[Report 1920] / Medical Officer of Health, Torquay Borough.

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BOROUGH OF TORQUAY.

ANNUAL REPORT

OF THE

Medical Officer of Health

FOR THE YEAR 1920,

BY

THOMAS DUNLOP, M.B., C.M., D.P.H.

TOGETHER WITH SUMMARY OF

Reports of the Sanitary Inspectors

AND

Meteorological Observer.

BOROUGH OF TORQUAY, 1920.

Area of the Borough, 3,996 acres.

Rateable value, £201,050.

Population—Census (1901), 33,625 ;

„ „ (1911), 38,772.

*Registrar-General's estimate (1919), 34,703.

Number of separate occupiers—Census, 1911, 8,459.

Density of population, 8 persons per acre.

Corrected death rate, 1920, 14·7 per 1,000. Average for previous five years, 17·5 per 1,000.

Birth rate, 18·6 per 1,000. Average for previous five years, 13·0 per 1,000.

Infantile mortality, 1919, 53. Average for previous five years, 73.

Death rate from zymotic diseases, ·31 per 1,000.

Mean annual temperature, 52·4.

Hours of bright sunshine recorded, 1,595.

Total rainfall, 33·59 inches.

**Vide* paragraph on population.

THE BOROUGH OF TORQUAY.

Population.

It is extremely difficult to arrive at a correct estimate of the population at this remote period after the Census, more especially when we consider the movements of inhabitants both during and since the war. It is well known that there are very few unoccupied houses in the area, and probably 50% of the working class houses have more than one family in occupation. The 1911 Census gave a population of 38,772, this included 2,149 sailors on ships in the harbour and bay, giving a civilian population of 36,623. Calculating the population for 1920 on these figures, I find it would be 39,853. During the past five or six years, the Registrar General has supplied a population figure which in the first instance was based on the rationing returns of the Ministry of Food. The figures supplied for 1920 are 34,703 for calculation of death rates, and 35,156 for birth rate and these figures are used in the calculation of the various rates. It is to be hoped that the 1921 Census figures will be available in dealing with next year's report.

The Borough of Torquay is formed by the civil parishes of St. Mary-Church and Tormoham. The area of the Borough is 3,906 acres. It is divided into nine wards, the populations of which at the 1911 census were :—

Torre	population	4,199
Waldon	,,	3,495
Upton	,,	4,898
Ellacombe	,,	6,557
Strand	,,	3,326
Torwood	,,	6,107
St. Mary-Church	,,	3,628
Babbacombe	,,	3,754
Chelston	,,	2,807

Public Institutions and their Population.

In the Upton Ward are the Torbay Hospital (population 77), the Inebriates' Retreat (population 21).

In the Strand Ward, the Western Hospital for Consumptives (population 45). This building will in future be known as Whitecliff. Rosehill Children's Hospital (population 37).

In Ellacombe Ward, Mildmay Consumptive Home (population 8). The use of this building will probably be discontinued in 1921, the inmates being transferred to Whitecliff.

In Torwood Ward, St. Raphael's (population 46), St. Luke's (population 27), St. Barnabas' Home for Incurables (population 42), Erith House, Home for Ladies (population 27), St. Faith's Home for Girls (population 16).

In Torre Ward, St. Vincent's Orphanage for Boys (population 147).

In Waldon Ward, Ockendon Convalescent Home (population 29).

In Babbacombe Ward, Erskine Home for Orphan Girls (population 30).

The Borough Isolation Hospital 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.

The Town is situated on a promontory, being practically surrounded by the sea on three sides. This promontory is formed by hilly ridges, running N.E. and S.W. The principal heights—the Warberry Hill, 448 feet, and the Lincombe Hill, 372 feet—are composed of the Lower Devonian grits and slates. The lesser heights, such as the Braddons, Waldon Hill, 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 sand stone of a deep red colour.

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.

It is on the sides of these hills or ridges that most of the houses are built, the main roads and streets following the lines of the valleys. Thus the largest portion of the district is afforded protection from the cold winds of the North and East, a fact that is strikingly proved by the luxuriant growth of semi-tropical shrubs and plants in both public and private gardens.

Torquay is essentially a residential town and health resort, consequently a large proportion of its inhabitants are villa residents, while the remaining portion may be said to obtain a livelihood by catering for them. There are numerous large hotels, and many up-to-date boarding houses for the accomodation of visitors. There are no manufactories in the district.

During the summer and early autumn there is a very large influx of visitors, who are catered for by the inhabitants of the smaller houses.

CLIMATE.

The position of the Town, built as it is on a promontory, surrounded on two sides by the sea, accounts to some extent, for the mild and equable temperature experienced during winter. The meteorological records show that we enjoy a large proportion of sunshine at this period of the year. There is also an almost complete absence of fog.

The benefit of living under such climatic conditions must be apparent to all, but it is inestimable to those who are asthmatical, or who are sufferers from chronic bronchitis. To the aged and infirm, who are extremely sensitive to every change of temperate, life under such conditions is prolonged and made worth living.

The bright sunshine and the possibility of being constantly in the open air, is most advantageous to children and those who are delicate have every chance of growing up strong and healthy.

The Summer Climate. Year by year the town becomes more popular as a holiday resort. It is unquestionable that, during the hottest days, the maximum temperature here is five to ten degrees lower than that recorded in London and the Midlands. It stands to reason, if one considers the position of Torquay, flanked by the sea and with Dartmoor in the rear, it is constantly fanned by cool breezes, from one or other directions. It seems difficult to imagine a more delightful spot to spend a holiday in. Boating, bathing and fishing of the best, whilst in the neighbourhood are innumerable places of beauty and interest, which are easily accessible by sea, coach or rail. These facts are amply proved by the constantly increasing number of visitors who, year after year, spend their summer holidays here.

METEOROLOGY.

Full details of the Meteorology of the Borough will be seen in the appended Annual Report of the Borough Meteorologist, but the following resumè of the climatic conditions may be of interest :—

	1915	1916	1917	1918	1919	1920
Highest Maximum Temperature ..	73·4	79·7	77·3	78·1	80·4	73·9
Lowest Maximum ,, ..	27·1	27·0	24·9	24·6	25·9	25·3
Mean Maximum ,, ..	56·9	56·8	55·5	57·8	56·7	57·4
Mean Minimum ,, ..	45·7	46·2	44·9	47·1	45·3	47·4
Mean of Maximum and Minimum ..	51·3	57·5	50·2	52·5	51·0	52·4
Difference from Average ..	—	+0·3	+1·1	+1·2	-2·6	+1·1
Number of days on which rain fell ..	188	194	173	212	178	189
Total fall in inches ..	41·43	41·53	25·5	29·9	30·08	33·59
Number of hours of bright sunshine ..	1704	1742	1716	1856	1860·3	1595

MEDICAL BATHS.

Recognising that the climate of Torquay is eminently suitable for invalids, the Corporation have constructed an up-to-date series of Medical Baths There are seven bath rooms available on the female side and six on the male, each with its complement of comfortably fitted dressing rooms. Between these two blocks there is a handsome lounge or waiting room.

The following varieties of baths are available :—

Aix and Vichy Douches, Deep Baths, Reclining Baths available for use of Sulphur, Pine and Soda, etc., Nauheim and Vapour Baths, Radiant Light and Heat Baths, Needle and other Douches. All douches can be administered with either sea water or fresh water at a requisite temperature.

There is also an excellent Swimming Bath, 90ft. x 30ft. filled with filtered sea water and kept at a suitable temperature.

VITAL STATISTICS.

DEATH RATES.—The total deaths registered in the Borough during 1920 was 506, from this must be excluded 59 deaths of non-residents transferable to other districts, and included 64 deaths of Torquay residents which occurred outside.

The nett total was therefore 510, of whom 228 were males and 282 females.

The total for 1919 was 504.

The death-rate calculated on the Registrar General's estimated population of 34,703 is equal to 14·7 per 1000 per annum. If however it is calculated on my estimate of 39,853 it would only be 12·8.

The death-rate for England and Wales in 1920 was equal to 12·4 per 1000 per annum and that for the small towns (Census Population 20,000 to 50,000) 11·3.

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

Year.	Number of Deaths.	Death-rate corrected.	Death-rate of England and Wales.
1910	504	13·1	13·4
1911	548	14·1	14·6
1912	479	12·2	13·3
1913	521	13·2	13·4
1914	492	12·5	13·6
1915	576	17·7	15·1
1916	542	17·2	14·0
1917	562	18·3	14·4
1918	622	20·2	17·6
1919	504	15·1	13·8
1920	510	14·7	12·4

Birth-rate, Death-rate, and Analysis of Mortality during the Year 1920.

(Provisional populations estimated to the middle of 1920 have been used for the purpose of this Table. The mortality rates refer to the whole population as regards England and Wales, but only to civilians as regards London and the groups of towns.

—	Birth-rate per 1,000 Total Population.	Annual Death-rate per 1,000 Population.									Rate per 1,000 Births.		Percentage of Total Deaths.			
		All Causes.	Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Influenza.	Violence.	Diarrhœa and Enteritis (under 2 years).	Total Deaths under One Year.	Deaths in Public Institutions.	Certified Causes of Death.	Inquest Cases.	Uncertified Causes of Death.
England and Wales	25·4	12·4	0·01	0·00	0·19	0·04	0·11	0·15	0·28	0·48	8·3	80	24·3	92·2	6·6	1·2
96 Great Towns, including London (Census Populations exceeding 50,000)	26·2	12·5	0·01	0·00	0·22	0·04	0·14	0·16	0·31	0·43	10·4	85	31·3	92·2	7·1	0·7
148 smaller Towns (Census Populations 20,000—50,000) ..	24·9	11·3	0·02	0·00	0·19	0·03	0·10	0·14	0·27	0·38	7·8	80	16·5	93·2	5·3	1·5
London	26·5	12·4	0·01	0·00	0·22	0·05	0·17	0·22	0·30	0·47	9·5	75	46·8	91·2	8·6	0·2
Torquay (Borough)	18·6	14·7	0·02	0·00	0·05	0·00	0·00	0·11	0·23	0·37	6·0	53	9·4	93·8	5·3	0·9

In order to render it possible to compare the death-rate here with that of the country as a whole, it has to be corrected for age and sex distribution. In 1914 the Registrar General supplied a factor ·8730, by which the Torquay rate had to be multiplied. This has the effect of reducing the rate by 2 per 1,000 and gives us a rate corrected for age and sex distribution equal to 12·8 per 1,000 against that of England and Wales of 12·4 per 1,000.

Of the 510 deaths:—

			Percentage of Total Deaths.
34	were under 1 year of age - - -	equals	6·6
4	were 1 year and under 2 years - -	,,	·8
7	were 2 years and under 5 years - -	,,	1·3
10	were 5 years and under 15 years - -	,,	2·0
21	were 15 years and under 25 years - -	,,	4·2
57	were 25 years and under 45 years - -	,,	11·2
105	were 45 years and under 65 years - -	,,	20·6
272	were 65 years and over - - -	,,	53·3
510	at all ages.		100·0

It will thus be seen that 272 or 53·3 per cent. were persons aged 65 and upwards.

There were 27 inquests: and 5 uncertified deaths were recorded.

Ward Distribution of Deaths.

Ward.	Deaths at all ages.	Under 1 year.
Torre	75	—
Waldon	51	2
Upton	73	9
Ellacombe ..	81	8
Strand	31	3
Torwood	44	1
St. Mary-Church ..	54	5
Babbacombe ..	56	5
Chelston	45	1
Totals ..	510	34

Death from Zymotic Diseases.

The zymotic death-rate is calculated from the seven principal zymotic diseases. The following table enumerates them and the number of deaths recorded from each :—

Small-pox		0
Measles		2
Whooping Cough		0
Scarlet Fever		0
Diphtheria		4
Fevers	Typhus	0
	Enteric	1
	Continued	0
Diarrhœa		4
		11

The zymotic death-rate is therefore equal to ·31 per 1,000 against ·08 per 1,000 in 1919.

Birth Rate.

The total births registered in the Borough was 643—males 342—females 301, of these 40 or 6·2% were illegitimate, against 69 or 13·3% in 1919. To the above total have to be added 14 births, which occurred in outside areas, but whose parents are residents of the Borough.

	Males	Females	Illegitimate
First Quarter	103	98	20
Second Quarter	100	74	12
Third Quarter	87	73	13
Fourth Quarter	58	64	11
Totals	348	309	56

Ward Distribution.

	Males.	Females.	Illegitimate.
Torre	34	31	8
Waldon	28	23	7
Upton	59	54	10
Ellacombe ..	86	81	14
Strand	25	20	6
Torwood	12	14	1
St. Mary-Church ..	35	35	3
Babbacombe ..	50	37	5
Chelston	19	13	2
Totals	348	309	56

The birth-rate for the Borough is equal 18·6 per 1,000 per annum, against 15·2 in 1919. The rate for England and Wales during 1920 was 25·4 per 1,000 and that for the 148 smaller towns (census population 20,000 to 50,000) 24·9.

The following table gives the total births and birth-rate for the past ten years compared with those for England and Wales.

Years.	Number of Births.	Torquay Birth Rate, per 1,000 living.	England & Wales Birth Rate, per 1,000 living.
1911	536	13·8	24·4
1912	569	14·5	23·8
1913	535	13·6	23·9
1914	542	13·7	23·6
1915	490	12·4	21·9
1916	459	13·3	21·6
1917	401	11·7	17·8
1918	412	12·0	17·7
1919	531	15·2	18·5
1920	657	18·6	25·4

It will be seen that like the country generally we have had an increase in the birth-rate during the past year. This is much the highest rate recorded since amalgamation.

In comparing the birth-rate of such a town as Torquay with other districts, it is necessary to consider the constitution of the population.

Here we have a large excess of females over males, a large proportion of the females are spinsters, and some 40% are either above or below the child-bearing age. In the face of such facts, it is unreasonable to expect anything but a low birth-rate.

The notification of Births Act was adopted in 1915. This Act requires that the Medical Officer of Health shall be informed of every birth within 36 hours of its occurrence, this includes still-births occurring after the expiration of twenty eight weeks of pregnancy.

Infant Mortality.

The number of deaths of infants under one year of age was 34. As there were 643 births recorded, the infantile mortality is equal to 53 per 1000 births. The rate for England and Wales during 1920 was 80 per 1,000 births and that for the 148 smaller towns (population from 20,000 to 50,000) was 80. The following

table is of interest as showing the births, infantile deaths and infantile mortality for a series of six years compared with those of the country as a whole :—

Year	Total Births recorded.	Deaths of Infants under 1 year.	Infantile Mortality for the Borough.	Infantile Mortality for England and Wales.
1915 ..	490	41	84	110
1916 ..	459	43	94	90
1917 ..	401	26	65	97
1918 ..	412	31	75	97
1919 ..	531	25	47	89
1920 ..	643	34	51	80

The Infantile Mortality rate both for the Borough and the whole country shows an almost continued decrease since 1915. In that year the Notification of Births was made compulsory, Health Visitors were appointed and Infant Welfare Centres started. This seems eloquent proof of the advantages arising from the introduction of such measures.

In dealing with comparatively small figures, such as are recorded here, it is desirable to examine all factors bearing on the subject. The most important is of course, the number of deaths occurring from various causes.

The following table shows the principal causes of deaths among infants during the past six years :—

Causes	1920	1919	1918	1917	1916	1915
Measles	—	—	3	—	1	3
Whooping Cough	—	—	1	—	2	1
Diarrhœa	4	1	2	2	2	3
Tubercular Diseases	—	—	—	2	—	1
Bronchitis	2	5	7	2	2	8
Pneumonia	2	1	3	4	5	6
Premature Birth / Congenital Defects	16	10	6	8	18	10
Accidents	1	—	—	—	—	—
All other causes	9	8	9	8	13	9
Totals	34	25	31	26	43	41

Fuller particulars, giving exact details as to cause of death and the age stated in weeks and months under one year, are given in Table IV., page 58.

It will be noticed that 16 deaths out of a total of 34 (over 50%) were due to premature birth or congenital defects. This is a very large proportion and it is not an isolated occurrence, but one that presents itself with unfailing regularity year after year. How to effect a reduction is a problem of considerable difficulty, and one that Health Authorities are heavily handicapped in dealing with. In this connection I have to record the

registration of 24 Still Births, which are not contained in the above figures, but as they are produced by the same causes must be considered in any scheme relating to their prevention. That Venereal Diseases are prominent factors in their causation is now well established and it is by treatment of these diseases that a reduction is to be hoped for. In most populous areas centres for the free treatment of venereal diseases on modern principles are well established.

SANITARY CIRCUMSTANCES OF THE DISTRICT.

The water supply of the Borough is derived from an upland surface gathering ground about fifteen miles from Torquay, on the borders of Dartmoor. The area of the gathering ground is about 2,241 acres, of which the Corporation are the owners, all farms and inhabited buildings have been cleared from the gathering ground, thus preventing any menace to the purity of the supply.

As a further precaution against impurities the water is submitted to mechanical filtration. Thus all suspended matter is removed, it is clarified and its appearance considerably improved. This system continues to act most satisfactorily.

The supply is ample at all seasons of the year. The total supplied was 744,611,000 gallons or 34·95 gallons per head for a population of 58,369. This population includes Newton Abbot and a few small villages on the line of the mains.

Regular measurements of the rainfall on the watershed are taken at six centres. The following is a statement of the amount :—

Kennick ..	..	..	..	43·23 inches
Mardon ..	..	..	..	40·80 „
Blackingstone	..	..	..	40·79 „
Bullaton	..	..	..	39·83 „
Smithacott	..	..	..	47.30 „
Laployd	..	..	..	51·59 „

The average rainfall over the whole Catchment Area is 43.92 inches.

Quality of the Water.

It possesses all the qualities of a good upland surface water. The watershed has been so protected as to make the possibility of pollution infinitesimal. It is also subjected to mechanical filtration, rendering it doubly safe and removing any suspended praty matter. It is extremely soft, yet contains sufficient lime and magnesia salts to prevent any solvent action on lead. It is in all respects one of the best domestic supplies in the Kingdom.

Regular monthly analysis of the water are made, samples being taken from different areas in the Borough. The results vary very slightly; the following is a typical result.

Results of Chemical Analysis.

Physical Characters—Very pale straw colour, clear, no odour or deposit.

Chemical Constituents.	Expressed in parts per 100,000.
Total Solids	7·3
Chlorides	1·7
Hardness	1·5
Nitrites	nil
Nitrates	·069
Free Ammonia	minute trace
Organic Ammonia	·009
Oxygen absorbed in 4 hours	·024
Poisonous Metals	nil

Streams.

There are only two small streams running through the district and they are free from sewage pollution.

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 Strand, Torbay Road, Vaughan Parade, Victoria Parade, Beacon Hill, George Street and Swan Street, being pumped into the main sewer. The main sewer is seven feet in diameter, and runs from Fleet Street to Hope's Nose, a distance of about 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.

In connection with the preparation of the new estate at Westhill, purchased by the Council for Housing purposes. 1,755 yards of 9in. sewers and 345 yards of 12in. sewers have been laid during the year.

Closet Accommodation.

With a very few exceptions the whole of the houses in Torquay have water closets with water waste preventor cisterns. The closets are in almost all cases drained to the sewers, the exceptions being where the houses are at such levels as to necessitate the provision of cesspools. In one or two out-lying situations where there are no sewers a few cottages have earth closets.

Collection and Disposal of House Refuse.

The Council possess Bye-laws dealing with the storage of house refuse in sanitary galvanised iron ash bins.

These Bye-laws are applicable to both old and new buildings. No attempt has been made to enforce a wholesale substitution of these receptacles, but as occasion arises the owners are called upon to provide them, such as after inspections made under the Housing and Town Planning Act, and where nuisances are detected.

There can be no doubt that from a health and æsthetic point of view stricter enforcement of this provision is desirable. It is very unsightly to see all manner of uncovered boxes, cans, etc., filled with house refuse, put out on the roadside to await emptying by the scavengers. Such conditions do not enhance the reputation of the town.

House refuse is moved by the employees 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, 11,462 tons being dealt with annually. The destructor is a "Warner Perfectus," of six 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.

During the war a system of salvage has been inaugurated, paper, bottles, tins, etc., being separated and disposed of. As the value of these has recently fallen considerably, it is questionable whether it is worth continuing.

SANITARY INSPECTIONS OF THE DISTRICTS.

Summary of Sanitary Inspectors' Work.

Houses inspected	423
Houses visited	691
Dirty premises limewashed and cleaned	146
Rooms disinfected	140
Cases of overcrowding abated	2
Defective floors repaired	45
Water supply laid direct from main to tap over sink	16
Defective yards re-paved	27
Lighted and ventilated rooms	28
R. W. P.'s and gutters repaired	72
Nuisances from keeping fowls and animals	32
Ashbin provided for house refuse	41
Roofs repaired	45
Smoke tests applied	345
Water ,, ,,	113
New sets of house drains laid	67
Defective house drains repaired	48
Intercepting traps with fresh-air inlets fixed	53
Old "Mason's" and other old type of traps abolished	29
Inspection chamber to drains built	103
Drains ventilated at head of system	55
New sanitary conveniences with water supply fixed	75
Soil pipes fixed outside buildings and ventilated	32
Iron and brick traps removed and earthenware gullies fixed	113
Waste pipes from baths, lavatories, and sinks trapped	56
Choked drains cleared	71
Defective w.c. cisterns repaired or new provided	40
W.C.'s repaired and cleansed	32
Glazed sinks fixed	30
Handrails fixed	11

Miscellaneous.

Offensive accumulations removed	88
Nuisances from stables and manure pits abated	36
Miscellaneous repairs	75
Re-visits in connection with above work	1145
Legal notices	42
Preliminary notices served	210
Letters and communications in connection with the work of the department	683
Verbal notices	96
Written complaints	189
Verbal complaints	219
Slaughter-houses visited	833
Butchers' shops ,,	1366
Butchers' carts ,,	117
Fish Quay ,,	87
Railway siding ,,	35
Market ,,	58
Other shops ,,	429
Dairies & cowsheds ,,	104
Number of vessels inspected	44
Houses closed as unfit for human habitation	1
Workshops visited	224
Workshop notices	42
Houses repaired	69

Sanitary certificates granted - - - -	25
Visits to piggeries - - - - -	35
,, stables - - - - -	75
,, dairies and cowsheds - - - -	104
Disinfectants supplied - - - - -	1300
Public Elementary Schools—visits - - -	184

Common Lodging Houses.

There are now only two common lodging houses in the district. One which was always a source of trouble has now been closed. One of the two remaining changed hands during the year and soon showed evidence of neglect. A warning letter was sent from the Sanitary Committee with excellent results. Both premises are regularly inspected.

Marine Stores.

There are about a dozen of these businesses (large and small), carried on in the Borough. Most of them collect rags, bones and rabbit skins, the latter two materials are a source of nuisance to surrounding occupiers, and necessitate frequent visits from the Inspectors to prevent complaint.

Schools.

Matters pertaining to these are dealt with in the Report to the Education Authority. The Sanitary Inspectors make monthly inspections of the conveniences attached to the schools, any defects found are reported to the Sanitary Committee.

There is also a large Secondary School with a Preparatory Department attended by close on 500 scholars. This is under the control of the Devon County Council, but as regards inspection, these duties have been delegated to the Local Education Authority. The School Annual Report deals with this also.

FOOD.

Milk Supply.

There are 77 registered dairymen and cowkeepers in the Borough. These dairies and cowsheds are inspected twice a year. Most of them receive milk from farms situated outside the Borough. Early in the year a circular letter was received from the Devon County Council requesting Sanitary Authorities to enforce all bye-laws and regulations respecting cowsheds, dairies and milkshops. This was considered by the Sanitary

Committee and instructions were given to their officials to report any breaches of these bye-laws. In furtherance of this I sent a letter to all the dairymen in the Borough informing them of the above instructions, and drawing their attention to certain of the more important bye-laws, viz.: those dealing with ventilation, cleanliness and limewashing of cowsheds, etc., the cleansing of the udders and teats of the cows and washing of the milkers' hands.

We also inspect the outside farms, obtaining particulars of the conditions of the cowsheds as to cleanliness, lighting, ventilation and paving, the washing of milk vessels; cleanliness of dairies, etc.; the water supply and its freedom from pollution; the number and condition of the cows in milk.

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. The 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 at the time of inspection. We also know the source of each dairymen's milk supply, which is of great value in tracing possible sources of infection. From my knowledge of the farms, etc., I am in a position to advise residents who enquire, concerning a milk supply, and it is surprising the number of such that are made. So that it is to the benefit of individual dairymen to be satisfied as to the condition of the farms from which he derives his milk.

Milk and Cream Regulations, 1912-1917. These regulations are enforced by the County Police.

Milk (Mothers and Childrens) Order, 1918. *Vide* remarks under Infant Welfare on page 40.

Slaughter-Houses.

The total number of these is six. One is registered and the other five licensed.

The following tabulated statement gives the numbers on the dates mentioned.

	In 1914	In Jan., 1920	In Dec., 1920
Registered ..	2	1	1
Licensed ..	6	5	5
Totals ..	8	6	6

These are visited almost daily and on the whole are kept in a satisfactory condition.

During the year the Market Company's Slaughter-house in Parkfield Road, generally known as the Public Slaughter-house, was purchased by the leaseholder. The accommodation as regards overhead gear and other appliances is very primitive and inadequate, and there is no separate cooling chamber. On the whole the place has been kept in a satisfactory condition. Frequent inspections are made of the meat in butcher's shops 41 in number. Also to the Market Hall, Fish Quay and Railway Siding. The contents of butcher's vans from which meat is hawked through the town are also examined.

Humane Slaughtering of Animals. Interest in this question has been stimulated by the various Societies interested in Humane Slaughtering, and bye-laws on the subject are being considered by the Sanitary Committee which will probably be adopted early in the coming year.

The question of the provision of an up-to-date abattoir, owing to money stringency and the high cost of building, has been deferred.

The following tables shows the amount of food inspected and the amounts seized :—

TABLE A.

Diseased or Unsound Food Destroyed.

Organs, etc. Destroyed.	Diseases.												
	Tuberculosis.	Flukes.	Cirrhosis.	Abscess.	Cysts	Strongyli.	Inflammation.	Pleurisy.	Injury.	Actinomycosis	Unsound.	Others.	Totals.
Beasts : Lungs ..	1	—	—	1	—	—	—	—	—	—	—	—	2
Livers ..	—	42	27	1	—	—	—	—	—	—	3	—	73
Tongues ..	—	—	—	—	—	—	—	—	—	—	—	—	—
Heads	1	—	—	—	—	—	—	—	—	—	—	—	1
Carcases ..	—	—	—	—	—	—	—	—	—	—	—	—	—
Cows : Lungs ..	5	—	—	9	9	2	1	—	—	—	—	—	26
Livers	4	108	60	8	—	—	—	—	—	—	—	25	205
Tongues ..	—	—	—	—	—	—	—	—	—	—	—	1	1
Heads ..	—	—	—	—	—	—	—	—	—	1	—	3	4
Carcases ..	—	—	—	—	—	—	—	—	—	—	—	1	1
Heifers : Lungs ..	1	—	—	—	—	—	—	—	—	—	—	—	1
Livers ..	—	8	2	—	—	—	—	—	—	—	—	—	10
Tongues ..	—	—	—	—	—	—	—	—	—	1	—	—	1
Heads ..	—	—	—	—	—	—	—	—	—	1	—	—	1
Carcases ..	—	—	—	—	—	—	—	—	—	—	—	—	—
Sheep : Lungs ..	—	—	—	9	1	180	—	1	—	—	2	—	193
Livers	—	80	—	104	—	—	—	1	—	—	4	—	189
Heads ..	—	—	—	—	—	—	—	—	—	—	2	—	2
Carcases ..	—	—	—	—	—	—	—	1	—	—	—	—	1
Pigs : Lungs ..	6	—	—	—	1	6	21	1	—	—	—	—	35
Livers ..	5	—	8	1	6	2	7	1	—	—	—	—	30
Heads ..	20	—	—	1	—	—	—	1	—	—	1	—	23
Carcases ..	1	—	—	—	—	—	—	—	—	—	—	1	2
Other Organs :													
Mesenteries ..	14	—	—	1	—	—	—	—	—	—	—	—	15
Spleens ..	2	—	—	—	—	—	—	—	—	—	—	—	2
Stomachs ..	2	—	—	—	—	—	—	—	—	—	—	—	2
Miscellaneous	4	—	—	6	—	1	5	1	7	1	232	49	306
Calves	—	—	—	—	—	—	—	—	—	—	—	4	4
Lambs & Sheep (Frozen)	—	—	—	—	—	—	—	—	—	—	31	—	31
Bacon	—	—	—	—	—	—	—	—	—	—	2	—	2
Fish	—	—	—	—	—	—	—	—	—	—	5	—	5
Geese	—	—	—	—	—	—	—	—	—	—	3	—	3
Chickens	3	—	—	—	—	—	—	—	—	—	—	3	6
Eggs, case of	—	—	—	—	—	—	—	—	—	—	1	—	1
Fruit, case of	—	—	—	—	—	—	—	—	—	—	1	—	1
Oatmeal, packets ..	—	—	—	—	—	—	—	—	—	—	—	35	35
Flour, 1 ton	—	—	—	—	—	—	—	—	—	—	—	1	1
Tinned Foods	—	—	—	—	—	—	—	—	—	—	124	—	124
Frozen carcase, parts, &c.	—	—	—	—	—	—	—	—	—	—	107	—	107
Totals ..	69	238	97	141	17	191	34	7	7	4	518	123	1446

TABLE B.

Carcases Examined.

1919.		1920.
773	Bullocks	442
504	Cows	730
381	Heifers	257
4725	Sheep	3415
794	Pigs	1125
401	Calves	531
9497	These do not include frozen carcases.	6500

TABLE C.

Carcases Destroyed.

1 Cow	John's Disease	1 Pig ..	Emaciated
1 Pig	Tuberculosis	31 Sheep & Lambs (Frozen)	Mildewed, Dirty, and Unsound
1 Sheep.. ..	Septic Pleurisy	4 Calves ..	Immature

TABLE D.

Number of Carcases Examined in the Different Slaughter-Houses in the Borough.

No.	Bullocks.	Cows.	Heifers.	Sheep.	Pigs.	Calves.	Total.
1	1	—	—	9	27	—	37
2	9	14	—	35	8	—	66
3	1	13	—	73	30	4	121
4	5	31	2	64	25	9	136
5	6	13	5	118	2	5	149
Abattoir	74	254	63	1137	408	338	2274
							2783

Note—The figure 145 carcases required to make up the total of Table E were inspected in slaughter-houses in the Cockington District.

TABLE E.

Total Number of Carcases Examined in Different Slaughter-Houses and Shops during the Year 1920.

Slaughter-houses	2928
Shops	3572
	6500

TABLE F.

Diseased or Unsound Food Destroyed.

1919.					1920.			
tons.	cwts.	qrs.	lbs.		tons.	cwts.	qrs.	lbs.
5	7	2	2	Voluntary surrendered (approximate weight)	3	0	2	12
2	16	1	26½	Surrendered after inspection (approximate weight)	2	6	3	13½
—	13	2	3	Seized	—	9	1	24½
8	17	2	3½		5	16	3	22

INSPECTION OF MEAT AND SLAUGHTER HOUSES, Etc.

The inspection of meat and other foods, slaughter houses, shops, and other places where foods are prepared for sale, is under the supervision of Mr. BODY.

During the year conditions as regards supplies have been more normal, Government Control of meat and the majority of foods having ceased, trade competition has prevailed, with the result the quality of home killed meat has improved, but frozen meat, especially some consignments, allocated by the Government Departments, was in a most deplorable condition, in fact it became so bad, that representations were made on several occasions to the Ministry of Health, and other Government Departments concerned in the matter.

Mr. BODY reports as follows :—

On the whole the quality of the imported meat entering the town has been "fair," but the "conditions" of some of the consignments were exceedingly bad. These remarks apply chiefly to mutton under "control." Some of these consignments arrived in a mouldy and decomposing condition, others were defrosted and so filthy that "trimming" was out of the question, total condemnation being the only alternative.

While the majority of imported meat was well up to the standard of quality, some consignments of mutton and lamb from Australia apparently came from districts where the drought was the worst ever known. The carcases in question were so devoid of fat and emaciated and had evidently been defrosted, frozen, and handled so many times as to be quite unfit for food when received here.

Only two sides of imported bacon were found to be unsound and only one complaint was received that the bacon smelt bad when cooked. Last year we destroyed 1,121 lbs., while this year the total weight was only 116 lbs.

TUBERCULOSIS.

Pigs have shown an increase in this disease of a little over 100%, viz.: 12 in 1919 and 27 in 1920. Of this number about 14 were reared in the Borough. Nevertheless the percentage is only ·19 of the total carcases inspected. Only one case of generalization was found calling for the destruction of the whole of the carcase and organs.

Three chickens were also found to be affected with this disease, these were the last of a number at a certain farm where the disease had been prevalent for several years. After these birds were killed, the farm was cleared of poultry for four or five months. During this period all houses, runs, sheds, etc, were well limewashed several times. As regards cattle only eight beasts were found affected, viz.: six cows, one heifer, one bullock. All came within the category of "Localization." A total of ·9% of the total carcases examined. None of these animals were reared in the Borough.

Early in the year the County Authorities requested the Council to bring to the notice of the cowkeepers the danger to the public health arising from milk from tuberculous animals. The local cowkeepers and dairymen were duly circularised.

Johne's Disease.

Only one cow was found affected with this disease. This animal was so emaciated and fevered as to call for the total destruction of the carcase and organs.

Anthrax.

No cases of Anthrax were reported or discovered, but a suspicious case occurred early in the year. The animal was being driven to the cowshed when it suddenly dropped, and as it was unable to rise and appeared to be dying, it was stuck and removed to the abattoir to be dressed. A microscopical examination was at once made of the blood, and blood from different organs with a negative result. The bacteriological examination also proved negative. Careful examination was then made of the internal organs, the valves of the heart being found diseased, this probably accounted for the almost sudden death of the animal.

This case shows the usefulness of a well equipped laboratory, with such facilities one is enabled to diagnose obscure or suspicious diseases, and an early decision made as to whether the carcase is fit for food or not, otherwise specimens of the organs or blood would have to be dispatched to a bacteriologist and his report awaited. In the laboratory attached to the Sanitary Department all diseases are microscopically and bacteriologically examined, and every effort made to confirm by these means the diagnosis arrived at by the naked eye appearance.

Swine Fever

Two suspected cases were notified during the year, both were negative, Pneumonia proved to be the cause of death. Other pigs from the same farm when slaughtered were found to be affected with Strongyli paradoxus, and which no doubt gave rise to Pneumonia in the other cases.

Foot and Mouth Disease.

No cases of this disease were notified or discovered in the Borough, but a serious outbreak occurred in the Buckfastleigh district. The restrictions preventing the removal of live animals in the scheduled area accounts to a great extent for the decrease in the number of animals slaughtered in the Local Slaughter-houses. Imported and other dead meat having to take the place of the usual local killed.

Sheep Livers.

A large number of these organs were found to be badly affected, thus the appearance led me to think the conditions arose from a parasitic invasion leading to the formation of abscesses. It has been observed that the disease is more prevalent during the first and last quarters of the year, especially during the wet season, this was very noticeable during the latter end of 1914 and early 1915. This is a characteristic of parasitic disease and is well borne out by outbreaks of fluke disease or "Liver rot," *vide* the present outbreak in Wales and the Okehampton districts.

Although we were confident the disease arose from a parasite no specific organism could be discovered, although microscopical and bacteriological examinations have been made of a vast number of cases for several years. A few years ago specimens were forwarded to several well known bacteriological laboratories, but with no definite result as to the nature or cause of the disease. However, after a considerable amount of research the spores of the Coccidia in various stages of development were found. As this disease is very common in the rabbit, it is evident that these animals are the source of the trouble. The infected rabbits pass the ova or spores and foul the pastures, the ova are ingested by the sheep, and these in turn probably infect their fellows, and so the disease was spread from animal to animal.

The following facts in this connection are of interest:—

It is customary for butchers in the Borough to buy a number of sheep at Newton Abbot market, and bring them to Torquay. Several will be slaughtered almost immediately on arrival. Examination of their livers show no sign of disease. A week later several more will be slaughtered when there is a slight evidence of these abscesses, while a week later the disease is quite definite. This suggests the inference that the sheep are infected on the ground where they are pastured prior to slaughter. It also seems that sheep fed in the low lying districts are more likely to be infected than those on higher ground. It would be of interest to learn whether this condition is one that is confined to the South of England where the temperature is mild, or is it universal over the country? Few text books draw any attention to the condition which is of some importance to breeders and and butchers, and is worthy of further research.

As a preventative measure one would suggest well liming the pastures where the disease is known to be prevalent.

Other Animal Diseases.

Various orders have been issued by the Board of Agriculture. These related to Sheep Scab, Glanders and Farcy, Cattle Plague and Epizootic Abortion. In connection with the latter, Regulations were made by the Council similar to those in force in the County. The Swine Fever Order had reference to the registration of Pig dealers. This order and several of the orders above referred to, were dealt with by the police.

TRANSPORTATION, STORAGE, AND DELIVERY OF MEAT.

It seems somewhat extraordinary that public opinion has not effected any great change in the methods adopted by butchers in handling this important article of our food supply. It is of some interest to know that a Commitee appointed by the Ministry of Health has been considering it, and it is hoped will evolve some means of doing away with many objectionable methods.

Under this heading it is necessary to consider the transport of meat from the slaughter house to the shop, and from the shop to the customers residence, from the railway station or siding to the shop, and the method of exposing the meat for sale.

As regards the conveyance of carcases from the various slaughter houses to the shops of the tradesmen, the usual method is an open cart or float (only a few tradesmen use a covered motor van) the bottom being covered with straw, but usually with a kind of sacking, and in very exceptional cases white calico or some similar material is used. Some of the carts are far from clean, although they are washed at times. The straw may be clean but it is not a suitable material on which to place cut sections of meat. (Straw is liable to infection by the Actinomycosis and other fungus or moulds). White cloths are more desirable as staining and dirt readily show and this results in greater care being displayed. The procedure during packing is also open to criticism. It is the practice even on wet days, for men whose boots are soiled with road dirt to get into the cart to fill the front part. In doing so they soil the straw or the cloth at the rear, and on this soiled part meat is afterwards laid. If a white cover was used this would probably be rolled up at the back whilst the front part was being packed, and it would be straightened out as the packing progressed. It is quite common to see a driver sitting on a consignment of meat without any covering over it, and it is a daily occurrence to convey carcases from the slaughter house and siding through the streets without any form of covering whatever.

The practice of exposing meat and other foods etc., in open shop windows is open to serious criticism. Practically every butcher's shop in the town has movable glass windows; these are removed when business commences in the morning, and it is only on rare occasions that the windows are put in during the day. During this time the whole of the meat in the shop is exposed to dirt and dust raised by the wind and passing traffic, which since the great increase in motor traffic, has become a serious matter. Road dust consists mainly of horse manure, other objectionable matter, and possibly disease producing germs, this when deposited on meat and other foods not only contaminates the articles, but becomes a source of serious danger to the public health. One has only to pass their hand over a carcase hanging in a shop window or on the slab and benches, especially during windy weather, to fully realise the amount of contamination that takes place.

The same conditions practically prevail in the delivery of the family joint. A common practice is to place the uncovered meat in an open basket in a carrier on the front of a bicycle, and

it is not unknown for the contents to be pitched into the road owing to the basket being insecurely fixed in the carrier, or other accidents.

Ice Safes.

These places are occasionally used for storage of other foods, such as rabbits, and during the colder months of the year, newspapers and other goods are frequently stored in them. These places should only be used for the purpose intended, and should receive periodical cleansing and disinfection.

In the report of 1919, attention was drawn to the unsatisfactory manner in which meat was conveyed by rail. Naturally since this article of food was decontrolled less meat is being conveyed, and consequently there have been fewer complaints. Attention was drawn to the dirty condition of the meat vans, since then the Station Master at Torre Station has made it his business to regularly inspect them, and every van before leaving Torre is thoroughly cleaned. But these vans do not always return here, and some of those which do come, show no evidence of having been cleaned for months. The practice of conveying carcases of meat, pigs or calves, by passenger train should be prohibited. In the ordinary luggage vans the food gets fouled in many ways; on arrival it is thrown out on the platform to await removal and as it is often of considerable weight it is dragged to some convenient spot, with the result that filth is well rubbed into it.

Other Foods.

The existing powers of inspection and dealing with premises where meat is cooked and stored is not quite adequate. Among these are included Fish and Chip frying, Cooked Meats and Sausages, Greengrocers, Grocers, Fishmongers and Hawkers. After an inspection of the Fish Frying Establishments, a report was presented to the Committee. Whilst as a whole these businesses were satisfactory, some left much to be desired, more especially as regards the storage of fat and flour, condition of frying stoves, seasoning vessels, etc. It is certainly desirable that the Council should be able to veto their establishment, when circumstances render such action advisable, also that there should be some regulations concerning the storage of dripping, fats, flour, potatoes, etc., that the accommodation for preparation should be suitable and that there should be adequate lighting and ventilation.

Fish Shops, Fish Dealers, Fish Hawkers, Game and Poultry Dealers.

The powers possessed by the Sanitary Authority are confined to the inspection of fish, game, and poultry, when exposed for sale, and to seize such if they are diseased, unsound, or unwholesome. They have no power to inspect the premises or the places where the food is stored prior to sale. In the case of fish hawkers, the majority of whom live in the poorer and thickly populated parts of the town, the accommodation for storing fish from day to day is usually a dirty, badly lit and unventilated outbuilding or wash-house, or even the living room of their house. Keeping dried fish under such conditions is more dangerous than wet fish, the latter being more easily detected when stale, and are usually well washed prior to cooking. At Christmas it is customary for poultry to be sold by Greengrocers, Butchers, Dairyman and Grocers, and consequently supervision of such places is desirable.

Greengrocers.

The practice of exposing potatoes, cabbages and vegetables on the footpaths or doorways of these premises, so that they are frequently fouled by passing dogs, is most objectionable, and representations have little or no effect.

Grocers.

The conditions of the places where food and groceries are stored ought to be regularly inspected.

Cooked Meats, Etc.

These premises are frequently inspected as the articles dealt with before cooking come within the definition of "Butcher's meat." On the whole the premises and utensils are found generally clean, but we lack power to insist upon proper storage accommodation, suitability of premises, and thorough cleanliness of utensils and persons engaged in the business.

Sausage Making.

The same remarks apply to sausage making rooms, although the majority of butchers make their sausages in the shop directly under the public eye. Nevertheless there are a few whose premises cannot be called quite suitable for the purpose, one in fact being in close proximity to a stable.

The number of tinned foods found to be unsound was again above the normal. Damage in transit and faulty soldering of the tins appeared to have been the trouble. A few tradesmen appear to exercise care in handling this class of goods, and usually report suspicious cases, but considering the quantity of tinned goods sold during the summer months, the number of tradespeople who deal in such, and to the fact that only three or four Grocers make a practice of reporting defects, it seems desirable in view of the danger arising from food poisoning that tradesmen should be warned to exercise care and report suspicious cases.

Sale of Food and Drugs Act.

Samples are taken by the County Police. Through the courtesy of Superintendent Crooke, I am enabled to give the following results :—Seventeen samples of bread, butter, cream, flour, tea and margarine, were taken, and on analysis were found genuine. Forty samples of milk were analysed, and eight were not genuine. In most there had been an abstraction of milk fat varying from 6 to 33%. Prosecutions were instituted in the eight cases, two were dismissed, while fines were inflicted in the other six.

Chemical and Bacteriological Examination.

It has been our custom to procure samples of milk from various dealers, and make analysis in the Laboratory attached to the Health Department, for our own information. During the year 14 milks were examined, when 5 were found below the standard. In several the amount of extraneous deposit was excessive. Besides the above, 15 specimens of meat were microscopically examined for tuberculosis, and two for suspected anthrax. Four specimens of oatmeal on examination were found to contain meal mites, as also did one specimen of flour.

INFECTIOUS DISEASES.

The total number of infectious diseases notified during this year was 218. The following table gives the diseases and the number of notifications :—

Diphtheria	34	Encephalitis Lethargica ..	0
Erysipelas	6	Pneumonia	19
Scarlet Fever	42	Malaria	3
Enteric	1	Pulmonary Tuberculosis ..	154
Puerperal Fever	0	Other Tubercular Diseases	12
Cerebro-Spinal Meningitis	0		
Poliomyelitis	0		
Ophthalmia Neonatorum	10	Total ..	281

Table II. of the Ministry of Health series found on page 55 gives the age distribution, the cases notified in the various wards, and the numbers removed to the Isolation Hospital.

The following table gives the notifications from certain diseases, together with the average meteorological conditions prevailing during each month of 1920 :—

Month.	Meteorological Data.					Infectious Diseases Notified.				
	Mean Temperature.	Mean Daily Range.	Relative Humidity.	No. of Rainy Days.	Rainfall. Inches.	Diphtheria	Enteric Fever.	Scarlet Fever.	Erysipelas.	Totals.
January ..	44·7	9·8	88	17	6·2	4	—	17	3	24
February ..	46·7	8·2	86	7	0·63	7	—	5	—	12
March ..	46·7	11·9	82	14	3·51	5	—	1	—	6
April ..	49·8	9·7	81	17	3·71	5	—	4	1	10
May ..	54·9	10·9	77	9	1·49	1	—	1	—	2
June ..	59·3	10·7	79	10	1·53	2	—	3	—	5
July ..	59·6	10·2	82	17	3·35	2	—	2	1	5
August ..	58·9	11·3	78	4	1·40	1	—	2	—	3
September ..	58·8	11·9	86	7	1·65	1	—	0	1	2
October ..	56·1	8·3	87	10	2·34	2	—	5	—	7
November ..	49·4	9·7	86	7	1·77	4	—	1	—	5
December ..	44·0	7·0	87	17	6·01	—	1	1	—	2
Totals and averages	52·4	9·96	83.95	136	33·59	34	1	42	6	83

Cases Isolated in Hospital.

There is accommodation at the Isolation Hospital for Scarlet Fever and Diphtheria, and a small observation ward. Enteric cases are received by the Torbay (General) Hospital Authorities if accommodation admits.

Diphtheria	34 cases notified	25 removed	= 72 %
Scarlet Fever ..	42 cases ,,	36 ,,	= 86 %
Enteric Fever ..	1 case notified and treated in the Torbay Hospital.		

Bacteriological Examination.

Specimens from suspected cases are examinined at the expense of the Town Council by Mr. Quant, of the South Devon Chemical and Bacteriological Laboratory, who reports that during the year he examined specimens as follows :—

Diphtheria ..	132	Positive		9
		Negative		110
		For freedom from infection ..		13
Enteric Fever ..	2 ..	Negative		2
Tubercular Sputum ..		66 examinations	positive ..	15
			negative ..	51
Wasserman re-action ..		2 ,,	positive ..	1
			negative ..	1

In the Laboratory attached to the Health Department we have examined 109 specimens from inflamed or suspicious throats of children attending the elementary schools. Some 27 specimens for other pathological conditions were examined.

Enteric Fever.

Only one case was notified. The patient was a Japanese sailor and was removed from his ship at Dartmouth for treatment in the Torbay Hospital. We have also to account for the death of a Torquay inhabitant, who died in the Exminster Asylum from this disease. Enquiries showed that she had been in that institution from August, 1919, and died in January, 1920. The diagnosis was confirmed by post mortem examination. The origin of the infection is quite unknown, but it was certainly not contracted here. In my last report I stated "For the second year in succession we have had practically complete treedom from this disease." This therefore makes the third year. This immunity is probably due to our excellent water supply and efficient drainage.

Scarlet Fever.

Forty-two cases were notified against twenty-nine last year. Thirty-six or 86% were removed to the Isolation Hospital. There were no deaths. During December, 1919, there had been a number of cases of measles in the vicinity of Homelands School. When the Schools re-opened after the Christmas Holidays an outbreak of scarlet occurred among the children attending the Homelands Infants School. Over a dozen cases were notified close on one another, so it was deemed advisable to close the department. The names and addresses of all children attending were obtained, these I visited finding three unrecognised cases in the early desquamating stages. No further cases were traced to this quarter. Among the remaining cases there was nothing of an epidemic nature.

Steps Taken to Prevent the Spread of Infectious Disease.

On 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 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 formalin. Next day the bedding and clothing is removed to the Disinfecting Station and there sterilised in a steam disinfector. In every case of notifiable disease this is done free.

The disinfector is one of the Thresh Disinfector Company's machines. It has now been in constant use for eleven years without requiring any special attention. During the year some 10,000 articles were disinfected.

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

The systematic notification of all cases of infectious or suspected illness amongst the children attending the elementary schools by the Head Teachers has, on the whole, proved of much assistance to me as Medical Officer of Health.

Smallpox and Vaccination.

No cases were notified. No vaccinations, either primary or re-vaccinations were performed by the Medical Officer of Health. The accompanying table indicates the position of the district as regards vaccination.

Through the courtesy of Mr. Edwards, the Vaccination Officer, I am able to give the results of primary vaccination for the years from 1898 to 1919 :—

Year.	Total births registered	Successfully vaccinated	Insusceptible of Vaccination	Had Small-pox	Number of Certificates from Conscientious Objectors	Died Unvaccinated	Postponed by Medical Certificate	Removed to other districts the Vaccination Officer of which has been apprised	Removed Address unknown	Percentage successfully Vaccinated	Excluding those who died Unvaccinated. Percentage
										%	%
1898	664	544	2	—	10	64	6	7	25	82	90
1899	612	505	6	—	14	67	6	3	11	83	93
1900	596	502	1	—	15	47	7	3	21	84	91
1901	597	491	2	—	16	57	13	1	17	82	91
1902	579	488	2	—	8	61	4	4	8	84	92
1903	565	508	2	—	14	34	1	3	3	90	95
1904	564	476	—	—	20	49	3	6	8	84	92
1905	561	504	—	—	16	30	5	2	4	90	94
1906	591	501	1	—	25	47	5	2	8	84	92
1907	582	447	2	—	41	39	5	4	13	76	82
1908	546	394	—	—	83	48	8	4	9	72	80
1909	596	370	3	—	158	37	12	1	11	62	66
1910	568	302	2	—	197	43	12	2	8	53	57
1911	560	269	1	—	231	37	9	4	9	48	54
1912	583	270	3	—	239	48	3	4	15	46	54
1913	569	215	—	—	281	47	6	3	14	37	41
1914	572	217	1	—	301	26	11	—	12	37	40
1915	514	198	1	—	254	28	17	—	8	38	40
1916	474	176	2	—	223	41	10	16	—	37	40
1917	414	162	1	—	200	20	9	3	13	39	41
1918	425	176	2	—	182	21	11	6	21	41	43
1919	541	213	—	—	244	27	2	1	*52	40	36

* 33 of these are children of Colonial soldiers returned home to Australia or New Zealand with their wives and children.

From the above it will be seen that about 45 per cent. of children born are unprotected by vaccination. A very precarious position for such a town as Torquay to be in, should small-pox be introduced.

Diphtheria.

Thirty-four cases were notified against 36 in 1919. Cases occurred in each month of the year except December, but at no time did it occur in epidemic form. Of the 34 cases, 25 were removed to the Isolation Hospital, a percentage of 72. Four deaths occurred and in each case the patient was practically comatose before medical assistance was obtained. The mortality is equal to ·11 per 1,000 of the population and 11·7% of the notified cases.

The age and sex distribution is as follows :—

Ages.	1—5	5—15	15—25	25—65	Totals
Males	4	11	1	—	16
Females	—	13	5	—	18
Totals	4	24	6	—	34

It is the routine practice to examine and take swabs from contacts, and in a considerable proportion of instances, prophylactic injections of antitoxin are given.

Encephalitis Lethargica, Cerebro, Spinal Fever and Poliomyelitis.

There were no notifications.

Erysipelas.

Six cases were notified, one proved fatal.

Malaria.

Three cases were notified. They were all recurrent and all were demobilised soldiers.

Pneumonia.

Nineteen cases were notified.

Tuberculosis.

During the year 245 notifications of Pulmonary Tuberculosis were received against 190 in 1919. These referred to 144 notifications under Form A, that is primary notifications. The remaining 101 consisted of 10 under Form B, *i.e.*, by the School Medical Inspector, 44 under Form C admission to, and 47 under Form D discharge from public institutions. There were 12 notifications of other forms of tubercular disease.

Notifications of Tuberculosis during 1920.

Month	TUBERCULOSIS.													OTHER TUBERCULAR DISEASES.										
	Form A.			Form B.			Form C.			Form D.			Totals.	Form A.			Form B.			Form C.			Form D.			Totals.
	Residents	Visitors	Total	Residents	Visitors	Total	Residents	Visitors	Total	Residents	Visitors	Total		Residents	Visitors	Total	Residents	Visitors	Total	Residents	Visitors	Total	Residents	Visitors	Total	
January ...	13	—	13	1	—	1	2	—	2	6	—	6	22	2	—	2	—	—	—	—	—	—	—	—	—	2
February ...	25	—	25	4	—	4	2	—	2	3	1	4	35	1	—	1	—	—	—	—	—	—	—	—	—	1
March ...	11	1	12	1	—	1	4	—	4	4	—	4	21	1	—	1	—	—	—	—	—	—	—	—	—	1
April ...	17	2	19	—	—	—	3	—	3	3	1	4	26	1	—	1	—	—	—	—	—	—	—	—	—	1
May... ...	4	3	7	1	—	1	5	—	5	1	—	1	14	2	—	2	—	—	—	—	—	—	—	—	—	2
June ...	6	—	6	—	—	—	4	—	4	6	—	6	16	1	—	1	—	—	—	—	—	—	—	—	—	1
July ...	7	—	7	—	—	—	5	—	5	5	—	5	17	—	—	—	—	—	—	—	—	—	—	—	—	—
August ...	7	—	7	—	—	—	5	—	5	—	—	—	12	—	—	—	—	—	—	—	—	—	—	—	—	—
September ...	9	—	9	2	—	2	2	—	2	2	—	2	15	1	—	1	—	—	—	—	—	—	—	—	—	1
October ...	16	1	17	—	—	—	7	—	7	5	2	7	31	1	—	1	—	—	—	—	—	—	—	—	—	1
November ...	10	3	13	—	—	—	2	—	2	3	—	3	18	—	—	—	1	—	1	—	—	—	—	—	—	1
December ...	7	2	9	1	—	1	3	—	3	5	—	5	18	—	—	—	1	—	1	—	—	—	—	—	—	1
Totals ...	132	12	144	10	—	10	44	—	44	43	4	47	245	10	—	10	2	—	2	—	—	—	—	—	—	12

Forty-two deaths were registered from Pulmonary Tuberculosis among Torquay residents, besides which there were 8 deaths among visitors, whose deaths were transferred to other sanitary areas.

The death-rate is equal to 1·2 per 1,000 per annum, against 1·3 per 1,000 in 1919.

The following table gives the sex and age at death :—

Age period		1—5	5—15	15—25	25—45	45—65	over 65	Totals.
Residents	Males	—	1	4	9	4	—	18
	Females	—	—	6	12	5	1	24
Totals		—	1	10	21	9	1	42

There were no deaths from Tubercular Meningitis, but three from other forms of Tubercular diseases.

A detailed list of notifications is forwarded each week to the County Medical Officer of Health and they are subsequently forwarded to the District Tuberculosis Officer, who visits each case unless requested not to do so.

As a means of avoiding unnecessary overlapping of visits and irritation of patients, an arrangement has been made with that official that visits from the Sanitary Department would only be made in such cases as he considered it advisable, and he would periodically send us copies of the particulars of family history and home surroundings of the patients for entry in our register. The names of all Elementary School children living in such houses are also sent, these are entered on special cards so that the children may be examined at the regular visits of the School Medical Officer.

Free disinfection of rooms and bedding is carried out after death or removal of patients from houses in the Borough.

The Health Visitor paid 45 home visits to supervise the nourishment benefit ordered for Tubercular patients.

Throughout the year the Devon County Council utilised "Smyrna" as a Tuberculosis Dispensary, where also a few advanced cases were admitted for treatment. This place will

be given up when the late Western Hospital now known as "Whitecliffe" is taken over, which will be early in 1921. In this building there will be much more accommodation for in-patients. Suitable early cases are admitted to the Hawkmoor Sanatorium near Bovey Tracey. There is still a great want for a residential school for tubercular children. At present such cases are excluded from school without efficient supervision, which is neither good for them physically or morally.

Cancer, Malignant Disease.

There were 72 deaths registered from the above cause, 17 more than in 1919. The age and sex distribution is as follows :—

Age period	under 30	30—35	35—45	45—55	55—65	65—75	over 75	Totals
Males	—	—	4	2	12	11	4	33
Females	—	1	2	4	10	14	8	39
Totals	—	1	6	6	22	25	12	72

It is thus seen that the incidence of this disease is more in females than males.

In considering such a disease as cancer, which usually affects persons in the prime or later years of life and more especially females, it must be borne in mind that in communities such as Torquay whose population have a larger proportion of such people than the country as a whole, must suffer more severely.

The death-rate for the year is equal to 2·0 per 1,000 corrected for age and sex distribution it is equal to 1·7.

Venereal Disease.

The treatment of Venereal Disease is under the direction of the Devon County Council. The present arrangements are not satisfactory as the scheme for the provision of a treatment centre for Torquay has not yet been consummated. It has been customary for Medical men to send patients desirous of free treatment to me so that I can arrange for their attendance at the Exeter Centre. Similarly suspected cases are also

sent to me to obtain blood specimens. These are sent to Exeter and the Medical Attendant informed of the result. The time taken in travelling and the cost are naturally prejudicial to the full continuance of the course of treatment. In spite of this a fair number of persons have availed themselves of the facilities provided, but I have no means of knowing whether they have continued their treatment till cured.

The Town Council have agreed to the erection by the County Council of an army hut on the allotments, near the destructor for a Centre, but although the sections of the hut have arrived, it has not yet been erected. Without the provision of a Centre propaganda work is not likely to be of much avail.

MATERNITY AND CHILD WELFARE.

The Devon County Council is the supervising authority under the Midwives Acts. Any irregularities in the carrying out of the rules of the Central Midwives Board, which come to our notice are reported to the County Medical Officer of Health.

Conservation of Infant Life.

In 1915 The Notification of Births Act became compulsory, *i.e.*, the parents or other persons mentioned in the Act were bound to give notice of the birth to the Medical Officer of Health of the District in which the child is born within 36 hours of its occurrence. By close consultation with the Registrar of Births, who calls at my office each week, we are of mutual assistance to one another, as births may have been registered with him of which I am unaware, and *visa versa*. When non-notified births are discovered, a notice is sent to the parents warning them of the penalties they have rendered themselves liable to, and asking them for the required particulars.

The early notification is only a means to an end. That is the learning of the home conditions and rendering all assistance to the Mothers to rear their children in health. The means adopted are as follows :—

On receipt of the notification a circular letter is sent to the Mother pointing out the benefits of the Welfare Centres. When and where they are held, and cordially inviting her on her recovery to make use of them.

Ten days after the birth the Lady Health Visitor calls and endeavours to see the mother and baby and obtain such particulars as are necessary to enable her to judge as to whether the infant will be properly looked after. A little booklet is presented of useful information, and the mother is again invited to attend the Welfare Centres. This visiting and investigation is a proceeding requiring considerable tact, and if this is possessed by the Health Visitor, all reluctance on the mothers part is overcome and future visits are looked for and a cordial welcome is given. There are, of course, cases where circumstances are not as they should be, for example, where an infant is not wanted, here it is necessary for the Health Visitor to take a firm stand and convince those in charge of it, that it must be given a fair chance to live.

Occasionally cases are discovered of weakly infants who do not seem to thrive in spite of proper instructions for feeding. In such cases there is a tendency for the anxious mother to ring the changes as regards the infants' food on the advice of all and sundry. Here we advise the admission of the infant into Rosehill Children's Hospital, where the Town Council have subsidised one cot and pay for others as necessary. The result is usually wonderful, after a month or two the infant being restored to its mother in perfect health.

During the earlier part of the year owing to continued ill health of the Health Visitor, Miss Mylan, and her subsequent resignation, the work of investigating births and home visiting fell sadly into arrears. In September, Miss Milburn took up her duties and the work has been regularly carried out since then.

The totals for the year are as follows:—

Birth investigations at home	350
Re-visits	517
Still-births investigated	6
Ante-natal visits	40
Enquiries into cases of Ophthalmia Neonatorum ..	21
Cases of tuberculosis	45

In all a total of 1,184 visits and re-visits were made.

Provision of Milk to Necessitous Mothers and Infants.

Where it was ascertained that circumstances are such that the want of a proper supply of milk is likely to prove prejudicial to health, one of the parents is advised to make personal application to me. I then obtain full particulars concerning the

family, ages of children, rent, and the amount of weekly remuneration etc., and if satisfied, arrange for a supply from their own dairyman. Occasionally I verify statements by consultation with the Labour Exchange, the Relieving Officer, and the Secretary of the C.O.S. There is no doubt such assistance is of inestimable value in saving the lives of infants in the times of stress.

The Work of Infant Welfare Centres.

The whole of this work is under the Infant Welfare Committee of the Town Council, and their arrangements are as follows :—

There are three Centres in different parts of the town, which are opened once a week :

(1) Ellacombe Centre meets at the Ellacombe Parish Room on Fridays, from 2.30 to 4.30.
(2) St. Mary-Church and Babbacombe Centre meets in the Furrough Cross Congregational Schoolroom on Thursdays, from 2.30 to 4.30.
(3) Abbey Road Centre meets in the Abbey Road Congregational Schoolroom on Mondays, from 2.30 to 4.30.

The Centres are practically run on similar lines. In each there is a Committee of voluntary workers, who make themselves responsible for the proper arrangements at the Centres. The Assistant Medical Officer of Health, Dr. P. A. McCallum, attends each Centre, and is responsible for the medical arrangements, and with him is either the lady Health Visitor, the Matron of the J.N. Inst., or one of the St. Mary-Church District Nurses.

Briefly, the routine may thus be described :—The mothers with infants arrive, and their attendance is recorded (in new admissions other details are obtained). They then proceed to the weighing room, where the babies have their things removed and are weighed, and the weights recorded on a card. They next see the doctor, who charts the weights, enquiring as to the health, etc., and as circumstances occur advises concerning feeding or other conditions which may have arisen since the last visit. After consulting the doctor the children are dressed, and tea partaken of (each person paying 1½d. towards the expenses). After tea, a short talk on some health subject, demonstration in home nursing, care of infants, cutting out garments, sewing, etc., are given.

The voluntary workers meet at regular intervals, when arrangements are made for the visiting of mothers not attending the Centres regularly. One cannot speak too highly of the

efforts of the voluntary workers; without their assistance it would be almost impossible to carry on the work. When we consider the tie that attendance one afternoon a week makes on these ladies' leisure, it is wonderful the regularity of their attendance and the enthusiasm they infuse into the work. I can assure them their efforts are appreciated, not only by the mothers who attend, but by the Maternity and Child Welfare Committee.

One is often asked what is the good of it all, or can you show any definite results for your efforts and the expenditure of money? I am afraid if it is to be a balance sheet where the results are expressed in £ s. d., we can show none, but I am fully convinced that the lives of many children have already been saved, and others helped to grow into strong healthy children. The normal infant at birth ought to be healthy, and by judicious advice we endeavour to keep them so. Frequently we find a mother with a weakly infant far below the normal weight, in fact resembling a miniature wizened old man with one foot in the grave. By careful instructions as to feeding, such infants begin to thrive and before long lose all their abnormal appearance and become healthy babies. Again, we have the infant healthy at birth, but after a time through some error in diet, it suffers from sickness and diarrhœa, and quickly causes alarm to the parents, here by proper instructions the child is soon put right. Other cases occur when on examination some defect is found which an early operation can rectify, but if delay occurs the defects become permanent and militates against the health of the child. In this way endeavour is made not only to save the lives of children during the first two years of life, the most dangerous period, but also to render them fit when the time comes to enter school life. Thus carrying out one of the main principles laid down by the Ministry of Health.

Again consider the Educational effect of these weekly meetings. The infant becomes something more than a doll or necessary evil. The weekly increase in weight becomes a matter of great interest to the family, mothers show great disappointment at any standstill or loss of weight and think out what could have been the cause, and naturally when a solution is found care is taken to prevent its re-occurrence.

The proper clothing of children has a very prominent place in this educational work, naturally mothers attending take a pride in the clothing used by their children.

The mothers evidently look forward to the meeting as a break in the daily routine where they can have a quiet talk and rid their minds of some anxiety which may have caused considerable worry. Thus improving their own health and that of their infants.

Again, expectant mothers come to ask advice as to symptoms which have alarmed or caused them inconvenience, such cases can be helped, and it is hoped that advantage will be taken of it.

The attendance at these Centres vary from time to time, but the average number is generally between 20 and 35, quite as many as can properly be seen by the Doctor at one session.

Again the query arises do we get the proper people? Few of those who attend do not benefit, but still there are some who do not come whose attendance would be desirable. Every effort is made by the Midwives, Health Visitor and Voluntary Workers to induce such mothers to come to the Centres.

The Cost of Welfare Centres. Correct accounts of the expenditure incurred in running the Centres are kept by the Secretaries of each, and are rendered to me once a quarter. They are carefully examined and laid before the Maternity and Child Welfare Committee for payment. Once a year a detailed statement of all expenditure, under various headings for the previous year, is sent to the Ministry of Health. As a result a grant of 50% of all expenditure is received.

Provision of Midwives for Necessitous Mothers. The Town Council make a yearly grant to the Queen Victoria Jubilee Nursing Institution and the St. Marychurch District Nursing Association, of a quarter of the deficit between the cost of maintaining their midwives and the amount received in fees from patients. A grant is also made to the Committee of the Door of Hope for Friendless Girls, towards the expenses of running that Institution. The babies here are regularly seen by the Corporation Health Visitor.

Lying-in Accommodation. There is no Institution in the Borough where mothers of the working classes can be received for ordinary confinement. The Authorities of the Torbay Hospital will, however always receive cases of complication. In these days when it is necessary to avoid capital expenditure, it is useless to make suggestions for providing such accommodation.

Puerperal Fever.

One case was notified. It occurred 14 days after the confinement and the patient was removed to the Torbay Hospital. Here it was definitely diagnosed as Double Pneumonia.

Ophthalmia Neonatorum.

Ten cases were notified. As a routine all these are at once visited by the Health Visitor who obtains particulars of the cases, she also revisits to ascertain the ultimate result of the case. The Council have an arrangement with the Queen Victoria Jubilee Nursing Association to treat all the cases in which the Medical Attendant considers it desirable. One of these children seen later at the Welfare Centre has one eye in which there is apparently little vision, the others seem to have progressed favourably.

Non Notifiable Infectious Diseases.

Measles which had showed epidemic form in 1919—continued in a lesser degree in the present year. Two deaths were recorded, both of children under five years. Where necessary, by arrangement, cases of measles are visited by Nurses from the Queen Victoria Jubilee Nursing Association.

Whooping cough was prevalent during the later part of the year. Influenza and Chicken-pox at times affected the attendance in the Elementary Schools.

Infantile Diarrhœa.

Four out of the five deaths from this disease were in children under one year of age. The rapid inspections of the district to detect accumulations of decaying organic matter was as usual carried out by the Inspectors during the summer months.

Diseases and Accidents of Parturition.

Two deaths were attributed to this cause.

SANITARY ADMINISTRATION.

The Staff.

The Medical Officer of Health is responsible to the Sanitary Committee for the proper working of the department. He is also the Administrative School Medical Officer, in which capacity he is responsible for the medical inspection and treatment of elementary school children, to the Education Authority.

For the efficient carrying out of these duties he has the assistance of the following :—

An Assistant and Deputy Medical Officer of Health, whose principal duties are the medical inspection and treatment of school children. In this connection may be included the *School Nurse*. The Deputy Medical Officer of Health also carries out the duties of Medical Officer to the Infant Welfare Centres, where he is assisted by the lady *Health Visitor*.

There are three Sanitary Inspectors, one of whom undertakes the special duty of Meat and Food Inspection, while another is the Meteorological Observer and Port Sanitary Inspector.

Means of Isolation.

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

Enteric Fever.

When there is accommodation, the Authorities of the Torbay Hospital admit cases of this disease.

Cockington Sanatorium.

Taken over from the Cockington Urban District at the time of the amalgamation. This hospital is considerably more than half-a-mile from any inhabited building, and is kept in readiness for the reception of small-pox, should any arise. In a health resort and riparian authority such as Torquay, where the introduction of small-pox is not unlikely, and the consequence of an epidemic would be disastrous, such accommodation is absolutely indispensable.

Isolation Hospital Report.

For the Financial Year ending March 31st, 1920.

At the end of the financial year, 1919, there were 4 patients in the Hospital. From that date till March 31st, 1920, 73 new cases were admitted, giving a total of 77 under treatment during the year.

The various diseases were as follows:—

Diphtheria	36
,, Carrier	1
Scarlet Fever	39
German Measles	1
Total	77

The average stay of all patients was 3035 days, or an average of 39·4 per patient. The average stay of Diphtheria cases was 31·5 days and that of Scarlet Fever cases, 47·7 days.

The following table gives the cost of working for the 12 months.

	£	s.	d.
Nurses' Wages and Diet	239	5	6
Patients' Diet	250	1	10
Laundress and Charwoman	111	16	6
Matron and Porter—Wages and Diet	159	6	7
Doctors' Fees	60	18	0
Disinfectants and Drugs	32	18	9
Insurances	10	12	11
Wood, Coal, Coke, etc.	81	4	7
Rates, Taxes	17	1	3
Removal of Patients	12	13	0
Telephone	12	10	0
Tradesmen's Accounts	89	8	7
Surveyor's ,, ...	33	1	11
	£1,110	19	5

Cockington Sanatorium.

	£	s.	d.
Rent	50	0	0
Caretaker	5	0	0
	£55	0	0

Local and Adoptive Acts in Force in the Area.

For many years the town was able to enforce many useful provisions by means of the Torquay Harbour and District Act. Now most of those sections are in the Public Health Amendments Acts, which are in force in the Borough. In fact, one may say that practically every adoptive act and regulation is in force here.

HOUSING.

In last year's report, I gave a full statement of the housing accommodation and conditions of the Borough, pointing out that in my opinion there was a shortage of about 600 houses for persons of the working classes.

To remedy this the Housing Committee of the Council had developed the Westhill Estate of 28 acres. Roads and sewers have been constructed according to the lay-out, and a start was made with the building of the first 86 houses. Some are nearing completion and the whole will be ready for occupation about the summer of 1921.

These houses are what we term revised A type, consistiug of parlour, kitchen, scullery, three bedrooms and a bathroom. The rental of these will be somewhere between 9/- and 11/-, with rates in addition. Undoubtedly there will be a demand for these houses, but there is some doubt if many will be occupied by persons of the working classes for whom they were intended, and it is questionable whether those persons who do take them will vacate houses suitable for others in need.

There have been no important changes in the population during the year, and little chance of it in the future.

There is no doubt that there is overcrowding due to the want of housing and the high rents demanded. Only a few grosser cases have been dealt with, as, for instance, where lodgers are the cause; in each case verbal notice has been sufficient to remedy the trouble.

Fitness of Houses.

For the most part the general standard of the houses is satisfactory. A number of the older and poorer class dwellings have for many years been starved in maintenance repairs; the consequence is that such repairs are costly and somewhat dangerous to execute. Many owners complain that they have not the money to do the work, and indeed in several instances, have disposed of their property at a low figure to those in a position to effect the needed repairs. On the whole most of the repairs have been carried out without resource to legal proceedings. It has now been realised by the Sanitary Committee that the most effective section to act under is Sec. 28 of the Housing and Town Planning Act, 1919, but even in some cases it is questionable if it is wise for the Authority to burden

itself with the cost of repairs, as, for instance, where there is a heavy mortgage on the property, and where an order for recovery, if made, would result only in a small monthly payment likely to cover a series of years. In such cases the proper method seems to be to apply a Closing Order, in spite of the hardship to tenants.

One house was closed for habitation, being practically beyond repair.

Unhealthy Areas: Pimlico and Temperance Street Areas.

This was fully dealt with in last year's report. These areas have been inspected by several officials of the Housing Commissioners, and they have in every particular confirmed the opinion of your officers. One question of importance was raised with regard to the Pimlico area, and that was, as the back portions of several shops fronting on Union Street were in a similar condition to other parts of the area, whether they should be included in the insanitary area? This raised the important issue whether, under these circumstances, the widening of this portion of Union Street, which in these days of motor traffic is most dangerous, should not be considered, and if decided on, whether the Government would contribute to the cost. No definite opinion on this point could be given by any of the Ministry's Inspectors, but they advised that the district valuers should be asked to estimate the cost of acquisition. This has been done, and we are awaiting the results of their inspections and valuations. As a preliminary to any scheme for dealing with the Pimlico area, the quarry at the top of Stentiford's Hill has been purchased, and a plan approved for the erection of five blocks of four houses each, "B" type, having a south aspect, to accommodate the families dispossessed. The work in connection with this has not yet been started.

HOUSING CONDITIONS.

Year ending 31st December, 1920.

	1.—General.	Totals
(1)	Estimated population	34,703
(2)	General Death Rate	14·7
(3)	Death Rate from Tuberculosis	1·2
(4)	Infantile Mortality	53
(5)	Number of Dwelling-houses of all classes	7,423
(6)	Number of Working-class Dwelling-houses	5,025
(7)	Number of New Working-class Houses erected	—

2.—Unfit Dwelling-Houses.

		Totals
I.	**Inspection.**	
	(1) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts)	163
	(2) Number of dwelling-houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910	260
	(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation..	1
	(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation	—
II.	**Remedy of Defects without Service of Formal Notices.**	
	Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers	59
III.	**Action under Statutory Powers.**	
	A. Proceedings under Section 28 of the Housing, Town Planning, &c., Act, 1919:	
	(1) Number of dwelling-houses in respect of which notices were served requiring repairs	1
	(2) Number of dwelling-houses which were rendered fit	
	(*a*) by owners	1
	(*b*) by Local Authority in default of owners ..	—
	(3) Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close	—
	B. Proceedings under Public Health Acts:	
	(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	345
	(2) Number of dwelling-houses in which defects were remedied	
	(*a*) by owners	285
	(*b*) by Local Authority in default of owners ..	—
	C. Proceedings under Sections 17 and 18 of the Housing, Town Planning, &c., Act, 1909:	
	(1) Number of representations made with a view to the making of Closing Orders	1
	(2) Number of dwelling-houses in respect of which Closing Orders were made	1
	(3) Number of dwelling houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit	—
	(4) Number of dwelling-houses in respect of which Demolition Orders were made	—
	(5) Number of dwelling-houses demolished in pursuance of Demolition Orders	—

3.—Unhealthy Areas.

Areas represented to the Local Authority with a view to Improvement Schemes under (*a*) Part I., or (*b*) Part II. of the Act of 1890:		
(1)	Name of area	—
(2)	Acreage	—
(3)	Number of working-class houses in area	—
(4)	Number of working-class persons to be displaced ..	—
4.—Number of houses not complying with the building bye-laws erected with consent of Local Authority under Section 25 of the Housing, Town Planning, &c., Act, 1919		—
5.—Staff engaged on housing work, with (briefly) the duties of each officer		—

Factory and Workshops.

During the year an attempt has been made to resume the routine inspection of Factories and Workshops in the Borough. The attached summary required by the Home Office gives the details of registered workshops, the various trades, and the defects found and remedied.

Port Sanitary Work.

Mr. Steventon has been appointed to undertake the duties in connection with the inspection of vessels entering the harbour.

As far as possible all vessels are boarded and inspected on arrival, special attention being paid to those from Foreign Ports.

During the year 44 vessels of various classes have been inspected, 4 being Foreign Steamers, 22 Foreign Sailing, 7 Coastwise, and the remaining 11 being Coastwise Steamers, Passenger Steamers, etc. As a number of vessels trade here at regular intervals it is only necessary to examine them periodically.

During the summer a number of high-class yachts visit Torquay, and these are not likely to be kept in any but a perfect Sanitary condition.

Occasional visits are also paid to the Pleasure Steamers plying here during the Season.

On the whole all the vessels inspected have been found in a satisfactory condition, most defects were of a minor nature, being at once attended to, when brought to the notice of the Master.

No cases of illness have been reported during the year, and no trouble with rats has been experienced.

The administration of the Factory and Workshop Act, 1901, in connection with FACTORIES, WORKSHOPS, WORKPLACES, & HOMEWORK.

1.—INSPECTION OF FACTORIES, WORKSHOPS, & WORKPLACES.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES.

Premises. (1)	Number of Inspections. (2)	Written Notices. (3)	Prosecutions. (4)
FACTORIES .. .. (Including Factory Laundries)	30	1	—
WORKSHOPS .. .. (Including Workshop Laundries)	268	33	—
WORKPLACES .. .. (Other than Outworkers' premises included in Part 3 of this Report).	18	2	—
Total	288	24	—

2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS, & WORKPLACES.

Particulars. (1)	Number of Defects. Found. (2)	Remedied. (3)	Referred to H.M. Inspector. (4)	Number of Prosecutions. (5)
Nuisances under the Public Health Acts :—				
Want of cleanliness	30	29	—	—
Want of ventilation	8	7	—	—
Overcrowding	—	—	—	—
Want of drainage of floors	—	—	—	—
Other nuisances	22	17	—	—
Sanitary accommodation — insufficient	2	—	—	—
Sanitary accommodation — unsuitable or defective ..	3	1	—	—
Sanitary accommodation — not separate for sexes ..	2	1	—	—
Offences under the Factory & Workshop Act :—				
Illegal occupation of underground bakehouse (s. 101)	—	—	—	—
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	4	4	—	—
Other offences .. .. (Excluding offences relating to outwork which are included in Part 3 of this Report.)	—	—	—	—
Total	71	59	—	—

3.—HOME WORK

NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.											Inspections of Outworkers' premises.	OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.			OUTWORK IN INFECTED PREMISES, SECTIONS 109, 110.		
	Lists received from Employers.						Addresses of Outworkers		Notices served on Occupiers as to keeping or sending Lists.	Prosecutions.								
	Sending twice in the year.			Sending once in the year.														
	Lists.	Outworkers.		Lists.	Outworkers.		Received from other Councils.	Forwarded to other Councils.		Failing to keep or permit inspection of lists.	Failing to send lists.		In-stances.	Notices served.	Prosecutions.	In-stances.	Orders made (s. 110).	Prosecutions (Sections 109, 110).
		Con-tractors.	Work-men.		Con-tractors.	Work-men.												
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Wearing Apparel— (1) making, &c. (2) cleaning and washing ..	38	—	54	1	—	1	—	6	7	—	—	—	—	—	—	—	—	—
Lace, lace curtains, and nets																		
Artificial flowers ..																		
Nets other than wire nets																		
Tents																		
Sacks																		
Furniture and upholstery																		
Fur pulling ..																		
Feather sorting ..																		
Umbrellas, &c. ..																		
Carding, &c., of buttons, &c.																		
Paper bags & boxes																		
Basket making ..																		
Brush making ..																		
Racquet and tennis balls																		
Stuffed toys																		
File making																		
Electro plate ..																		
Cables and chains ..																		
Anchors & grapnels																		
Cart gear																		
Locks, latches, and keys																		
Pea picking																		
Total	38	—	54	1	—	1	—	6	7	—	—	—	—	—	—	—	—	—

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year. (1)		Number. (2)
Important classes of workshops, such as workshop bakehouses, may be enumerated here.	Laundries	61
	Dressmakers and Milliners	63
	Tailors	26
	Bakers, &c...	38
	Other Trades	115
	Total number of workshops on Register ..	303

5.—OTHER MATTERS.

Class. (1)		Number. (2)
Matters notified to H.M. Inspector of Factories:—		
Failure to affix Abstract of the Factory and Workshop Act (s. 133)		—
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5)	Notified by H.M. Inspector ..	8
	Report (of action taken) sent to H.M. Inspector ..	—
Other		—
Underground Bakehouses (s. 101):—		
Certificates granted during the year		—
In use at the end of the year		5

TABLE I.

VITAL STATISTICS OF WHOLE DISTRICT DURING 1920 AND PREVIOUS YEARS.

Year.	Population estimated to Middle of each Year.	Births.			Total Deaths Registered in the District.		Transferable Deaths.		Nett Deaths belonging to the District.			
			Nett.						Under 1 year of age		At all ages.	
		Uncorrected Number.	Number	Rate.	Number.	Rate.	of Non-Residents registered in the District.	of Residents not registered in the District.	Number.	Rate per 1,000 Nett Births	Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1912	39000	560	571	14·6	485	12·4	58	52	52	91	479	12·2
1913	39250	530	535	13·6	495	12·6	45	71	58	108	521	13·2
1914	39440	533	542	13·1	482	12·2	44	54	45	83	492	12·4
1915	32520	482	490	12·4	543	16·6	59	92	41	83·6	576	17·7
1916	31540	449	459	13·3	554	17·2	65	53	43	93·7	542	17·2
1917	30685	389	401	11·7	562	18·3	88	80	26	64·8	554	18·0
1918	30710	407	412	12·0	597	19·4	85	110	31	75	622	20·2
1919	33374	517	531	15·2	501	15·0	60	63	25	47	504	15·1
1920	34703	643	657	18·6	505	14·5	57	62	34	53	510	14·7

TABLE II.

CASES NOTIFIED DURING THE YEAR 1920.

NOTIFIABLE DISEASE.	Number of Cases notified.								Total cases notified in each locality.									Total cases removed to hospital.
	At all ages.	At Ages—Years.							Torre	Waldon	Upton	Ellac'mbe	Strand	Torwood	St. M'C'h.	Babbac'be	Chelston	
		Under 1	1 to 5	5 to 15	15 to 25	25 to 45	45 to 65	65 and upwards										
Small-pox ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Cholera ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Diphtheria,incl'd'g Membranous croup	34	—	4	24	6	—	—	—	3	4	12	7	3	2	1	2	-	25
Erysipelas ..	6	1	—	—	2	2	1	—	2	-	1	1	1	1	-	-	-	—
Scarlet fever ..	42	—	4	34	4	—	—	—	1	5	5	6	5	1	2	14	3	36
Enteric fever ..	1	—	—	—	1	—	—	—	-	-	1	-	-	-	-	-	-	1
Typhus fever ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Relapsing fever ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Continued fever ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Puerperal fever ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Cerebro-spinal Meningitis ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Poliomyelitis ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Opthalmia Neonatorum	10	10	—	—	—	—	—	—	4	-	2	1	1	-	1	1	-	—
Encephalitis Lethargica .	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Pulmonary Tuberculosis ..	154	—	1	15	43	75	18	2	33	16	17	38	12	6	11	14	7	—
Other form of Tuberculosis ..	12	1	—	5	2	4	—	—	1	2	2	4	-	1	1	1	-	—
Pneumonia ..	19	—	1	4	—	11	1	2	2	-	7	4	1	3	2	-	-	—
Malaria ..	3	—	—	—	1	2	—	—	1	-	-	1	1	-	-	-	-	—
Totals ..	281	12	10	82	59	94	20	4	47	27	47	62	24	14	18	32	10	62

The Isolation Hospital is situated outside the Borough on the Newton Abbot Road. The Cockington Isolation Hospital is reserved for cases of small-pox.

Total available beds for general Infectious Diseases, 16. Two Diseases can be treated concurrently.

TABLE III. CAUSES OF, AND AGES AT DEATH DURING THE YEAR 1920. (see Notes next page).

CAUSES OF DEATH.	Net deaths at the subjoined ages of Residents whether occurring within or without the District (a).									Total Deaths whether of Residents or non Residents in Public Institutions in the District
	All ages	under 1	1 and under 2	2 and under 5	5 and under 15.	15 & under 25.	25 & under 45.	45 & under 65.	65 & upwards	
All causes (Certified (c))	505	34	4	7	10	21	57	105	267	42
All causes (Uncertified)	5	—	—	—	—	—	—	—	5	—
Enteric Fever ..	1	—	—	—	—	1	—	—	—	—
Small-pox	—	—	—	—	—	—	—	—	—	—
Measles	2	—	—	1	1	—	—	—	—	—
Scarlet Fever ..	—	—	—	—	—	—	—	—	—	—
Whooping-cough ..	—	—	—	—	—	—	—	—	—	—
Diphtheria & croup	4	—	1	1	2	—	—	—	—	—
Influenza	8	—	—	—	—	2	—	2	4	—
Erysipelas ..	1	—	—	—	—	—	—	—	1	—
Phthisis (Pulmonary Tuberculosis) ..	42	—	—	—	1	10	21	9	1	8
Tuberculous Meningitis	—	—	—	—	—	—	—	—	—	—
Other tuberculous diseases	3	—	—	—	—	1	—	2	—	1
Cancer, malignant disease ..	72	—	—	—	—	—	6	31	35	9
Rheumatic Fever ..	—	—	—	—	—	—	—	—	—	1
Meningitis (*See* note *d*)	1	—	—	1	—	—	—	—	—	—
Organic Heart Disease	78	—	—	—	3	2	3	16	54	4
Bronchitis ..	36	1	2	—	—	—	1	2	30	—
Pneumonia (all forms)	19	2	—	2	—	1	4	4	6	3
Other diseases of respiratory organs	5	1	—	1	1	—	—	—	2	1
Diarrhœa and Enteritis (*See* note *e*)	4	4	—	—	—	—	—	—	—	—
Appendicitis and Typhlitis ..	1	—	—	—	—	1	—	—	—	2
Cirrhosis of liver ..	3	—	—	—	—	—	—	2	1	—
Alcoholism ..	—	—	—	—	—	—	—	—	—	—
Nephritis & Bright's disease	9	—	—	—	—	—	1	5	3	2
Puerperal fever ..	—	—	—	—	—	—	—	—	—	—
Other accidents and diseases of Pregnancy and Parturition	2	—	—	—	—	—	2	—	—	—
Congenital Debility and Malformation, including Premature Birth ..	17	17	—	—	—	—	—	—	—	—
Violent Deaths, excluding Suicide ..	13	1	1	—	—	1	2	3	5	2
Suicides	4	—	—	—	—	—	—	—	4	—
Other Defined Diseases	182	8	—	1	2	2	17	27	125	9
Diseases ill-defined or unknown ..	3	—	—	—	—	—	—	2	1	—
	510	34	4	7	10	21	57	105	272	42

SUB-ENTRIES included in above figures

(a) Cerebro-spinal Meningitis ..	—	—	—	—	—	—	—	—	—	—
(a) Poliomyelitis ..	—	—	—	—	—	—	—	—	—	—
Encephalitis Lethargica ..	—	—	—	—	—	—	—	—	—	—

NOTES TO TABLE III.

The classification and numbering of Causes of Death are those of the "Short List" on page XXV. of the Manual of the International List of Causes of Death.

(*a*) All "transferable deaths" of residents, *i.e.*, of persons resident in the district who have died outside it, are *included* with the other deaths in columns 2-10. Transferable deaths of non-residents, *i.e.*, of persons resident elsewhere in England and Wales who have died in the district, are in like manner *excluded* from these columns.

The total deaths in column 2 of Table III. should equal the figures for the year in column 12 of Table I.

(*b*) All deaths occurring in institutions for the sick and infirm situated in the district, whether of residents or non-residents, are to be entered in the last column of Table III.

(*c*) All deaths certified by registered medical practitioners, and all inquest cases, are to be classed as "Certified:" all other deaths are to be regarded as "Uncertified."

(*d*) Exclusive of "Tuberculous Meningitis" (10), but inclusive of Cerebro Spinal Meningitis.

(*e*) Title 19 should be used for deaths from Diarrhœa and Enteritis at all ages. (In the "Short List" deaths from Diarrhœa and Enteritis under 2 years are included under Title 19; those at 2 years and over being placed under Title 28).

TABLE IV.

INFANT MORTALITY DURING THE YEAR 1920.

NETT DEATHS FROM STATED CAUSES AT VARIOUS AGES UNDER ONE YEAR OF AGE.

CAUSES OF DEATH.	Under 1 Week.	1—2 Weeks.	2—3 Weeks.	3—4 Weeks.	Total under 1 Month.	1—3 Months.	3—6 Months.	6—9 Months.	9—12 Months.	Total Deaths under One Year.
ALL CAUSES. Certified ..	15	5	1	-	21	6	4	2	1	34
ALL CAUSES. Uncertified ..	-	-	-	-	-	-	-	-	-	-
Small-pox	-	-	-	-	—	-	-	-	-	—
Chicken-pox	-	-	-	-	—	-	-	-	-	—
Measles	-	-	-	-	—	-	-	-	-	—
Scarlet Fever	-	-	-	-	—	-	-	-	-	—
Whooping Cough	-	-	-	-	—	-	-	-	-	—
Diphtheria and Croup ..	-	-	-	-	—	-	-	-	-	—
Erysipelas	-	-	-	-	—	-	-	-	-	—
Tuberculosis Meningitis ..	-	-	-	-	—	-	-	-	-	—
Abdominal Tuberculosis..	-	-	-	-	—	-	-	-	-	—
Other Tuberculosis Diseases	-	-	-	-	—	-	-	-	-	—
Meningitis *(not Tuberculous)*	-	-	-	-	—	-	-	-	-	—
Convulsions	1	-	-	-	1	1	-	1	1	4
Laryngitis	-	-	-	-	—	-	-	-	-	—
Bronchitis	-	-	-	-	—	1	1	-	-	2
Pneumonia (all forms) ..	-	1	-	-	1	-	1	-	-	2
Diarrhœa	-	-	-	-	—	2	1	1	-	4
Enteritis	-	-	-	-	—	-	-	-	-	—
Gastritis	-	-	-	-	—	-	-	-	-	—
Syphilis	-	-	-	-	—	-	-	-	-	—
Rickets	-	-	-	-	—	-	-	-	-	—
Suffocation, overlying ..	2	-	-	-	2	-	-	-	-	2
Injury at Birth	-	-	-	-	—	-	-	-	-	—
Atelectasis	1	-	-	-	1	-	1	-	-	2
Congenital Malformations ..	-	-	-	-	—	1	-	-	-	1
Premature Birth	8	4	-	-	12	-	-	-	-	12
Debility, Atrophy, and Marasmus	1	-	1	-	2	1	-	-	-	3
Other Causes	2	-	-	-	2	-	-	-	-	2
	15	5	1	-	21	6	4	2	1	34

Nett Births in the year	Legitimate	601
	Illegitimate	56
Nett Deaths in the year	Legitimate	27
	Illegitimate	7

BOROUGH OF TORQUAY.

Meteorological Report

FOR THE YEAR 1920.

WITH EXTREMES AND COMPARISONS WITH AVERAGES OF PRECEDING YEARS.

BY

PERCY C. STEVENTON, F.R. Met. Soc.,

Borough Meteorologist.

February 1st, 1921.

BOROUGH OBSERVATORY,
PRINCESS PIER,
TORQUAY.

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

GENTLEMEN,

I have pleasure in submitting the following Meteorological Report for the Year 1920. Observations have been taken twice daily throughout the year, at 9 a.m. (Local Time), and between 5 and 6 p.m., according to the season of the year. The Readings at 9 a.m., have been posted each morning at the Observatory, Princess Pier, and various stations in the town; also at St. Marychurch Town Hall for the last month or two. The Evening Readings have been telegraphed, as usual, in code to the Meteorological Office, London, from whence they are distributed to the various Press Agencies for publication in the morning papers. During the Summer Season, morning telegrams were also sent to the Meteorological Office, at their request, giving particulars of the weather at 9 a.m. This information was published in several of the Evening Newspapers.

Press Telegrams are sent to the "Western Daily Mercury," morning and evening, and occasionally to the "Express and Echo." The Weekly Report, besides being sent to the Meteorological Office, is also forwarded to the "Torquay Directory," "Devon and Exeter Gazette," "Express and Echo," and several interested persons.

As in past years, the Monthly Report, which shews comparison with previous years, is published in the local papers. also posted up at the Observatory and other places in town, Copies are also forwarded to the Royal Meteorological Society, British Rainfall Organization and the Torquay Natural History Society. A separate Monthly Report giving our readings twice daily, etc., is sent to the Meteorological Office, London.

The observations are also published with others relating to the County of Devon, in the Annual "Climate of Devon" Report by the Devonshire Association.

Numerous private enquiries concerning the climate here have also been replied to during the year.

Altogether, no fewer than 1,200 Telegrams, Reports and other communications have been dispatched.

I am, Gentlemen,

Yours obediently.

PERCY C. STEVENTON.

OBSERVATORY AND INSTRUMENTS.

The Observatory is situated in North Latitude 50°28, and West Longitude 3°31, and at an elevation of 12 feet above mean sea level. It is organized and maintained by the Town Council and is under the supervision of the Meteorological Office, Air Ministry, London.

The several Barometers, Thermometers, and Rain Gauges have been verified at Kew Observatory, and are regularly examined by an Inspector on the staff of the Meteorological Office. 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 21 years, for Temperature and Rainfall of 44 years, and for Pressure of 36 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 :—

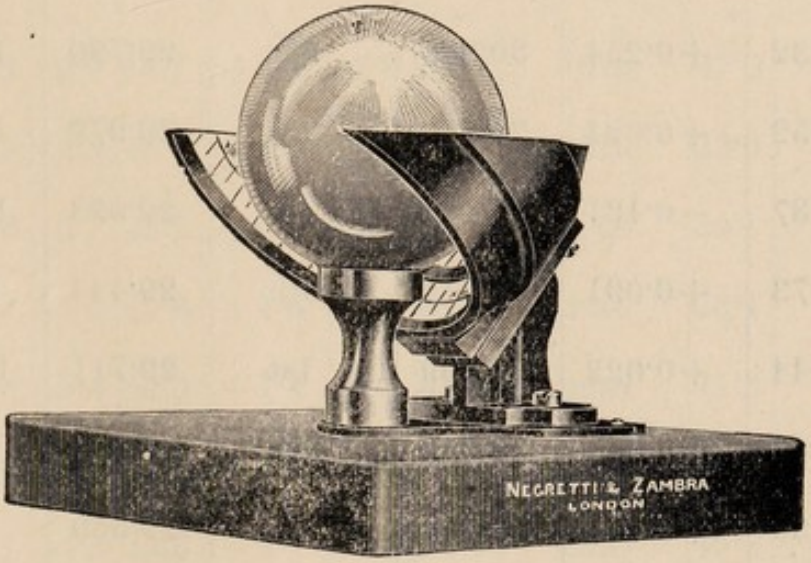
*The **Barometer** is a Fortin Standard, and is read twice daily, at 9 a.m. (local time), and at about 6 p.m. All readings are reduced to 32°F. and mean sea level, and are thus comparable with readings similarly reduced.

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

The **Baragraph** placed in the entrance to the Pavilion is in constant use, and continues to work satisfactorily.

Two double-louvred **Stevenson's Screens,** each containing **Dry** and **Wet Bulb,** and **Maximum** and **Minimum Thermometers.** The instruments are of standard make (Negretti and Zambra), and are so placed that the bulbs of the hygrometer are four feet above the level of the ground. One of these sets has been working throughout the year at Cary Green, where the official temperatures for the Meteorological Office have been taken; the other in the Princess Gardens.

The **Rain Gauges** are of copper, by Casella, and of the Snowdon pattern. They are placed: one on Cary Green, where official Records for the Meteorological Office have been taken, and one in the Princess Gardens, with the upper edges 12 inches above the level of the ground.



A third *Stevenson's Screen, also double-louvred has been in position in the Princess Gardens, in which is placed an **Ozonometer.**

The **Grass Minimum** by Negretti and Zambra, is placed in the Princess Gardens an inch above the ground.

The **Sunshine Recorder** is situated on the covered shelter at the southern end of the Pier deck, and is a Curtis Improved Campbell-Stokes instrument, fitted with a 4-inches spherical lens of crown glass, working on the principle of the burning-glass. The Sunshine Cards are forwarded at month ends to the Meteorological Office for inspection and examination,

BAROMETRIC PRESSURE

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

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1920.	*Mean* of Month.	Difference from *Mean* of Month.	Highest Reading.	Date.	Lowest Reading.	Date.	Extreme Range of Pressure.
January ...	29·954	−0·106	30·572	16th	29·129	11th	1·443
February ...	30·232	+0·254	30·602	5th	29·790	17th	0·812
March	29·952	+0·024	30·710	3rd	28·979	15th	1·731
April	29·737	−0·181	30·254	24th	29·093	13th	1·161
May	30·073	+0·091	30·614	5th	29·444	2nd	1·170
June.....	30·044	+0·022	30·399	1st	29·711	11th	0·688
July	29·943	−0·064	30·340	19th	29·423	8th	0·927
August.....	30·139	+0·164	30·463	29th	29·550	5th	0·913
September .	30·061	+0·022	30·320	11th	29·486	18th	0·834
October ...	29·903	−0·052	30·273	27th	29·224	31st	1·049
November ..	30·075	+0·138	30·502	9th	29·291	1st	1·211
December ..	30·007	+0·072	30·468	16th	29·402	21st	1·066
Year	30·010	+0·032	30·710	3rd March	29·093	13th April	1·617

SHADE TEMPERATURES

Taken at 9 a.m. (Local Time)

At Cary Green.

1920.	Maximum *mean.*	Minimum *mean.*	Max. & Min. *mean.*	Difference from Average.	Range *mean.*	Highest.	Date.	Lowest.	Date.
	°	°	°	°	°	°		°	
Jan. ...	49·6	39·8	44·7	+2·3	9·8	56.2	16th	27·6	7th
Feb. ...	50·7	42·5	46·7	+3·5	8·2	56·6	19th	32·0	22nd
March .	52·6	40·7	46·7	+2·5	11·9	59·8	17th	30·1	9th
April . .	54·7	45·0	49·8	+1·6	9·7	61·1	24th	36·1	1st
May ...	60·3	49·4	54·9	+1·4	10·9	69·9	24th	41·3	4th
June...	64·6	53·9	59·3	+0·8	10·7	72·0	2nd	47·3	5th
July ...	64·7	54·5	59·6	−2·1	10·2	71·1	29th	49·4	25th
Aug....	64·5	53·5	58·9	−2·8	11·3	73·9	14th	45·3	20th
Sept. . .	64·7	52·8	58·8	+0·5	11·9	73·0	5th	45·0	11th
Oct. ...	60·3	52·0	56·1	+3·7	8·3	67·3	7th	43·3	19th
Nov....	54·2	44·5	49·4	+2·1	9·7	60·9	9th	37·0	6th & 23rd
Dec. ...	47·5	40·5	44·0	−0·1	7·0	56·0	2nd	25·3	16th
Year	57·4	47·4	52·4	+1·1	10·0	73·9	14th Aug.	25·3	16th Dec.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Campbell-Stokes' Standard Instrument.

1920.	Total Bright Sunshine.	Difference from Average.	Greatest Amount in one day.	Date.	Sunless Days.
	Hours.	Hours.	Hours.		
January	70·0	+ 7·2	7·6	25th	9
February	68·7	− 16·9	9·2	22nd	9
March	142·7	+ 7·6	11·0	22nd	3
April	140·5	− 46·1	12·5	21st	1
May	226·4	− 0·1	13·9	19th & 23rd	1
June.....	217·9	− 6·8	14·4	3rd	1
July.....	167·4	− 71·6	14·0	19th	3
August.....	171·7	− 45·1	12·6	20th	2
September.....	150·4	− 14·7	10·6	10th	3
October	113·0	− 0·1	8·6	18th	4
November.....	69·2	− 11·7	7·3	6th	10
December.....	57·6	0·0	7·0	4th	12
Year.....	1595·5	−198·3	14·4	3rd June	58

RAINFALL

(In inches and hundredths)

Taken at CARY GREEN STATION.

1920.	Total Amount.	Difference from Average.	Rainy Days.		Greatest fall in 24 hours.	Date
			Days of 0·01 and upwards	Days of 0·04 and upwards		
January ...	6·2	+3·02	21	17	1·33	9th
February ...	0·63	−2·28	16	7	0·11	12th
March	3·51	+0·72	17	14	0·72	29th
April	3·71	+1·57	23	17	0·87	14th
May	1·49	−0·40	14	9	0·47	1st
June.....	1·53	−0·52	11	10	0·37	19th
July	3·35	+1·12	24	17	0·55	25th
August.....	1·40	−1·36	7	4	0·53	4th
September	1·65	−0·59	10	7	0·75	30th
October ...	2·34	−1·43	16	10	0·60	15th
November	1·77	−1·72	10	7	0·36	14th
December	6·01	+1·78	20	17	1·04	1st
Year.....	33·59	−0·09	189	136	1·33	9th Jan.

HUMIDITY, CLOUD, OZONE, AND WIND.

1920.	Humidity.			Cloud	Ozone. Percentage of possible.	Wind.	Grass Temperatures.		
	Dry Bulb *mean.*	Wet Bulb *mean.*	Relative Humidity.	Cloud *mean* 1 to 10.	*Mean* Daily Amount.	Prevailing Quarters.	Mean.	Lowest.	No. of days at or below 30°
January	44·8	43·3	88	7·7	55	W.	37·8	25·0	4
February	46·5	44·6	86	7·0	40	W.	38·2	27·1	1
March ...	47·1	44·6	82	6·5	50	S. & W.	36·8	24·9	3
April ...	49·1	46·5	81	7·0	56	W. & S.W.	41·5	33·2	—
May	54·3	50·6	77	6·0	54	W. & S.W.	44·0	33·3	—
June.....	59·1	55·7	79	6·0	37	E. & S.	49·9	40·0	—
July	58·5	55·6	83	7·0	44	W. & N.W.	52·0	44·9	—
August...	58·8	55·2	78	6·0	43	N. & N.E.	49·0	41·4	—
Sept. ...	57·2	54·9	86	6·0	44	Variable	48·1	40·2	—
October	55·0	53·0	87	7·0	49	E., N.E. & S.E.	47·2	39·6	—
Nov.....	48·7	46·8	86	6·0	49	Variable	37·8	29·2	2
Dec.	42·9	41·4	87	7·0	47	N. & E.	35·3	20·4	9
Year...	51·8	49·4	83	6	47	W., S.W.	43·1	20·4	19

MONTHLY MEANS FOR THE TEN YEARS 1901–10.

MONTHS.	Temperature of Air.				Humidity.	Hours of Sunshine.	Cloud.	Rain.	
	Maximum.	Minimum.	Mean daily range.	Mean.				Days it fell.	Inches.
January	47·8	38·8	9·0	43·3	85	69·5	8	16	3·03
February	47·4	37·8	9·6	42·6	83	96·0	6	14	2·57
March	50·3	39·1	11·2	44·7	79	143·7	6	16	2·98
April	54·2	41·9	12·3	48·1	74	182·3	6	14	2·32
May	59·3	46·9	12·4	53·1	73	231·8	6	14	1·88
June	63·1	51·7	11·4	57·4	75	211·2	6	12	2·00
July	68·0	55·3	12·7	61·7	74	235·1	6	12	2·15
August	67·5	55·2	12·3	61.4	74	215·5	6	14	2·49
September	64·1	52·5	11·6	58·3	78	165·2	6	12	1·98
October	58·9	48·6	10·3	53·8	82	108·5	7	20	4·22
November	52·1	42·2	9·9	47·2	85	85·1	6	14	2·78
December	48·9	40·4	8·5	44·7	86	54·1	7	18	4·13
Year	56·8	45·9	10·9	51·4	79	1798·0	6·3	176	32·53

DIRECTION OF WIND, FOR 1920.

MONTHS.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
January	3	1	2	—	4	8	12	1	—
February	4	2	3	1	4	2	9	1	3
March	4	1	1	—	8	2	6	5	4
April	2	—	—	2	5	8	5	6	2
May	1	4	1	4	3	9	5	3	1
June	1	—	9	3	7	3	5	2	—
July	2	—	1	2	3	5	9	9	—
August	8	4	4	—	2	2	7	3	1
September	6	3	4	2	—	3	5	4	3
October	2	5	11	5	2	3	1	1	1
November	5	1	6	4	2	3	2	3	4
December	10	2	5	2	2	3	4	3	—
Year	48	23	47	25	42	51	70	41	19

METEOROLOGICAL ABSTRACT, 1920.

Highest Shade Temperature	73·9
Lowest Shade Temperature	25·3
Mean Maximum Temperature	57·4
Mean Minimum Temperature	47·4
Mean Temperature	52·4
Mean Range of Temperature	10·0
Total Rainfall	33·59
Hours of Bright Sunshine	1595
Sunny Days	308
Mean Humidity, percentage of possible ...	83
Mean Ozone	47