Foreign Health Resorts such as Nice, Florence, &c. It is shown that, although it was slightly warmer at most of the Foreign Resorts, yet the nights at Torquay were just as warm as those of Nice. Again, the difference between the day and night temperatures at Nice was 12°, while at Torquay it was only 8°. On only two or three occasions did the screened thermometer at Torquay show a slight frost. The amount of Ozone present in Torquay during the whole winter was 47% of the possible, being lowest—38% in December, and highest—59% in February.

THE SUMMER CLIMATE.

There appears to be a widely spread fallacy that Torquay in Summer is unbearable on account of the heat. That this is

inaccurate is proved by the Meteorological returns, which show that during the hottest weather the Temperature here is often from 5 to 10 degrees less than that recorded in London ; and also by the increasing number of visitors, who year after year spend their holidays here. Although Torquay is favoured with a very large amount of sunshine (being christened "Sunshineland" by Mr. Julian Ralph, the well-known war and special correspondent), yet from its wide sea front, and being for the most part built on the slopes of hills, it is constantly fanned by cool breezes, either from the Sea or from Dartmoor in the rear.

WATER SUPPLY.

The water supply of Torquay is derived from 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	...	...	...	...	534
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. It is estimated that it will be three years before the impounded water can be delivered to the consumers,

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 average amount of rain falling on the watershed was 36·49 inches, and the average amount of evaporation was 18·4 inches over a water area of about 37 acres.

The water supply is continuous, and the average amount used for all purposes was 34·73 gallons per head per day. During the continuous dry weather in the summer, this reached a maximum of 42 gallons, showing that the water was being extravagantly used for garden purposes.

As to the quality of the water, I cannot do better than give the opinion of Professor Percy Franklin, who visited the gathering grounds in 1903, and after 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.”

The following tables give the results of his analyses:—

DR. PERCY FRANKLAND, F.R.S.

RESULTS OF ANALYSIS EXPRESSED IN PARTS PER 100,000.

Number of Sample.	Description.	Total Solid matters.	Organic Carbon.	Organic Nitrogen.	Ammonia.	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Chlorine.	Hardness.			Remarks.
									Temp-orary.	Per-mament	Total.	
TORQUAY WATER SUPPLY. <i>April 25th, 1903.</i>												
12,851	Trenchford Source, 12.40 p.m.	6.36	.056	.008	Trace.	.206	.214	1.30	0.4	2.3	2.7	Very slightly turbid, palatable, free from poisonous metals and nitrites.
12,852	Trenchford Gauge, 3.10 p.m.	7.00	.094	.009	Trace.	.165	.174	1.47	0.2	2.5	2.7	Very slightly turbid, palatable, free from poisonous metals and nitrites.
12,853	Main Stream, near Blackingstone Farm, 1.40 p.m.	6.20	.212	.029	Trace.	.044	.073	1.35	0.3	2.0	2.3	Slightly turbid, very slight peaty taste, free from poisonous metals and nitrites.
12,854	Kennick Reservoir, 2.25 p.m.	6.40	.192	.028	Trace.	.095	.123	1.50	0.4	2.1	2.5	Very slightly turbid, very slight peaty taste, free from poisonous metals and nitrites.
12,855	Tottiford Reservoir, 2.55 p.m.	6.80	.236	.032	Trace.	.097	.129	1.45	0.5	2.1	2.6	Very slightly turbid, very slight peaty taste, free from poisonous metals and nitrites.
12,856	Town Hall, 8.25 a.m.	6.84	.141	.018	Trace.	.118	.136	1.50	0.3	2.2	2.5	Very slightly turbid, very slight peaty taste, free from poisonous metals.

PERCY F. FRANKLAND, Ph.D., M.Sc., LL.D., F.R.S.
May 11th, 1903.

RESULTS OF BACTERIOLOGICAL EXAMINATION.

Number of Sample.	Description.	Number of Micro-organisms obtained from One Cubic Centimetre of Water.				Cultivation in Plain Broth.	Cultivation in Carbolic Broth.	Anaërobic Cultivation of Spores in Milk.	Remarks.
		Ordinary Gelatine Culture.	Number of Days Incubated.	Carbolic Gelatine Culture.	Number of Days Incubated.				
TORQUAY WATER SUPPLY. <i>April 25th, 1903.</i>									
12,857	Trenchford Source, 12.40 p.m.	248 347	2 3	3 —	7 —	No Indol. ..	No Indol. ..	0	
12,858	Trenchford Gauge, 3.10 p.m.	228 520	2 5	0 —	7 —	Very faint Indol. ..	No Indol. ..	0	
12,859	Main Stream near Blackingstone Farm, 1.40 p.m. ..	435 770	2 3	16 —	7 —	No Indol. ..	No Indol. ..	Coagulated (4 days)	
12,860	Kennick Reservoir, 2.25 p.m.	133 209	2 3	0 —	7 —	No Indol. ..	No Indol. ..	0	
12,861	Tottiford Reservoir, 2.55 p.m.	45 160	2 7	0 —	7 —	Very faint Indol. ..	Very faint Indol. ..	0	
12,862	Town Hall, 8.25 a.m. ..	218 410	2 5	1 —	7 —	No Indol. ..	No Indol. ..	0	

PERCY F. FRANKLAND, Ph.D., M.Sc., LL.D., F.R.S.

May 11th, 1903.

In order that frequent chemical analyses might be made, the Corporation gave me power to equip a laboratory for this purpose. This was ready for use in March, and since then the water supplied to the town has been regularly examined, besides a number of analyses of the water from the various springs and streams.

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 ...	...	...	...	7·0
Chloride ...	...	...	...	1·7
Hardness ...	...	...	...	2·24
Nitrites ...	...	...	...	Nil.
Nitrates ...	...	...	...	·12
Free Ammonia ...	...	...	...	·001
Organic Ammonia ...	...	...	...	·009
Oxygen absorbed in 4 hrs. at 80° F. ...	...	...	...	·070
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, the main sewer through Hele has been completely relaid, and many of the house drains which were found to be defective have been renewed. New sewers have also been laid in Babbacombe Road and the Lisburn district, to do away with the flooding which used to take place during times of heavy rain.

Progress has been made in improving the ventilation of the sewers. Thirty-six ventilating columns have been erected in various parts of the town, and it is proposed to erect forty-seven more as soon as possible. Seven flushing tanks have also been constructed in the Chelston and Barton districts.

HOUSE DRAINAGE.

The inspection and testing of the drains of all new houses is done by the Sanitary Inspectors, a total of 66 systems having been tested during the year.

The granting of Sanitary Certificates by the Corporation.

The number of certificates granted during the year was 89, an increase of 23 over that for 1903. 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.

COLLECTION AND DISPOSAL OF REFUSE.

House refuse is removed by the employées 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.

During the year, the Destructor Committee decided to destroy all garden refuse that was brought to the works. This was done as the result of complaints of the difficulty of getting rid of it, and on the representation of the Sanitary Committee, that nuisances were being caused by the depositing of large quantities in the common private lanes at the rear of houses. The amount of green and wet refuse brought has caused great difficulties in its disposal.

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.

In estimating the population last year, I showed that by adding the natural increase, that is, the excess of births over deaths for the past three years to the census population, a total of almost 33,800 was obtained. This estimate was confirmed by a second method, that is, by multiplying the number of inhabited houses by the average number of persons found to be inhabiting each house at the last census. So that for the calculation of the various rates, this figure (33,800) was used.

In estimating the population for 1904, I consider that adding the natural increase to last year's population will be sufficiently accurate, although some 60 new houses have been occupied, and there seem to be fewer unlet houses in the district. In preparing the various rates, an estimated population of 33,850 will therefore be used.

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 last year calculated a factor by which all Torquay rates have to be multiplied to compare them with those of the whole country. This factor was .8044.

BIRTHS.

The births registered during 1904 numbered 530—males 250, females 280—being 6 less than in 1903.

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

1st quarter	...	...	...	112
2nd „	...	...	...	153
3rd „	...	...	...	148
4th „	...	...	...	117
Total	...	...	...	530

The birth rate was 15.7 per 1000, being .2 per 1000 less than 1903. It is the lowest rate recorded. 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

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 1903. It is very satisfactory to note the large percentage of children protected from this loathsome disease.

Year.	Total births registered	Successfully vaccinated	Unsusceptible 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 apprised	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

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 45 cases were notified. Four were cases of Diphtheria, three Erysipelas, twenty-eight Scarlet Fever, nine Enteric Fever and one Puerperal Fever.

Comparison with previous years.

Notifiable Disease.	1904.	1903.	1902.	1901.	1900.
Small-pox	—	2	—	—	—
Cholera	—	—	—	—	—
Diphtheria	4	13	9	5	8
Membranous croup	—	—	—	—	—
Erysipelas	3	3	3	3	7
Scarlet fever ..	28	21	17	62	36
Typhus fever ..	—	—	—	—	—
Enteric fever ..	9	9	8	18	7
Relapsing fever ..	—	—	—	—	—
Continued fever ..	—	—	—	—	—
Puerperal fever ..	1	1	—	1	—
Plague	—	—	—	—	—
*Chicken Pox ..	—	5	33	—	—
Totals ..	45	54	70	89	58

*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 1903 :—

	Small-pox.	Diphtheria and Membranous Croup.	Enteric Fever.	Puerperal Fever.	Scarlet Fever.	Erysipelas.	Chicken-pox	Total.
January ..	—	—	1	—	1	1	—	3
February ..	—	1	2	—	2	—	—	5
March ..	—	1	—	—	2	1	—	4
April ..	—	—	1	—	—	—	—	1
May ..	—	—	—	—	—	—	—	0
June ..	—	—	—	—	1	—	—	1
July ..	—	—	3	—	2	1	—	6
August ..	—	—	2	—	4	—	—	6
September ..	—	1	—	—	1	—	—	2
October ..	—	1	—	1	6	—	—	8
November ..	—	—	—	—	4	—	—	4
December ..	—	—	—	—	5	—	—	5
Totals ..	—	4	9	1	28	3	—	45

In table III. of the Local Government Board returns on page 39, full details are given of the age of patients, the number occurring in each ward, and the number of such removed to Hospital.

We there find that a total of 30 out of 45 were removed, this is equal to 66 per cent. They were as follows :—

Disease.	Number removed.	Percentage of total cases.	Where taken.
Diphtheria	2	50%	Sanatorium, Newton Road
Scarlet Fever ..	22	78%	„ „ „
Enteric Fever ..	6	66%	Five to Torbay Hospital, one Rosehill, Children's 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.

I am glad to be able to report that the Local Government Board have granted permission to borrow the money required for the purchase of a modern steam disinfecter. The building is now in the course of erection at the Sanatorium, and will be ready for use in a very short time. This will meet a long felt want.

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 seven 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 was used in 1903

for the reception of two imported cases of small-pox, and has been kept in readiness for any 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.

The Town remained free from Small-pox during 1904.

SCARLET FEVER.

Twenty-eight cases were notified during the year, none of which ended fatally. Most of the cases occurred in the last half of the year. Twenty-two were removed to the Sanatorium. Six cases were undoubtedly imported, the patients having only been in the district a few days prior to the onset of the disease.

DIPHTHERIA.

Only four cases were notified, compared with thirteen in 1903. Two were removed to the Sanatorium, one proving fatal a few hours after admission. It is difficult to trace the origin of the infection in most cases of diphtheria. In the case which ended fatally, there was a history of the lad a few days before the onset endeavouring to recover a penny from the street gully, which, when examined later, was found to have the tongue of the trap broken, allowing the free escape of sewer air. In the other three cases, examination of the drains showed defects, which, although not accounting for the disease, yet may render the inhabitants of such houses more susceptible to the infection.

ENTERIC FEVER.

Nine cases were notified, the same number as in 1903. Three patients were non-residents, two being admitted for treatment to the Torbay Hospital from outside, and the third, a tramp, also admitted to that institution, having arrived here ill. Four cases proved fatal. The supposed sources of infection are as follows:—

Two were infected from an unrecognised case.

In one case the patient was a child of two years. Both the Medical Attendant and I suspected that the consumption of what are known as "sand soles" was the cause of the disease.

These are a species of flat fish, which are obtained from tidal rivers, and are cooked without previous dressing by placing them for one or two minutes in boiling water. The food of such fish consists of small crustaceans and molluscs, which in a tidal river, subject to sewage pollution, are not unlikely to contain typhoid and other sewage organisms.

The history in another case proved almost conclusively that the infection was due to eating specifically infected cockles.

One case occurred in a child who was suffering from spinal curvature, for which he had been in hospital some time. It is suspected that the infection was conveyed in some article of food brought by friends.

In another case defective drainage was a possible source.

The remaining three cases, as previously stated, were imported.

ERYSIPELAS.

Three cases were notified, and none were fatal.

PUERPERAL FEVER.

One case was notified. The midwife in attendance was warned against going to any fresh cases for a time.

Working of the Midwives Act, 1902.

The Town Council have now taken over the local administration of the Act. A committee was formed in November to carry out its requirements. Placards and newspaper advertisements have been issued, drawing the attention of all midwives to the Act, and an endeavour made to get these registered. Although only two months remain in which midwives can register, who were in *bona fide* practice one year prior to July, 1902, yet very few have applied.

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, 1904.

To the Chairman and Members of the Sanitary Committee.

GENTLEMEN,

On the 1st April, 1903, there were no patients in the hospital; from that date till the 31st March, 1904, 24 patients were admitted, two less than in the previous year. The patients were under treatment a period of 809 days, giving an average stay in hospital of 36 days.

Fifteen were cases of scarlet fever. One patient was admitted, suspected to be suffering from scarlet fever, but was discharged after being under observation a fortnight. There were eight cases of diphtheria. One of these proved fatal a few hours after admission. This was the only death.

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

1904.	EXPENDITURE.		£	s.	d.
Diet of Patients	...	...	...	61	15 3
Wages and Diet of Nurses	...	...	...	103	17 0
Laundress	...	...	...	55	10 0
Curator	...	...	...	64	11 6
Surveyor's Account	...	...	...	21	0 10
Tradesmen's Accounts	...	...	...	37	17 0
Rents, Rates and Insurance	...	...	...	19	4 3
Drugs	...	...	...	14	15 0
Medical Fees	...	...	...	11	11 0
Conveyance of Patients	...	...	...	8	14 0
Coal, Coke and Wood	...	...	...	52	5 3
Rent of Telephone	...	...	...	10	0 0
Painting	...	...	...	23	10 0
Total			...	£484	11 1

THE COCKINGTON SANATORIUM.

As reported in my annual report for 1903, the above sanatorium had to be opened for the reception of two cases of small-pox on August 14th, 1903. The patients were discharged cured on September 28th, 1903. As it was impossible to safely disinfect the clothing of patients and attendants, they were burnt and the owners compensated.

The total cost of this hospital for the year was £113 16s. 4d., but as the rent and taxes came to £50 16s. 10d., the cost of treatment came to £62 19s. 6d.

The accounts are as follows:—

				£	s.	d.
Rent and Taxes ...	...	...	...	50	16	10
Nurse's Fee ...	...	...	...	21	10	6
Diet of Patients and Nurse ...	...	...	...	13	2	8
Drugs, etc. ...	...	...	...	1	13	1
Tradesmen's Accounts ...	...	...	...	7	13	2
Compensation Paid for Destroyed Clothing	...	...	...	19	0	1
Total ...				£113	16	4

The total cost of both hospitals being:—

				£	s.	d.
Cockington Sanatorium ...	...	...	...	113	16	4
The Borough Sanatorium ...	...	...	...	484	11	1
Total ...				£598	7	5

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

I am, Gentlemen,

Your obedient servant,

T. DUNLOP,

Medical Superintendent.

DEATHS.

During 1904, the number of deaths registered in Torquay was 473—males 211, females 262.

The gross death-rate for the Borough is equal to 13·9 per 1000. If it was permissible to eliminate the deaths of 60 visitors, the rate would be equal to 12·4 per 1000 per annum. To obtain a correct death-rate, it is necessary to add 28 deaths of persons occurring in the Newton Abbot Workhouse who belong to Torquay, also one death in the Borough Sanatorium, and subtract the deaths of 20 non residents who died in Hospitals and Public Institutions in the town. The total deaths would therefore be 482, and the **corrected rate** equal to 14·2 per 1000 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.
1900	460*	13·7	12·8	18·3
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

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

If the death-rate of 14·2 is corrected for age and sex distribution, so as to make it strictly comparable with that for England and Wales, it would be equal to 11·4 per 1000 per annum.

During the year there were 27 inquests, while 5 deaths were uncertified.

DEATHS AT VARIOUS AGE PERIODS.

				Percentage of total deaths.
Of the total of 482 deaths—				
64	were under 1 year of age	...	...	13·3
22	1 year and under 5 years	...	...	4·6
11	5 years and under 15 years	...	...	2·3
21	15 " " 25 "	...	...	4·4
163	25 " " 65 "	...	...	33·7
201	over 65 years	...	...	41·7
Total 482 at all ages ...				100·0

The deaths in the various wards are given in table II., on page 38.

INFANTILE MORTALITY.

The total number of deaths of children under 1 year was 64. As there were 530 births during the year, the infantile mortality is equal to **120 per 1000 births**. The rate for 1903 was 102 per 1000 births, and the average for the past 9 years 135. The rate for England and Wales for 1903 was 146 per 1000 births.

The following table gives the cause of death among infants for the past four years:—

				1904.	1903.	1902.	1901.	1900.
Measles	...	...	...	1	0	1	5	1
Whooping Cough	...	...	...	1	3	7	0	1
Influenza	...	...	...	0	0	0	1	0
Diarrhoea	...	...	...	5	3	3	1	11
Enteritis	...	...	...	6	3	3	2	3
Septic Diseases	...	...	...	0	1	0	0	0
Phthisis	...	...	...	0	0	1	2	1
Other Tubercular Diseases	...	...	...	0	1	4	2	1
Bronchitis	...	...	...	10	6	12	8	6
Pneumonia	...	...	...	2	1	4	2	7
Premature Birth	...	...	...	18	8	15	19	15
Heart disease	...	...	...	0	2	0	1	0
Accidents	...	...	...	0	2	3	1	1
All other causes	...	...	...	21	25	37	26	23
Totals ...				64	55	91	70	70

THE CAUSES OF DEATH.

The causes of, and ages at, death during 1904 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 Diarrhœa.

During 1904 there were 13 such deaths in Torquay—one from Measles, two from Whooping Cough, three from Enteric Fever, and six from Diarrhœa.

The rate is equal to $\cdot 38$ per 1000 per annum, compared with $\cdot 35$ per 1000 in 1903. The Zymotic death-rate in England and Wales in 1904 was $1\cdot 94$ per 1000 per annum, so that the rate for Torquay is remarkably low.

SMALL-POX.

Details given under notifiable diseases.

MEASLES.

Measles became epidemic in parts of the Borough in the latter half of the year. I first heard of it occurring in a private school, thence it spread, Upton National Schools being first attacked, necessitating the closure of the Infants' Department early in December. The boys' and girls' schools were kept open until the holidays, although the attendance was somewhat affected. Towards the end of December the Torquay National Schools were attacked, principally among the infants, but it was also found to be spreading quickly among the the Boys' and Girls' Departments, so that the whole school was closed for a week before the holidays. I cannot say that these precautions have had much effect on the epidemic.

Although those schools first affected on re-opening were found to be free from the disease, yet it has subsequently spread to other schools. Fortunately the disease has been mild, only one death being registered during the year. It is greatly to be regretted that the Board of Education will not now allow the attendance of scholars excluded on account of the disease. It

is very questionable whether any benefit is obtained by school closure, if the scholars attending the school live in close proximity to one another.

WHOOPING COUGH.

Just before Easter, many of the children attending the Torquay National Schools, Infants' department, were attacked by Whooping Cough. The attendance was greatly lowered, but the coming of the holidays rendered it unnecessary to close the school. When the school re-opened, the attendance was satisfactory. I heard of cases here and there for several months, but there was nothing like an epidemic. Two deaths were registered from this disease.

CHICKEN POX.

Cases occurred in various parts of the Borough. There were no deaths.

MUMPS.

In March, many cases of Mumps occurred among children attending the Chelston National School. Although many were affected, it soon passed away.

Diphtheria and Enteric Fever were dealt with under notifiable diseases.

INFLUENZA.

Influenza was the cause of one death.

DIARRHŒA AND ENTERITIS.

Six deaths were caused by Diarrhœa, all being children under five years of age. Enteritis caused nine deaths, six being infants. On the whole, the Borough keeps remarkably free from these diseases. It is probable that most of the cases that occur in infants here are due to injudicious diet, and as future mothers become better educated in the proper feeding of infants, the prevalence of such diseases will be reduced. It is certainly time that the teaching of hygiene should be compulsory in our elementary schools; and as a first step in this direction, all pupil teachers should be thoroughly instructed in elementary physiology and hygiene.

PHTHISIS AND TUBERCULAR DISEASES.

The number of deaths registered as being due to Phthisis was 53, of these twenty-two were visitors. As 12 of these deaths occurred in Public Institutions, they may be deducted as non-residents, leaving a total of 41, which gives a death rate 1·21 per 1000.

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

1904.	1903.	1902.	1901.	1900.
1·21	1·10	1·42	2·02	1·90

Other forms of Tubercular disease accounted for 12 deaths, three being those of visitors.

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.

During the year, by the instructions of the Sanitary Committee, the following leaflet of precautions was printed for circulation by workers of the Charity Organisation and others:—

BOROUGH OF TORQUAY.

CONSUMPTION OR PHTHISIS.

This disease is spread from the sick to those who are healthy, and the chief cause is the spit of the patient. It is essential for the sake of their families and friends that persons suffering from it shall take the following precautions:—

1. The patient must not spit anywhere except in a special vessel or cup containing a little water or disinfectant fluid. When outside a small wide-mouthed bottle, with a well fitting cork, or pocket spittoon (obtainable at any chemist's for a few pence) should be used. The spittoons and all other utensils used by patients should be scalded when emptied.
2. Handkerchiefs and all linen used by patients should be soaked for some hours in disinfecting fluid and then boiled before being washed.
3. The patient should sleep alone, and, if possible, with windows open. Fresh air and sunlight are nature's cures for this disease.
4. Sunlight is a powerful disinfectant, so that carpets, bedding, etc., which cannot be washed, should frequently be exposed to its rays.
5. In the sick room, small strips of carpet which can easily be removed should be used. The floor should be wiped over daily with disinfectant fluid, and all dusting done with a duster damped with the same.
6. All food which has been taken into the sick room should be thrown away if not consumed by the patient.

7. In case of death or removal of patient, the room should be disinfected, and afterwards, if possible, limewashed, or the paper removed before being thoroughly cleansed.

NOTE A.—Supplies of Disinfectants can be obtained free of charge at the Town Hall.

NOTE B.—When a room has to be disinfected after death or removal of the patient, a letter should be sent to the Town Hall. The work will be done free of charge.

In 1903 the Corporation adopted a bye-law prohibiting spitting in public buildings and carriages, etc.

CANCER, MALIGNANT DISEASE.

Cancer was responsible for 42 deaths. In 1903 there were 47, and 1902 35.

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 1904 was equal to 1·24 per 1000 of the population. If this rate is corrected for age and sex distribution, it would only be ·97 per 1000. The rate for England and Wales for 1902, the only figures at present published, is ·85 per 1000 of the total population.

AGE AND SEX DISTRIBUTION OF CANCER DEATHS.

	35—45	45—55	55—65	65—75	over 75	Totals
Males	1	2	6	8	1	18
Females	5	0	8	5	6	24
Total	6	2	14	13	7	42

In the following table the chief headings under which deaths from cancer occur are given :—

REGISTERED DEATHS FROM CANCER (MALIGNANT DISEASE),

Seat of Disease.	Sarcoma.		Carcinoma.		Malignant Disease or Cancer.		Total.
	M.	F.	M.	F.	M.	F.	
Neck, Throat, Tonsils, Larynx ..	1	—	3	—	1	1	6
Oesophagus	—	—	—	—	1	—	1
Breast	—	—	—	3	—	4	7
Stomach and Pylorus ..	—	—	1	2	4	1	8
Liver and Gall Bladder ..	—	—	2	—	—	2	4
Pancreas	—	—	1	1	1	—	3
Intestines (excluding Rectum) ..	—	—	—	1	1	1	3
Rectum	—	—	1	1	—	1	3
Uterus	—	—	—	3	—	2	5
Arm, Wrist, Hand	—	—	—	—	—	—	—
Parts unspecified	—	—	1	—	—	1	2
Totals	1	0	9	11	8	13	42

SANITARY WORK, 1904.

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.

COMBINED DRAINS.—Several times during the year the vexed question has cropped up as to whether a combined drain was a drain or a sewer. The Sanitary Committee have consistently held that any drain taking the drainage of several houses, which passed through private property and which was solely for the use of those houses, was a drain and not a sewer vested in the Local Authority. This opinion has now been confirmed in the Court of Appeal by the result of the cases of *Thompson v. The Eccles Corporation*, and *Haedicke v. The Friern Barnet Urban District Council*. One important point decided there was, that in the event of a nuisance arising from defects or obstructions in a combined drain, the person on whose property the nuisance occurred was responsible for its abatement.

POLLUTION OF STREAM.

An inspection of the sanitary conveniences for the use of workmen in the goods department at Torre Station showed that the sewage was discharged direct into the stream which runs in a culvert from there to the Rosery grounds, and thence through the Recreation Grounds to discharge into Torbay. Notice was served on the Company, who replied that they considered that this culvert was a sewer, as they knew that several houses discharged their sewage directly into it. It was necessary, therefore, to examine the drainage of the houses along the route, when it was discovered that this was the case with four premises. After notice the owners altered their drains and connected them to the sewer. The Railway Company are now taking steps to provide proper sanitary accommodation at their yard.

SLAUGHTER HOUSES.

There are seven slaughter-houses in the Borough. Four are registered, one has a perpetual license, while two require to be licensed each year.

I have inspected them several times during the year, and in November submitted a detailed report. The result of which was that the Council agreed to the Sanitary Committee's recommendation to adopt the Local Government Board's Model Bye-laws, which will considerably strengthen the hands of your officers. In a few of the slaughter-houses at the present time, sufficient care is not taken to clean the apparatus used in slaughtering, with the result that the blood becomes so hardened on it that it is almost impossible to remove. Again, fat and hides are kept too long on the premises. The bye-laws will secure more dispatch in cleansing, and will ensure the regular limewashing of the premises. I reported that I considered the position of one slaughter-house in Babbacombe most objectionable. It lies in a narrow street, quite surrounded by houses, and close to the schools. As this is a registered slaughter-house, and as the owner keeps it clean, it is impossible to abolish it.

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.

There are two slaughter-houses situated just outside the Borough boundary, over which we have no control. Twice

during the year trouble has arisen from the abominable smell caused by spreading the slaughter-house manure from one of these.

UN SOUND FRUIT.

In July 2 cases with baskets of strawberries were seized. As the fruit was found to be quite decomposed, a Magistrates' order was obtained for its destruction.

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 Analyses.	Remarks.
Beer	6	Genuine	11 samples of milk were found not genuine. Proceedings were taken in six cases where the milk contained added water, or deficient in milk fat.
Brandy	2	„	
Bread	6	„	
Butter	11	„	5 defendants were convicted and one dismissed.
Gin	1	„	5 samples were not genuine, and vendors were cautioned:—
Milk	43	32 genuine	Deficient in milk fat to the extent of 5% ;
Rum	1	Genuine	Boracic acid, 8.69 grains to the pint of milk ;
Sugar	6	„	Deficient in milk fat 5 % ;
Whisky	2	„	Boracic acid, 7½ grains per pint of milk ;
			Milk contained 5 % added water.
Total	.. 78		Milk was the only article adulterated.

The fact that boracic acid was being used as a milk preservative was reported to the Sanitary Committee, who instructed me to draw up and distribute to the dairy farmers and milk dealers the following circular, as a warning:—

To Dairy men and Milk Purveyors.

The attention of the Sanitary Committee of the above Council has been drawn to the fact that during the past year the Public Analyst has reported that preservatives, in varying amounts, have been found in samples of milk taken by the County Police for analysis. They, therefore, desire to warn Dairy men and Milk Purveyors against the use of preservatives,

and to point out that they are liable to heavy penalties for so adulterating milk. The Birmingham and other Sanitary Authorities have recently obtained convictions against dairy-men for using preservatives. There is no doubt that milk containing preservatives is injurious to health, especially to infants and invalids, who subsist almost entirely upon milk. The principal reason why milk quickly decomposes, is that it has become fouled with extraneous matter during the process of milking. If care and scrupulous cleanliness is observed by milkers, with regard to their hands and the udders of the cows, there would be no necessity to use preservatives, as milk would easily keep for a sufficient time. There is little use in exercising the great cleanliness that is observed in most dairies, if the milk is polluted before it reaches there.

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 white-wash 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. Could not the teachers of our County Councils, when giving lessons in dairy work, endeavour to preach cleanliness in the cowsheds as well as in the dairies?

The recent legal decision in the case of *Frost v. the Aylesbury Dairy Company* puts a serious responsibility upon Milk Dealers. In this case, the plaintiff sued for the expenses he had been put to, by reason of the death of his wife from Typhoid fever, alleged to have been caused by the milk supplied by the defendant Company. It was proved that a number of cases were attributed to the use of this milk, and that, at one of the farms supplying this Company, three cases had previously occurred, and that the water used there was polluted. The Jury gave a verdict for plaintiff with damages of £106, as claimed.

There are 91 registered dairymen and cow-keepers in the Borough who receive milk from 63 farms situated outside the District.

ICE CREAM TRADE.

There are three manufacturers of ice cream in the town. They were all inspected, and were found to be clean and well looked after.

OFFENSIVE TRADES.

Tripe boiling is the only offensive trade carried on in the Borough. One building is situated in Upton, and is always found in a clean and satisfactory condition. Towards the end of the year, it was discovered that tripe boiling was being carried on in a shed near Hele. The owner pleaded ignorance of the

necessity to have permission, and at once applied for it. Inspection showed that the premises, in their then condition, were not satisfactory. The owner was informed that, unless they were rendered suitable or the trade given up within a month, he would be prosecuted for carrying on the trade without permission.

COMMON LODGING HOUSES.

There are five registered Common Lodging Houses, two more than last year. These two, although in existence for some years, had not been registered, through some misunderstanding as to the character of the lodgers and the amount of payment made. They are undoubtedly common lodging-houses, and as such the owners were called upon to have them registered. I have inspected them several times, and on the whole found them fairly satisfactory.

HOUSING OF THE WORKING CLASSES.

There appears to be little evidence of overcrowding in the Borough. Four suspected cases were investigated, but in only one was there found to be any overcrowding. This was abated. In one instance a man was found to be occupying an old work-room as a dwelling house; it was found on inspection to be quite unfit for human habitation. Notice was served on the owner, who closed the place at once. On the whole, it may be said that the members of the working classes are satisfactorily housed.

FACTORY AND WORKSHOPS ACT.

Each Inspector visits the premises in his district under the above Act, and details of these inspections will be found in their reports. The results of this combined action will be found in the table issued by the Secretary of State. I have on numerous occasions accompanied the Inspectors on their rounds.

BAKEHOUSES.

There are 57 bakehouses on the register, each of which I inspected. In my last report, I stated that there was only one bakehouse for which a certificate was granted; during the year alterations and enlargements were carried out in another, which resulted in the absorption of the yard area, and practically turned

the premises into an underground bakehouse. As I considered the place much improved by the alterations, a certificate of fitness was granted. There is little to complain of in the way the bakehouses are kept, and limewashing is regularly carried out.

OUTWORKERS.

Very little work is done by outworkers. Lists of these were obtained, and in most instances it was found that some of the work of large tailors was done by men in a small way of business on their own account, and that their premises had been inspected and were on our lists.



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)	10	54	Nil
Workshops (Including Workshop Laundries)	239		
Workplaces	36		
Homeworkers' Premises	20		
Total	305	54	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	41	36	0	0
Want of ventilation	1	1		
Overcrowding	2	2		
Want of drainage of floors	2	2		
Other nuisances	3	3		
† Sanitary accommodations { insufficient unsuitable or defective not separate for sexes	3	3		
<i>Offences under the Factory & Workshop Act :—</i>				
Illegal occupation of underground bake-house (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 which are { unwholesome (S. 108) infected (S. 110)				
Allowing wearing apparel to be made in premises infected by scarlet fever or smallpox (S. 109)				
Other offences				
Total	52	47	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 :—								
Failure to affix Abstract of the Factory and Workshop Act (S. 133)								
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	1
							Reports (of action taken) sent to H.M. Inspectors	1
Other								
Underground Bakehouses (S. 101) :—								
In use during 1903							2	
Certificates granted { in 1903								
in 1904							2	
In use at the end of 1904							2	
Homework :—								
Lists of Outworkers* (S. 107) :—							Number of	
Lists received							Lists.	Outworkers.
							18	40
Addresses of outworkers { forwarded to other Authorities								
received from other Authorities								
Homework in unwholesome or infected premises :—								
Notices prohibiting homework in unwholesome premises (S. 108)							Wearing Apparel.	Other.
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 1904.								
Important classes of workshops, such as workshop bake-houses, may be enumerated here. {								
Total number of workshops on Register (including homeworkers' premises) ..							305	

* 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 1904 AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		Total Deaths Registered in the District.				TOTAL DEATHS IN PUBLIC INSTITU- TIONS IN THE DISTRICT.	Deaths of Non-Residents registered in Public Institutions in the District.		Deaths of Residents registered in Public Institutions beyond the District.	NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate.*	Under 1 year of age		At all ages.			10	11		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	53	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	
Averages for years 1895—1903.	33461	591	17.6	81	135	525	15.6	47	50		478	14.2	
1904.	33850	530	15.7	64	120	473	13.9	42	20	29	482	14.2	

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

NOTE.—The deaths to be 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 to be 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.

LOCALITIES.	Population Census 1901.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.
Torre	3851	50	51	5
Waldon	3576	42	45	4
Upton	4339	92	84	13
Ellacombe	5911	124	82	16
Strand	3129	51	50	11
Torwood	3644	21	51	2
St. Mary-Church ...	3312	47	49	6
Babbacombe	3264	63	36	4
Chelston	2599	34	25	3
The Borough ...	33625	524	473	64

TABLE III.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE
YEAR 1904.

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 ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cholera ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria ..	4	—	—	3	1	—	—	—	1	—	1	—	—	1	—	1	—	1	—	1	—	—	—	—	—
Membranous croup ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Erysipelas ..	3	—	—	1	—	2	—	1	—	—	2	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet fever ..	28	—	9	16	2	1	—	—	1	6	6	1	1	2	2	8	1	1	5	4	—	1	2	2	6
Typhus fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric fever ..	9	—	1	2	2	4	—	1	1	5	—	1	1	—	—	—	—	—	5	—	1	—	—	—	—
Relapsing fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Continued fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal fever ..	1	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Plague ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals ..	45	—	10	22	6	7	—	3	3	11	9	2	3	3	2	9	1	2	10	5	1	1	2	2	6

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

* This space may be used for record of other disease the notification (compulsory or voluntary) of which is in force in the district.

† These age columns for notifications should be filled up in all cases where the Medical Officer of Health, by inquiry or otherwise, has obtained the necessary information.

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

TABLE IV.

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1904.

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	1	1	—	—	—	—	—	—
Scarlet Fever	—	—	—	—	—	—	—	—
Whooping-cough	2	1	1	—	—	—	—	—
Diphtheria and Membranous croup	1	—	—	1	—	—	—	—
Croup	—	—	—	—	—	—	—	—
Fever { Typhus	—	—	—	—	—	—	—	—
{ Enteric	3	—	—	1	—	2	—	3
{ Other continued	—	—	—	—	—	—	—	—
Epidemic influenza	1	—	—	—	—	—	1	—
Cholera	—	—	—	—	—	—	—	—
Plague	—	—	—	—	—	—	—	—
Diarrhoea	6	5	1	—	—	—	—	—
Enteritis	9	6	—	—	—	3	—	—
Puerperal fever	—	—	—	—	—	—	—	—
Erysipelas	—	—	—	—	—	—	—	—
Other septic diseases	3	—	—	1	1	—	1	2
Phthisis	46	—	—	1	9	32	4	13
Other tubercular diseases	12	—	3	2	2	5	—	1
Cancer, malignant disease	42	—	—	—	—	22	20	1
Bronchitis	39	10	4	1	1	10	13	3
Pneumonia	19	2	5	—	—	6	6	—
Pleurisy	—	—	—	—	—	—	—	—
Other diseases of respiratory organs	5	—	—	—	—	1	4	—
Alcoholism	5	—	—	—	—	5	—	1
Cirrhosis of liver	—	—	—	—	—	—	—	—
Venereal diseases	—	—	—	—	—	—	—	—
Premature birth	18	18	—	—	—	—	—	—
Diseases and accidents of parturition	—	—	—	—	—	—	—	—
Heart diseases	29	—	—	—	2	13	14	1
Accidents	11	—	1	3	1	4	2	6
Suicides	1	—	—	—	—	1	—	1
All other causes.. ..	229	21	7	1	5	59	136	10
All causes	482	64	22	11	21	163	201	42

BOROUGH OF TORQUAY.

SANITARY INSPECTORS' REPORTS.

CHIEF SANITARY INSPECTOR'S REPORT.

TOWN HALL CHAMBERS,

January 31st, 1905.

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

GENTLEMEN,

I have the honour to make my Twenty-Seventh Annual Report to the Urban Sanitary Authority.

HOUSE INSPECTION.

The work has been of the customary nature, namely, visiting premises upon complaint, or of sickness in same, or at request for sanitary reports.

These latter were twenty in number, whilst there were twenty-eight other houses entitled to similar Certificates by reason of the sanitary works having been carried out satisfactorily, and the tradesmen who did the work or the owners of the property asked for official approval—in many instances tradesmen had machines of their own and had applied them, with the result that the final tests were generally satisfactory.

DRAIN TESTS.

Smoke and Water, as well as Chemical tests, to the number of 267, were applied, or thirty-two in excess of that for 1903.

HOTELS AND SCHOOLS.

The entire sanitary arrangements of the two largest Hotels were overhauled and tested, one occupying nearly a week, on account of the elaborate system requiring careful and sectional testing.

I am glad to state that, although several years had elapsed since the modern systems were installed, only very trifling faults were discovered, which when properly remedied the desired Certificates were granted.

Similarly, the arrangements of three private Schools were examined and tested, ostensibly with a view to Secondary Education, having the approval of the County Council, being established. These also needed little reform, and were duly certified.

TORRE PARISH ROOMS.

Owing to continued illness in the caretaker's family at Torre Parish Rooms, I was requested to investigate the sanitary system, and I found very serious defects under the living apartments; also all the rain pipes round the building were directly connected with the sewers in the roads outside, and thus permitted sewer gas to escape under the eaves and close to open windows.

The authorities in charge duly received a detailed report of requirements, and forthwith proceeded to carry out my recommendations. All were executed and tested at various stages, and were finally certified.

DILAPIDATED HOUSES.

A small court of very dilapidated houses at Torre demanded special attention, as it was rapidly approaching a condition when the houses might be condemned as unfit for habitation. I communicated with the owner, and the result is a better appearance outside and in, and they are now fairly comfortable cottages for the labouring class.

DETAILS OF OPERATIONS.

An analysis of the various structural work done manifests the following details executed in the three hundred and ninety-eight premises visited, these being situate in the Torre, Waldon, and Chelston Wards chiefly.

54 New Sanitary Conveniences and water supply fixed.

39 Soil pipes were fixed outside and ventilated.

55 Intercepting Traps, with fresh air inlets; also Inspection Chambers to same; besides

46 Additional ditto at junctions or suitable places.

- 61 New sets of house drains were laid.
- 14 Masonry drains abolished.
- 7 Back yards were paved and drained.
- 10 New Water Taps from the main pipe were fixed.
- 76 Premises were limewashed and disinfectants supplied.
- 7 Ashbins provided.
- 34 Offensive accumulations were removed.
- 6 Nuisances from keeping of animals or fowls abated.
- 99 Gully Traps were fixed.
- 29 Fumigations after Infectious Diseases or Phthisis took place.

NEW BUILDINGS.

The New Buildings erected during 1904 numbered thirty-three, or five more than in the previous year, mostly of the artizan type, and situate in Torre and Chelston.

FACTORIES AND WORKSHOPS : BAKEHOUSES.

The number of these has diminished, and are classified as follows :—

- 23 Dressmakers and Milliners.
- 11 Plumbers and Painters.
- 8 Coachbuilders, Cycle Works, and Smiths.
- 9 Tailors.
- 6 Laundries.
- 8 Builders and Carpenters.
- 5 Saddlers and Harness Makers.
- 2 Printers.
- 3 Watchmakers, and
- 19 Bakehouses.

Much improvement in cleanliness, and of the general sanitary arrangements in the majority of these places was observed, but a few need frequent visits to ensure limewashing, etc.

MILKSHOPS AND DAIRIES.

The Milkshops and Dairies under my charge have been inspected, and were found in good condition; also seven farms in Cockington outside the Borough were visited, and with one exception were found quite satisfactory.

SANITARY CONFERENCE AT BOURNEMOUTH : VISIT TO TORQUAY.

Although not a part of regular Sanitary work, I beg to report having attended, as your delegate, the Annual Conference of the Sanitary Inspectors' Association, which was held at Bournemouth in September last, and which was instructive in many ways by the

contribution and discussion of valuable papers on Sanitary subjects by members, including a very fine address from the President, Sir James Crichton Browne, M.D., F.R.S., LL.D., &c. Not the least pleasing feature of the meeting was a visit to Torquay, on 13th September, by over one hundred Inspectors from all parts of England, together with the President, the Mayor and Mayoress of Bournemouth, and notables from that town. The President seized the opportunity to eulogise Torquay from a sanitary standpoint, after a tour of the Borough.

The party were handsomely entertained by the late Mayor and Mayoress, and the cordial thanks of the Association are recorded in the proceedings.

I respectfully desire to thank the Council for the honour done of sending me to the Congress, and beg to remain, Mr. Mayor and Gentlemen,

Yours obediently,

CHARLES MACMAHON,

*Cert. San. Inst. ; Assoc. M.B.I. Pub. Health ;
Chief Sanitary Inspector.*

ASSISTANT SANITARY INSPECTOR'S REPORT.

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

GENTLEMEN,

I have the pleasure of making this my Seventh Annual Report to the Council for the year ending December 31st, 1904, and dealing with that portion of the Borough assigned to me, viz., the wards of Torwood, Strand, Upton, and Ellacombe.

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

One hundred and five notices were served to abate nuisances, and of these eighty were preliminary and twenty-five legal.

In three instances the drains from houses were opened and examined by the Council under Section 41 Public Health Act, and in all three cases the drains were found to be in a defective condition.

One hundred and ten visits of inspection were made to premises where work was in progress, and also one hundred smoke and eighty-two hydraulic tests applied to the drains after alterations to same.

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

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

Certificates have also been granted in three other instances, where on complaint or illness the drainage work has been carried out to meet the requirements for a Certificate.

In connection with this work, fifty-seven smoke and fifty-eight hydraulic tests were made, and twenty-eight visits of inspection while work was in progress.

In the early part of the year the drains and sanitary arrangements of Torbay Hospital were examined and tested, and a full report made to the Hospital board on its sanitary condition; the whole of the recommendations embodied in the report were not carried out, but several sections of new drains were laid, which after numerous tests were left in a sound condition.

Also, at the end of the year, the entire sanitary arrangements of St. James's School, Upton, were examined and tested, and as a result it was found necessary to redrain the premises; this work was carried out during the Christmas holidays.

In connection with the new buildings in my district, fifty-two smoke and four hydraulic tests were applied to the drains of thirty houses and premises, and forty-eight visits of inspection made.

Twenty-one houses were examined for occupation.

SUMMARY OF STRUCTURAL WORK.

- 57 New sets of house drains laid.
- 6 Old masonry drains found and abolished.
- 34 Intercepting traps, with fresh air inlets fixed.
- 82 Inspection chambers to drains built.
- 27 New sanitary conveniences with water supply fixed.
- 43 Soil pipes fixed outside houses and ventilated.
- 60 Iron and brick traps removed and earthenware gullies fixed.
- 7 Old pan closets removed.
- 9 Water supplies laid on to w.c.'s found to be without.
- 17 Taps with water supply direct from main fixed.
- 5 Choked drains cleared.
- 59 Waste pipes from baths, lavatories, and sinks trapped.
- 21 Ashbins for house refuse provided.
- 20 Offensive accumulations removed.
- 6 Nuisances from keeping fowl and animals abated.
- 25 Dirty premises limewashed and cleaned.
- 7 Nuisances from stables and manure pits abated.
- 2 Workshops, without a means of drainage, drained.
- 1 Premises closed as unfit for habitation.
- 39 Premises disinfected.
- 3 Defective yards paved.

Total 530

During the year a great amount of time has again been occupied in connection with the inspection and examination of premises under the Factory and Workshops Act,

The inspection includes the following :—

Description of Trade.	Number.	No. of workrooms or workplaces.
Laundries	27	50
Dressmaker and Milliner	21	34
Corset Maker	1	1
Tailors	13	16
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	3	8
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	21	21
Total	160	245

In connection with this work, two hundred and forty-five work rooms, workshops, and work places have been visited and examined, and one hundred and sixty premises, and twenty-five notices given to remedy the following defects :—

Defects.				Notice .
Want of Limewashing and Cleansing	...	...	...	17
„ Drainage	...	...	...	2
Overcrowding	...	...	...	2
Defective W.C.	...	...	...	1
Inadequate Ventilation	...	...	...	1
Total				23

During the month of May, and again in October, I have made the half-yearly inspection of forty-six 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 December, the Dairies and Cowsheds on thirty-two farms outside the Borough have been visited and examined with the Medical Officer in regard to the supply of milk, etc., into the town.

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 four of these premises have come under my supervision, and have been visited from time to time. In two instances the keepers of houses were found to be unregistered, and were called upon to do so ; this they complied with.

At one house old stone drains were found and abolished, and new pipe drains laid.

In all the houses new room tickets, stating the cubic space and number of persons allowed, have been fixed in each of the registered rooms.

In one instance, where overcrowding was reported by the Police, a letter of warning was sent to the keeper of the house.

As in former years, the premises occupied by the French onion hawkers have been visited and inspected from time to time. In one instance overcrowding was taking place ; this was abated upon verbal notice.

The Public Slaughter House in Parkfield Road, within my district, has been regularly visited, and I regret to say that it has not always been found in a satisfactory condition.

In connection with disinfection, twenty-two rooms in various houses have been disinfected after

- 8 Scarlet Fever,
- 2 Enteric,
- 1 Measles,
- 1 Whooping Cough, and
- 8 Phthisis

cases, and in one instance the drains of a house were upon examination and testing found in a defective condition.

As previously pointed out, 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
Total ...	144	51	93

No regular house-to-house inspection has been made in my district during the past year, owing to the amount of time occupied in connection with the inspection of workshops, and increase of work in other directions.

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. San. Inst., Sanitary Inspector ;

*Inspector of New Buildings, Factory and Workshops,
Dairies, Cowsheds, & Milkshops, etc.*

ASSISTANT SANITARY INSPECTOR'S REPORT.

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

GENTLEMEN,

I beg to present to you my Fourth Annual Report, which records the work done in the St. Mary-Church district during the year ending 31st December, 1904.

COMPLAINTS.

Fifty-eight different premises were visited on receiving various complaints. The following summary shows the various heads under which these can be grouped :—

Drains	27
Keeping of animals	13
Offensive deposits ...	8
Damp and dirty premises	4
Trades and manufactures	4
Overcrowding	2

The appended table enumerates the several improvements carried out to abate the nuisances found on investigating these complaints :—

Drains relaid or repaired	13
Choked drains cleared	11
Animal nuisances abated	9
Offensive deposits removed	8
Premises cleaned and repaired	4
Trade nuisances abated	3
Overcrowding abated	2

A total of one hundred and forty-three visits to premises, nineteen smoke tests, and five water tests were made in connection with these complaints.

PREMISES VISITED ON REQUEST.

Twenty-nine premises were inspected at the request of owner or occupier, or in consequence of repairs or alterations to the drains.

In twenty-three of these houses defects were found. Ten drains were entirely relaid, and thirteen were thoroughly repaired. In eleven instances the fee of ten shillings was paid.

Thirteen sanitary certificates were granted. In superintending these operations eighty-four smoke tests were applied, and ninety-one visits to premises were made.

INFECTIOUS AND OTHER DISEASES.

Five dwelling-houses were visited in consequence of infectious diseases occurring therein. Three were scarlet fever, one diphtheria, and one typhoid fever. Five rooms were disinfected, and one defective drain was relaid. This compares very favourably with the preceding year, when nineteen premises were inspected on account of Infectious Diseases.

Seven deaths from Phthisis and Tuberculosis were reported. Two other houses, in which persons suffering from these complaints had resided, were disinfected. Eight rooms were disinfected, and five were limewashed or repapered.

NEW BUILDINGS.

Eighteen new buildings were visited during the year. One school and one dwelling-house were also inspected in consequence of additions being built to the same. The majority of new buildings were erected in Babbacombe district. The drainage of these buildings was smoke tested in sections. On completion a final inspection was made in all cases, prior to granting the Habitation certificate. Thirteen drainage and thirteen habitation certificates were issued.

Smoke tests were applied in sections to about three hundred and fifty feet of new sewer, laid by the owners of a building estate in St. Mary-Church, to receive the drainage of the houses to be built thereon.

A total of fifty-eight visits of inspection and sixty-three applications of the smoke test were made in connection with new house drains and sewers.

HOUSE-TO-HOUSE INSPECTION.

Under this section, eighty-three premises at Hele, Babbacombe and St. Mary-Church were visited. In sixty-seven cases the drains were smoke tested, and in twenty-seven instances defects were found. Thirteen of these houses were visited as recently as December, and consequently the work of redraining the same was in hand at the end of the year, and will be included in the next report.

The improvements effected in consequence of this systematic inspection may be summarised thus :—

Drains relaid or repaired	...	...	14
New wash down pans fixed	...	...	14
New flush cisterns fixed to water closets			11
Flush cisterns cleaned and repaired	...		6
Premises cleaned and limewashed	...		15

One hundred and fifty-seven visits of inspection, one hundred and four smoke tests, and seven water tests were made in respect of these house-to-house inspections.

DAIRIES, COWSHEDS, AND MILKSHOPS.

There are thirty dairies and milkshops, and twenty-five cowsheds situated in the St. Mary-Church and Babbacombe District. They were inspected twice during the year. In a few instances it was necessary to draw attention to the limewashing of the cowsheds. On again visiting these sheds it was found that this requirement had been fulfilled. One cowshed was redrained, and a supply of town water laid on.

Twenty-two dairy farms situated at Dacombe, Stoke-in-Teignhead, Shiphay, Edginswell, Coffinswell, Rocombe, and Coryton were visited, with the Medical Officer of Health, in June, and again in December. They were found in a very creditable condition. One old cowshed was pulled down and replaced by a well-built brick structure during the year. Large quantities of milk and cream are sent daily from these extramural farms to dealers within the Borough of Torquay.

SLAUGHTER HOUSES.

The six slaughter houses situated in this district were periodically visited during the year, and were found to be up to the usual standard of cleanliness.

BAKEHOUSES.

The seventeen retail bakehouses situated in this portion of the Borough were inspected by the Medical Officer of Health and myself during the year. In only three cases was it found necessary to require the premises to be limewashed. One water closet, which was found to be without means of flushing, was supplied with a water waste preventer.

FACTORY AND WORKSHOPS ACT, 1901.

Under this heading seventeen Laundries and eighteen Tailor and Dressmaker work-rooms were inspected during the year. Six intimation notices were served to abate nuisances found on these inspections. Six Laundries and Washhouses were limewashed, and the floor of one was repaired in compliance with the notices above referred to.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

H. RUSSELL SMITH, C.S.I.,

*Sanitary Inspector, and Inspector of New Buildings,
Workshops, and Dairies, &c.*

FACTORY AND LABORATORY

The factory and laboratory are situated in the same building, and the factory is on the left and the laboratory on the right. The factory is a large building with a high roof and a large chimney. The laboratory is a smaller building with a lower roof and a smaller chimney. The factory is used for the production of goods, and the laboratory is used for the production of scientific knowledge.

THE FACTORY AND LABORATORY

THE FACTORY

THE LABORATORY

The factory is a large building with a high roof and a large chimney. It is used for the production of goods. The laboratory is a smaller building with a lower roof and a smaller chimney. It is used for the production of scientific knowledge. The factory and laboratory are situated in the same building, and the factory is on the left and the laboratory on the right. The factory is used for the production of goods, and the laboratory is used for the production of scientific knowledge.

BOROUGH OF TORQUAY.



Meteorological Report

FOR THE YEAR 1904.

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

Borough Meteorologist.

The Borough Observatory,

February 1st, 1905.

METEOROLOGICAL REPORT.

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

GENTLEMEN,

I beg to submit the following Report upon the Meteorological Observations made at the Borough Observatory during the year 1904. Readings have been taken twice daily—once only on Saturdays—and in accordance with the rules of the Royal Meteorological Society.

The instruments at both stations have been in continuous use, and have been kept in good working order. Mr. Marriott, the Assistant Secretary of the Royal Meteorological Society, paid a visit of inspection in August, and checked and verified these instruments.

The Monthly Return, 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. The usual Monthly Reports have been furnished to the Royal Meteorological Society and to the British Rainfall Organization.

Weekly Reports have been sent for publication to the "Torquay Directory" and "Torquay Times" (part of the year only), and "Devon and Exeter Gazette." A weekly report of bright sunshine has been made to the Meteorological Office, and published in the official journal.

Daily charts of morning observations have been posted in the town and exhibited at the weather office, where, in the summer particularly, information respecting probable weather has been furnished to visitors.

The evening observations have been furnished by telegraph service to the following journals :—" Liverpool Post," " Manchester Guardian," " Newcastle Chronicle," " Bristol Mercury," " Sheffield Independent," " Leeds Mercury," * " Birmingham Post," * " Sheffield Telegraph," " Western Morning News," " Western Daily Mercury," London " Standard," * " Daily News," " Daily Chronicle," and " Morning Leader " (* summer only); to the " Daily Mail " when enquired for.

A similar set of observations has been forwarded by post to twenty-three stations and receiving offices on the G.W. Railway, and exhibited in a special frame. These stations include such important centres as London, Liverpool, Manchester, Birmingham, Cardiff, and Shrewsbury. Newcastle has just been added to this list.

With the sanction of the Sanitary Committee, I obtained in December from the Meteorological Office, the grant of two free copies of their Daily Weather Report. These are being exhibited at 34 Fleet Street, for the convenience of the public.

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.

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 16 years', for Temperature and Rainfall of 28 years', and for Pressure of 20 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 official temperatures for the Royal Meteorological Society 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 readings have been far more satisfactory since its removal to this site.

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.

1904.	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 ...	53·4	21	— 8·5	6·2	22nd	73	12
February ...	62·7	22	— 18·9	8·5	18th	85	10
March	124·3	34	— 15·0	10·3	23rd	84	7
April	180·2	44	nil	12·8	25th	89	3
May	183·3	39	— 46·8	13·8	19th	87	2
June.....	240·1	49	+ 9·5	14·5	28th	88	3
July	240·8	50	+ 5·2	14·8	8th	90	2
August.....	233·2	53	+ 27·5	12·9	2nd	83	0
September..	176·8	47	+ 13·8	11·3	7th	84	2
October ...	90·6	28	— 23·4	8·9	8th	81	7
November..	96·9	37	+ 31·5	8·1	14th	85	7
December..	53·4	22	+ 0·1	6·0	8th	76	12
Year...	1735·7	39·3	— 25·4	14·8	July 8th	90	67

REMARKS.

The total amount of bright sunshine recorded for the year was 1,736 hours, being 36 hours more than the total of 1903, but 25 hours below the average of 15 years. The summer sunshine—April to September—amounted to 1,254 hours, or 6·9 hours per day, and the winter sunshine to 482, or 2·6 hours per day. The early months were again dull—January and February were very wet—with a deficiency on the quarter of 42 hours, but of November, dreaded in large towns because of its dullness, a writer in the “Lancet” says, “Among the English places none compare with Torquay and Jersey. Torquay was particularly bright for such a month as November. During the cold and rough weather for the last fortnight it was the most sunny spot in the United Kingdom.” It is a curious fact that while the mean sunshine of Torquay is no less than 238 hours above that of a well-known resort on the S.E. coast, yet during this last summer the total registered at the S.E. town during the months of June, July, and August was 728 hours, at Torquay, 708 hours. The deduction is obvious, that Torquay enjoys an excess of sunshine when it is most needed and appreciated.

The following table gives the comparative sunshine returns for the year 1903, the last figures available :—

BRIGHT SUNSHINE, 1903.

COMPARISON WITH OTHER TOWNS AND HEALTH RESORTS.

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

	Hours.		Hours.
TORQUAY	.. 1700	Tunbridge Wells	.. 1537
Southport ..	.. 1452	Folkestone ..	.. 1686
Scarborough ..	.. 1250	Brighton ..	.. 1650
Douglas ..	.. 1538	St. Leonard's ..	.. 1668
Harrogate ..	.. 1362	Eastbourne ..	.. 1682
Blackpool ..	.. 1474	Bournemouth	no information
Llandudno ..	.. 1509	Ventnor ..	.. 1621
Buxton ..	.. 1117	Newquay ..	.. 1610
Margate ..	.. 1471	Jersey ..	.. 1817
Bath ..	.. 1378	London ..	.. 1445
Weston ..	.. 1539	Bexhill ..	.. 1685

SHADE TEMPERATURES.

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

1904.	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. ...	48·2	39·4	43·8	+1·0	8·8	54·1	19th	31·1	1st
Feb. ...	46·7	38·1	42·4	-0·7	8·6	53·9	22nd	31·9	19th
March.	48·0	38·2	43·1	-1·0	9·8	58·6	9th	32·1	12th
April ..	55·8	44·0	49·9	+1·7	11·8	63·3	24th	37·1	17th
May ...	58·2	47·3	52·8	-0·3	10·9	64·0	27th	38·9	9th
June...	63·2	51·6	57·4	-1·3	11·6	70·1	30th	44·0	10th
July ...	67·9	57·2	62·6	+0·9	10·7	78·0	17th	50·0	14th
Aug....	66·6	54·8	60·7	-0·9	11·8	76·5	4th	48·0	21st & 24th
Sept. ...	62·9	52·3	57·6	-0·7	10·6	67·7	3rd	44·1	27th
Oct. ...	58·3	49·1	53·7	+1·8	9·2	64·9	18th	40·8	8th
Nov....	51·8	40·9	46·4	-1·1	10·9	59·8	6th	28·0	25th
Dec. ...	50·8	42·4	46·6	+3·1	8·4	55·8	16th	34·1	11th
Year	56·5	46·3	51·4	+0·3	10·2	78·0	July 17th	28·0	Nov. 25th

REMARKS.

The various temperatures for the four quarters of the year 1904, were as under:—

	Means of				Extremes.	
	Max.	Min.	Mean.	Range.	Max.	Min.
January to March	47·6	38·6	43·1	9·0	58·6	31·1
April to June	59·1	47·6	53·4	11·5	70·1	37·1
July to September	65·8	54·8	60·3	11·0	78·0	44·1
October to December	53·6	44·1	48·9	9·5	64·9	28·0

This table speaks for itself as to the equability of the Torquay climate. Few towns can shew a range of temperature averaging only 10° throughout the year, the range meaning the difference between the shade temperature at the hottest part of the day and the coldest part of the night.

The highest temperatures were recorded in July and August, the highest being 78°0 on July 17th. During these months the following maximum readings were reported to the Meteorological Office (Summary No. 167):—

England, N.E.				South.			
York	...	...	80·0	London	...	...	91·0
Lincoln	...	...	87·5	Maidenhead	...	...	91·0
Fulbeck	...	...	87·9	Southampton	...	...	87·3
Newcastle	...	...	82·0	Eastbourne	...	...	83·0
Scarboro'	...	...	80·0	Brighton	...	...	82·6
				Reading	...	...	86·0
				Margate	...	...	90·0
				Tunbridge Wells...	...	...	87·5
East.				North-West.			
Cambridge	...	...	87·4	Manchester	...	...	83·1
Cromer	...	...	87·6	Liverpool	...	...	81·9
Gildeston	...	...	85·8	Southport	...	...	82·4
Hillington	...	...	88·3				
Shoeburyness	...	...	87·0				
Midlands.				South-West.			
Shrewsbury	...	...	82·0	Bath	...	...	84·0
Nottingham	...	...	84·0	Clifton	...	...	84·2
Rugby	...	...	86·0	Newquay	...	...	81·6
Birmingham	...	...	81·3				
Oxford	...	...	85·0				

This table should deal another blow at the silly fiction that our town is hot in summer. It shews that on the hottest summer days Torquay was cooler than towns so far north as York, Newcastle, Scarboro', and Manchester, much cooler than the Midland towns, and more equable than such south-western stations as Clifton and Bath.

REMARKS ON SHADE TEMPERATURE—(continued).

It will surprise those who have not lived on the East Coast to learn that our extreme temperature is no less than 12° below that of Margate, and 10° below that of Cromer.

It is not so necessary to demonstrate the advantages of our winter climate; they are well known. The mean minimum for the cold months is over 41° , and the mean range only $9^{\circ}3$. The coldest point, $28^{\circ}0$ was touched during the exceptionally cold weather towards the end of November. During this period the following extremes were registered in various parts of the country:—

Torquay ...	...	...	$28^{\circ}0$	Lincoln ...	...	...	$15^{\circ}0$
Tunbridge Wells ...	...	...	$23^{\circ}3$	Rugby ...	...	...	$11^{\circ}0$
Bath ...	...	...	$21^{\circ}0$	Arundel ...	...	...	$9^{\circ}4$
Manchester ...	...	...	$16^{\circ}0$	Cambridge ...	...	...	$8^{\circ}2$

Commenting on the "Winter's Weather at some English Resorts," a writer in the "Lancet," under date April 16th, 1904, points out that "as regards the average temperature of the night, Scilly was superior to both the Italian and Rivierian resorts, while in Torquay and Falmouth the nights were just as warm as those at Nice. At most of the English stations, too," he continues, "the difference between the day and night temperature shewed less range than some of those abroad; Nice, for instance, had a mean diurnal range of 13° , while at Torquay and Jersey it was only 8° ." Again, under date September 17th, 1904, he writes in relation to the summer climate, "When an equable temperature is required, it is the south-west coast that is superior. . . . Apart from Yarmouth, the stations with the least range were Torquay, Scilly, and Aberystwyth."

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Jordan Photographic Twin Instrument.

1904.	Total Bright Sunshine.	Difference from Camp- bell-Stokes' Record.	Greatest Amount in one day.	Date.	Sunless Days.
January	50.1	- 3.1	6.0	16th	12
February	60.6	- 2.1	8.3	18th	10
March	128.7	+ 4.4	10.5	23rd	7
April ..	182.1	+ 1.9	11.9	25th	3
May	176.9	- 6.4	13.2	15th	2
June.....	224.5	- 15.6	14.2	28th	2
July	249.3	+ 8.5	14.2	11th	2
August.....	232.8	- 0.6	12.9	2nd	0
September.....	177.5	+ 0.7	11.2	18th	0
October	86.9	- 3.7	8.3	8th & 22nd	7
November	94.9	- 2.0	7.8	14th	7
December	50.8	- 2.6	5.9	8th	12
Year.....	1715.1	- 20.6	14.2	June 28th July 11th	64

RAINFALL

In inches and hundredths.

1904.		Total Amount.	Difference from Average.	Wet Days.	Mean Wet Day Rainfall.	Greatest fall in 24 hours.	Date
January ...	*C. G.	5.56	+ 2.31	21	0.26	0.92	29th
"	†P. P.	5.52					
February ...	C. G.	5.93	+ 3.24	22	0.27	0.89	12th
"	P. P.	5.53					
March	C. G.	2.03	- 0.56	15	0.14	0.52	7th
"	P. P.	2.08					
April	C. G.	1.09	- 1.28	12	0.09	0.37	13th
"	P. P.	1.08					
May	C. G.	2.37	+ 0.37	18	0.12	0.38	30th
"	P. P.	2.37					
June	C. G.	1.11	- 1.09	8	0.14	0.40	14th
"	P. P.	1.08					
July	C. G.	4.62	+ 2.22	16	0.29	0.84	26th
"	P. P.	4.61					
August	C. G.	2.87	+ 0.20	14	0.20	0.76	16th
"	P. P.	2.90					
September	C. G.	1.81	- 0.61	11	0.16	0.82	11th
"	P. P.	1.80					
October ...	C. G.	2.05	- 1.99	11	0.19	0.81	2nd
"	P. P.	2.06					
November	C. G.	1.55	- 2.18	10	0.15	0.48	7th
"	P. P.	1.53					
December	C. G.	2.74	- 1.16	13	0.21	1.67	8th
"	P. P.	2.56					
Year	C. G.	33.73	- 0.53	171	0.20	0.92	Jan. 29th
"	P. P.	33.12					

* Cary Green.

† Princess Pier.

REMARKS.

The total rainfall was 33"·73 at Cary Green, and 33"·12 at Princess Pier. The year opened with two very wet months, the fall for January and February being in both cases about equal to the average for the two months combined. There was a heavy total in July, but in other months the rainfall was generally below the average, and the year closed with a deficiency of half an inch. The heaviest fall was 0"·92 on January 29th. There were 171 wet days, but it must be remembered that in meteorological language a "wet day" is one on which the rainfall exceeds $\frac{1}{200}$ th of an inch only, so that many days which the public would reckon as fine are classified here as wet.

As regards the volume of rainfall, the Torquay total is four inches above the average for England, but it must be borne in mind that the difference is rather in heaviness of fall than in duration; thus, our mean fall per wet day is no less than a fifth of an inch. To take the two first illustrations that come to hand; in 1903 we had a total rainfall of 41 inches, which fell on 198 days; Southport, with 2 inches less, had 216 wet days; and Margate, with 14 inches less, yet had rain on 180 days.

So that a recent writer in the "Telegraph" is well within the facts when he says "The darkest shades assigned to Devon and Cornwall in the chart of rain look inconsistent with the lightest shade given to these regions in the map of sunshine, until we remember that a heavy rainfall is not incompatible with much sun; it only means that when it rains it rains hard, and has done with it smartly."

BAROMETRIC PRESSURE

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1904.	<i>Mean</i> of Month.	Difference from <i>Mean</i> of Month.	Highest Reading.	Lowest Reading.	Extreme Range of Pressure.
January	29.967	- 0.080	30.724	29.193	1.531
February	29.607	- 0.458	30.284	28.856	1.428
March	29.982	+ 0.028	30.397	29.436	0.961
April	29.997	+ 0.118	30.272	29.389	0.883
May	29.963	- 0.008	30.217	29.540	0.677
June.....	30.064	+ 0.054	30.421	29.675	0.746
July	30.024	+ 0.033	30.248	29.599	0.649
August.....	30.036	+ 0.069	30.220	29.700	0.520
September	30.077	+ 0.066	30.212	29.611	0.601
October	30.112	+ 0.162	30.449	29.701	0.748
November	30.116	+ 0.167	30.515	29.579	0.936
December	29.930	- 0.043	30.567	28.899	1.668
Year	29.990	+ 0.013	30.724 Jan. 22nd	28.856 Feb. 9th	1.868

REMARKS.

The mean barometric pressure for the year was 29·990 inches of mercury, being 0·013 above the average of 20 years, and 0·055 above the mean of 1903.

Speaking generally, a barometer below the average for the month means an increased rainfall for the month, and *vice versa*. This rule held good in the months of January, February, March, April, May, June, September, October and November. In July and August the reading was well above the average, and the rainfall also in excess, in July markedly so. In December there was a decreased rainfall with a low barometer.

The highest reading was 30·724, on January 22nd, and the lowest 28·856, on February 9th, shewing a fall of nearly two inches in 18 days. The record readings are respectively 30·911 and 28·426.

HUMIDITY, CLOUD, OZONE, AND WIND.

1904.	HUMIDITY.			CLOUD <i>Cloud 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 Daily</i> Amount.	Greatest Daily Amount	Least Daily Amount.	
	°	°	%		%	%	%	
January	43·9	42·2	86	7·0	46	80	10	N., S. & W.
February	42·0	39·7	82	7·5	59	90	10	W.
March ...	43·2	40·4	79	6·5	45	80	10	E. & W.
April ...	50·9	46·7	72	6·0	58	90	20	N.W., W. & S.W.
May	54·0	50·3	76	6·0	57	80	15	W., S.W. & S.E.
June.....	58·5	53·9	72	5·0	51	85	20	E. & S.E.
July	63·7	59·5	76	5·5	38	60	20	E., S.E., & W.
August...	62·5	57·9	73	5·5	45	70	20	W.
Sept. ...	59·5	55·2	74	5·5	45	70	10	S.E.
October	54·1	51·3	81	7·5	44	90	20	W.
Nov. ...	45·2	43·1	84	4·0	35	75	10	N.W.
Dec.	46·3	44·5	87	7·0	48	80	10	W.
Year...	52·0	48·7	78	6·1	48	90	10	W., E., N.W., S.W. & S.E.

REMARKS.

The mean daily amount of Cloud, estimated from eye observation, where clear sky = 0, and entirely overcast = 10, was 6.

The ozone test papers and scale used are Moffat's, and the principle on which the instrument works is the liberation of iodine by the action of ozone upon iodide of potassium contained in the paper, and the action of this free iodine upon starch, in solution of which the paper has also been soaked. This is only a rough test, but it is the same for all stations, and is approximately correct.

The mean daily amount of Ozone was 48% of the possible, with a maximum of 90% and a minimum of 10% of the possible.

During the colder months, from October to December, and January to March, the direction of the wind was generally westerly. From October 1st to December 31st the wind was due east at 9 a.m. on 13 mornings only.

The mean Humidity of the air, as taken by Mason's Hygrometer, was 78. As this figure is frequently misunderstood, it may be well to state that it is a percentage figure, and indicates the proportion of possible moisture, 100 standing for complete saturation. "Watery vapour is always to be found in the atmosphere; its presence is constant, but its proportion variable. It may perhaps be said that the air of England contains on an average something like 1½ per cent. of aqueous vapour" (*Huxley's Physiography*). It is a percentage of this percentage that is indicated by this figure.

The following table, compiled from Mr. Baxendell's Report (1903) to the Southport Corporation, shows that the air of Torquay is distinctly dry, and not humid, as is generally supposed:—

MEAN HUMIDITY TABLE.

			%				%
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.				Number of Days at 32° and below.
1904.	Max. Mean	Highest.	Date.	Max. Solar Radiation.	Minimum mean.	Lowest.	Date.	
Jan.	66·5	89·7	18th	18·3	34·0	26·0	23rd	
Feb.	76·7	96·7	22nd	30·0	32·3	23·0	19th	
March....	81·5	99·8	9th	33·5	32·4	22·7	12th	
April	96·8	114·1	8th	41·0	38·1	28·3	11th	
May	94·4	100·9	27th	36·2	43·7	34·0	9th	
June.....	101·5	112·0	26th	38·3	47·5	41·0	10th	
July	106·2	115·8	13th	38·3	54·8	45·6	2nd	
Aug.	108·8	121·8	27th	42·2	50·8	42·8	24th	
Sept.	108·1	121·0	7th	45·2	48·6	39·7	26th	
Oct.	86·1	109·9	1st	27·8	44·5	35·5	8th	
Nov.....	78·4	98·7	5th	26·6	35·8	22·6	25th	
Dec.	65·9	90·4	15th	15·1	36·9	26·2	11th	
Year	89·3	121·8	Aug. 27th	32·7	41·6	22·6	Nov. 25th	