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BOROUGH OF TORQUAY.



ANNUAL REPORT

OF THE

Medical Officer of Health

FOR THE YEAR 1921,

BY

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

TOGETHER WITH SUMMARY OF

Reports of the Sanitary Inspectors

AND

Meteorological Observer.

INDEX.

	Page
INTRODUCTION	3
STAFF	4
STATISTICAL SUMMARY	5
POPULATION AND PHYSICAL FEATURES	6
CLIMATE	7
VITAL STATISTICS—	
Death Rate	8
Birth Rate	10
Infant Mortality	11
MATERNITY AND CHILD WELFARE	14
HOSPITALS AND NURSING ARRANGEMENTS	17—19
INFECTIOUS DISEASES	18—21
BACTERIOLOGICAL EXAMINATIONS	19
AMBULANCE FACILITIES	20
SMALL POX AND VACCINATION	20
SCARLET FEVER	21
DIPHTHERIA	22
TUBERCULOSIS	22
CANCER	23
VENEREAL DISEASE	23
WATER SUPPLY	23
SEWERAGE	24
SLAUGHTER HOUSES	26
DAIRIES, COWSHEDS AND MILKSHOPS	27
SUMMARY OF SANITARY INSPECTIONS	28
PORT SANITARY WORK	29
HOUSING	30
TABLES—	
1. Vital Statistics of Area during 1921, etc.	33
2. Cases Notified during 1921	34
3. Causes of, and Ages at Death during 1921	35
4. Infant Mortality during 1921	37
METEOROLOGICAL REPORT	41
METEOROLOGICAL ABSTRACT 1921	54

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

LADIES AND GENTLEMEN,

I have the honour to present to you my Annual Report on the Sanitary circumstances of the Borough and the Health of the inhabitants during the year 1921.

It has been suggested by the Ministry of Health that Reports of a full and detailed character (Survey Reports), shall be submitted at intervals of five years. In other years, reports of a simpler character (Ordinary Reports), will only be required. That for the year 1921 is to be one of the latter. However, considering the fact that Torquay is a Health and Holiday Resort, and that intending visitors are constantly asking for copies of the Medical Officer of Health's Report, I considered it necessary to give somewhat more fully descriptions of our Sanitary circumstances and physical and climatic conditions.

I have to thank my colleagues and members of the Sanitary department, for their assistance and hearty co-operation.

I have also to express my appreciation of the cordial support afforded to me by the Council, and especially the Members of the Sanitary Committee.

I am, Ladies and Gentlemen,

Your obedient servant,

THOMAS DUNLOP.

PUBLIC HEALTH STAFF.

Medical Officer of Health and School Medical Officer :

THOMAS DUNLOP, M.B., C.M., D.P.H. (Camb.)

Deputy M.O.H. and Assistant S.M.O. :

P. ALEXANDER McCALLUM, M.B., CH.B., D.P.H. (Camb.)

Sanitary Inspectors :

CHAS. MACMAHON, Cert. San. Inst.,

GEORGE E. BODY, Cert. San. Inst.

(Meat and Food Inspector ; Meteorological Observer)

GEO. J. LOVELESS, Cert. San. Inst.

Assistant Sanitary Inspector :

NORMAN S. TUCKER, Cert. San. Inst.

Health Visitor :

MISS K. M. MILBURN, C.M.B.

Confidential Clerk :

MISS K. TAYLOR.

Tel. No. 421.

BOROUGH OF TORQUAY.

Area of the Borough, 3,996 acres.

Assessable value, £204,188.

Population—Census (1911), 38,772 ;

„ „ (1921), 39,432.

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

Density of population, 8 persons per acre.

Corrected death rate, 1921, 13·4 per 1,000. Average for previous five years, 16·9 per 1,000.

Birth rate, 13·7 per 1,000. Average for previous five years, 14·2 per 1,000.

Infantile mortality, 1921, 81. Average for previous five years, 65.

Death rate from zymotic diseases, ·35 per 1,000.

Mean annual temperature, 54·3.

Hours of bright sunshine recorded, 2016.

Total rainfall, 20·8 inches.

BOROUGH OF TORQUAY.

POPULATION, CENSUS, 1921.

During the whole intercensal period much difficulty has been experienced in arriving at an estimate of the population. Since 1915 an estimated population has been furnished by the Registrar General based on food ration cards, etc. This must, however, have been fallacious, as his estimate for 1920 was 34,703, while the actual census figures were 39,432. As stated in last year's report the 1911 census population was 38,772, which included 2,149 sailors on board H.M. Ships in the bay, giving a civilian population of 36,623. Thus the true intercensal increase is 2,809.

The Borough is formed of the civil parishes of St. Mary-Church and Tormoham. The area is 3,906 acres. It is divided into nine wards; I am not yet able to ascertain the ward populations.

PUBLIC INSTITUTIONS.

A list of public institutions in the various wards was given in last year's report.

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 accommodation 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 temperature, life under such condltions 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 resumé of the climatic conditions may be of interest:—

	1916	1917	1918	1919	1920	1921
Highest Maximum Temperature ..	79·7	77·3	78·1	80·4	73·9	85·8
Lowest Maximum ..	27·0	24·9	24·6	25·9	25·3	29·1
Mean Maximum ..	56·8	55·5	57·8	56·7	57·4	59·9
Mean Minimum ..	46·2	44·9	47·1	45·3	47·4	48·6
Mean of Maximum and Minimum ..	57·5	50·2	52·5	51·0	52·4	54·3
Difference from Average ..	+0·3	+1·1	+1·2	-2·6	+1·1	+3·4
Number of Days on which Rain fell ..	194	173	212	178	189	120
Total fall in Inches ..	41·53	25·5	29·9	30·08	33·59	20·8
Number of Hours bright Sunshine ..	1742	1716	1856	1860·3	1595	2016

MEDICAL BATHS.

The Corporation possess an up-to-date installation of Medical Baths, where all the best known varieties of treatment can be obtained. All douches can be administered with either sea water or fresh water at the requisite temperatures.

There is also an excellent sea water Swimming Bath, 90ft. x 30ft., the water being kept at a suitable temperature.

VITAL STATISTICS.

DEATH RATE.—The total deaths registered during 1921 was 536, of whom 74 visitors were transferable to other districts, whilst the deaths of 69 residents dying outside the Borough, have to be added. The net total is therefore 532, of whom 250 were males and 282 females.

The death rate is equal to 13·4 per 1,000 per annum, against 14·7 in 1920. The average for the past 10 years was 15·5.

The death rate for England and Wales in 1921 was 12·1 per 1000, and that for the 148 smaller towns, 11·3.

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. The Registrar General supplied a factor ·8730, by which the Torquay rate had to be multiplied. This gives us a rate corrected for age and sex distribution equal to 11·7 per 1,000 against that of England and Wales of 12·1 per 1,000.

Of the 532 deaths :—

	Percentage of Total Deaths.
44 were under 1 year of age	equals 8·3
7 were 1 year and under 2 years	1·3
4 were 2 years and under 5 years	·8
8 were 5 years and under 15 years	1·5
24 were 15 years and under 25 years	4·5
59 were 25 years and under 45 years	11·1
113 were 45 years and under 65 years	21·1
273 were 65 years and over	51·4
532 at all ages.	100·

It will thus be seen that 273 or 51·4 per cent. were persons aged 65 and upwards.

There were 20 inquests; and 6 uncertified deaths were recorded.

WARD DISTRIBUTION OF DEATHS.

Ward.	Deaths at all ages.	Under 1 year.
Torre	65	7
Waldon	37	3
Upton	78	7
Ellacombe ..	100	4
Strand	36	5
Torwood	46	5
St. Mary-Church ..	59	5
Babbacombe ..	71	6
Chelston	39	2
Totals ..	531	44

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	..	..	..	0
Whooping Cough	..	..	..	4
Scarlet Fever	..	..	..	0
Diphtheria	..	..	..	0
Fevers	{	Typhus	0
		Enteric	1
		Continued	0
Diarrhœa	..	..	..	9
				14	

The zymotic death-rate is therefore equal to '35 per 1,000 against '31 per 1,000 in 1920.

BIRTH RATE.

The total births registered in the Borough was 542—males 237—females 245, of these 38 or 7% were illegitimate, against 40 or 6·2% in 1920.

	Males	Females	Illegitimate
First Quarter	.. 71	70	14
Second Quarter	.. 66	63	11
Third Quarter	.. 83	65	8
Fourth Quarter	.. 77	47	5
Totals	297	245	38

WARD DISTRIBUTION.

	Males.	Females.	Illegitimate.
Torre	26	19	4
Waldon	23	16	5
Upton	47	40	3
Ellacombe .	58	51	3
Strand	31	29	5
Torwood	19	16	5
St. Mary-Church ..	48	32	4
Babbacombe ..	29	31	7
Chelston	16	11	2
Totals ..	297	245	38

The birth rate for the Borough is equal to 13·7 per 1000 per annum, against 18·6 in 1920. The average for the past 10 years was 13·8 per 1,000. The rate for England and Wales, 22·4, and ten year average, 21·4.

INFANT MORTALITY.

The number of deaths of children under one year of age was 44. This means an infantile mortality rate of 81 per 1,000 births as compared with a rate of 53 per 1,000 births in the previous year. The rate for England and Wales during 1921 was 83 per 1,000 births, and that for the 148 smaller towns (population 20,000 to 50,000), was 84. The Death Rate of Legitimate Children alone was 67·5 per 1,000 legitimate births, and that of Illegitimate Children alone was 263·2 per 1,000 illegitimate births.

The following tables are of interest; (*a*), showing the births, infantile deaths and infantile mortality for a series of six years compared with those of the country as a whole, and (*b*), showing the principal causes of deaths among infants during the same years :—

TABLE A.

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
1921	542	44	81	83

TABLE B.

Causes	1921	1920	1919	1918	1917	1916	1915
Measles	—	—	—	3	—	1	3
Whooping Cough ..	3	—	—	1	—	2	1
Diarrhoea	8	4	1	2	2	2	3
Tubercular Diseases	1	—	—	—	2	—	1
Bronchitis	6	2	5	7	2	2	8
Pneumonia	4	2	1	3	4	5	6
Premature Birth	13	16	10	6	8	18	10
Congenital Defects							
Accidents	2	1	—	—	—	—	—
All other causes ..	7	9	8	9	8	13	9
TOTALS	44	34	25	31	26	43	41

After showing an almost continued decrease since 1915, it is regrettable that the infantile mortality rate shows a sharp rise to 81 per 1,000 births. The reason for this is largely the marked increase in the number of deaths from diarrhoea (18·2%), and from respiratory diseases (22·7%). A hot, dry summer such as that of

the past year is always associated with an increase in diarrhoeal diseases and the figures for the country generally show a similar rise. The severe Whooping Cough epidemic which raged in the spring was accompanied by many cases of severe Bronchitis and Broncho-pneumonia, and it will be seen that these diseases accounted for almost one-third of the total deaths (29·5%).

The deaths from premature birth or congenital defects maintain their high level (29·5%), from year to year, but we trust that the increased interest now being taken in the problems of ante-natal life will very soon bear fruit.

36 Still Births were registered during the year, but are not included in the above figures. The loss of potential life is doubtless much greater than even these figures suggest, but cannot be accurately gauged owing to the absence of systematic notification of all miscarriages and still births. There can be no doubt that Venereal Diseases are responsible for a large proportion of these cases, and the effective control and adequate treatment of such diseases are matters of paramount importance. In most populous areas, centres for the free treatment of venereal diseases on modern lines are now well established, and it is hoped that a Centre of this kind will soon be established in Torquay.

Full 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 37.

Birth-rate, Death-rate, and Analysis of Mortality during the Year 1921.

(Provisional figures. Populations as enumerated in 1921 have been used for the purposes 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.	Diarrhoea and Enteritis (under 2 years).	Total Deaths under One Year.	Deaths in Public Institutions.	Certified Causes of Death.	Uncertified Causes of Death.	Inquest Cases.	
England and Wales	22.4	12.1	0.02	0.00	0.06	0.03	0.12	0.12	0.23	0.44	15.5	83	25.5	92.5	6.4	1.1	
96 Great Towns, including London (1911 Census Populations exceeding 50,000)	23.3	12.3	0.01	0.00	0.08	0.04	0.13	0.15	0.23	0.40	19.8	87	33.2	92.5	6.8	0.7	
148 smaller Towns (1911 Census Populations 20,000—50,000)	22.7	11.3	0.01	0.00	0.5	0.03	0.11	0.11	0.26	0.35	15.6	84	17.7	93.5	5.1	1.4	
London	22.3	12.4	0.01	0.00	0.05	0.06	0.12	0.25	0.23	0.42	21.3	80	49.2	91.6	8.2	0.2	
Torquay	13.7	13.5	0.02	0.00	0.00	0.00	0.10	0.00	0.15	0.28	16.6	81	14.6	99.0	3.7	0.9	

MATERNITY AND CHILD WELFARE.

The Devon County Council is the supervising authority under the Midwives Acts. There are seven Midwives registered as practising in the Borough. 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 are 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.

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.

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.

About 10 days after the birth the Health Visitor calls and obtains such particulars as are necessary to enable her to judge as to whether the infant will be properly looked after. Where considered necessary she gives helpful advice to the mother regarding the feeding and general management of her infant. The visits are repeated at increasing intervals until the child goes to school and comes under the supervision of the School Medical Department.

She also reports upon sanitary defects, investigates cases of stillbirths, and assists the Medical Officer in the work of the Infant Welfare Centres.

During the past year this work has been very ably and enthusiastically carried out by Miss K. M. Milburn, and the following table gives a complete record of what has been done.

HEALTH VISITOR'S REPORT FOR 1921.

	No. of Cases Visited.	Re-Visits.
Infants under 1 year ..	526	2113
Children, 1 to 5 years ..	214	705
Still-Births ..	35	—
Ante-natal Cases ..	31	25
Ophthalmia Neonatorum ..	6	8
Tuberculosis ..	6	42
Special Visits ..	62	—
Total Number of Visits and Re-visits ..		3559.

Insanitary conditions were reported in 30 instances, and attendances at Infant Welfare Centres numbered 100.

The great value of this work is self evident, and that the mothers really appreciate the Health Visitor's assistance is evident from the fact that only 16 families objected to her visits.

The above figures are all based on the actual notified births during 1921, viz. :—507, and not on the registrar's total of 542.

PROVISION OF MILK TO NECESSITOUS MOTHERS AND INFANTS

Applications for a free supply of milk under the Milk (Mothers and Children) Order, 1919, are in all cases made direct to the Medical Officer of Health. Care is taken to supply only necessitous cases in which lack of a proper supply of milk is likely to prove prejudicial to health. The great majority of the cases were personally investigated by the Health Visitor. There is no doubt such assistance is of inestimable value in saving the lives of infants in times of stress.

During 1921, 48 families were helped in this way, and 3191 pints of milk were provided at a total cost of £58 15s. 3½d.

INFANT WELFARE CENTRES.

The whole of this work is controlled by the Infant Welfare Sub-Committee of the Town Council, and the following three Centres have now been established :—

- (1). Ellacombe Centre meets in the Primitive Methodist Hall, Market Street, on Fridays, from 2.30 to 4.30 p.m.
- (2). Market Street Centre meets as above on Mondays from 2.30 to 4.30 p.m.
- (3). St. Marychurch and Babbacombe Centre meets in the Furrugh Cross Congregational Hall on Thursdays from 2.30 to 4.30 p.m.

Each centre is managed by a Committee of Voluntary Workers which meets at regular intervals, and makes all arrangements for carrying on the work. During the year these ladies have worked with the greatest energy and enthusiasm, and their efforts have been much appreciated by both mothers and Council alike.

Tea is provided at the nominal charge of 1½d. per head, and the programmes include health talks, instruction in home nursing and the care of infants, and demonstrations of sewing, cutting out, etc.

The Assistant Medical Officer of Health attends each Centre and is responsible for the medical arrangements. He is always assisted by either the Health Visitor, the Matron of the Q.V.J.N. Institution, or one of the St. Marychurch District Nurses.

Some idea of the general scope of the work may be gathered from the following combined figures :—

Number of Sessions (3 Centres)	..	..	143
Attendances, under 12 months	..	..	1523
do. of children, 1—5 years	..	..	1504
Total Attendances	..	..	3027
No. of New Cases included in above	..	..	157
Ante-Natal Cases	..	..	10
Average Attendance of Children per Session	..	..	21
Voluntary Workers' Visits to Homes	..	..	396

When investigating each birth, the Health Visitor made a special note of all the cases she considered likely to benefit from attendance at a Welfare Centre, and decided that 363, out of the 507 children born, really ought to attend. Investigation shows that, up to the time of writing, 115 of these children have actually been brought to the Centres. This is 31·7% of the "probable" attenders. Children born during the later months of 1921 will continue to arrive during the coming year, so that the above percentage is likely to be considerably increased.

All the babies are seen by the Medical Officer at each visit, any defects are pointed out, and instructions given to the mothers on how and when to feed their infants. It is a little difficult to get some mothers to understand that the primary object of the centres is preventive, but as far as possible babies requiring treatment beyond the regulations of diet are referred to their private Doctors.

The work seems to meet a felt want, and the mothers appreciate the opportunity to discuss things with the doctor or nurse. It is interesting to note the large number of mothers who return with subsequent babies.

Only 10 expectant mothers attended for advice, and of these 6 were referred to their own doctors for treatment. With the greater privacy of the new premises in Market Street, it is hoped that greater advantage will be taken of the facilities provided for ante-natal work.

SUMMARY OF NURSING ARRANGEMENTS.

Professional Nursing in the Home. (a) General—Nurses of the Queen Victoria Nursing Association and St. Marychurch District Nursing Association are available for this purpose, independantly of the Local Authority. (b) For Infectious Disease—The Town Council utilises the services of the Q.V.J.N.A. for nursing cases of Ophthalmia Neonatorum and Measles when necessary, on the instructions of the Medical Officer of Health. A retaining fee of £10 per annum is paid and 1s. per visit.

Midwives. The Council makes a subsidy to the Jubilee Nursing Association of $\frac{1}{4}$ the deficit of the cost of their midwives, less the amount obtained in fees. This is in addition to the grant received by them direct from the Ministry of Health. Similarly to the St. Marychurch Nursing Association a subsidy is given of $\frac{3}{4}$ of the deficit between cost of midwife and fees obtained. The reason for this is that no grant is received direct by that Association from the Government.

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.

No cases occurred during the year.

OPHTHALMIA NEONOTORUM.

Three cases were notified, and three other suspicious cases were discovered later by the Health Visitor. 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.

A satisfactory result has been obtained in each of the above cases.

Ophthalmia Neonatorum	Cases			Vision un- impaired	Vision impaired	Total blindness	Death
	Noti- fied	Treated					
		At Home	In Hospital				
3	3	—	3	—	—	—	

NON-NOTIFIABLE INFECTIOUS DISEASES.

Whooping Cough, which was prevalent during the latter part of 1920, assumed epidemic proportions in the Spring of 1921. Four deaths were recorded, all under 2 years of age. Many of the cases were followed by broncho-pneumonia.

Slight outbreaks of Measles and Chickenpox occurred from time to time, but no deaths were recorded. One infantile death was due to Influenza.

INFANTILE DIARRHŒA.

Altogether there were 9 deaths recorded from this disease, and of these 8 were children under one year of age. There was, however, no real epidemic of Summer Diarrhœa such as has occurred in previous hot, dry summers. In July leaflets were distributed warning mothers of the dangers of this disease and suggesting measures for its prevention.

DISEASES AND ACCIDENTS OF PARTURITION.

Four deaths were attributed to this cause as compared with two last year.

NOTIFIABLE DISEASES DURING THE YEAR 1921.

Disease				Total Cases Notified	Cases Admitted to Hospital	Total Deaths
Diphtheria	..	..	..	10	8	0
Scarlet Fever	..	..	..	14	14	0
Enteric Fever (including para-Typhoid)				2	0	1
Puerperal Fever	..	..	..	0	0	0
Pneumonia	..	..	..	9	0	22
Tuberculosis—						
(a) Pulmonary	M.	..	..	53	11	22
	F.	..	..	56	28	23
	Totals	..	..	109	39	45
(b) Non-Pulmonary	M.	..	..	2	0	7
	F.	..	..	4	0	3
	Totals	..	..	6	0	10

HOSPITALS AND OTHER INSTITUTIONS AVAILABLE FOR THE DISTRICT.

Hospitals provided or subsidised by the Local Authority or by the County Council—(1) Tuberculosis, "Whitecliffe." This is the old Western Hospital, taken over by the County Council. It accommodates 45 patients. (2) There is no special Maternity Hospital, but the Authorities of the Torbay Hospital will admit urgent cases requiring operative treatment. (3) Rosehill Children's Hospital. The Maternity and Child Welfare Committee subsidise one bed and if vacant can obtain the use of a second, at a cost of one guinea per week. This Hospital is situated on the Lower Warberry Road, and accommodates 30 patients.

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.

The financial statement for the year April 1st, 1920, to March 31st, 1921, shows that the cost was £1404 16s. 2d., of which sum £200 was for repairs, painting, etc. The number of patients under treatment during the period was 46.

During the year 1921, twenty-two cases were treated in the Isolation Hospital, consisting of eight Diphtheria and fourteen Scarlet. Also one case of Poliomyelitis, and one of Encephalitis were treated in the Torbay Hospital.

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.

The cost of the Cockington Sanatorium, which was empty during the year was £100, consisting of rent, rates, etc.

BACTERIOLOGICAL EXAMINATION.

Specimens from suspected cases are examined 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 the following :—

Diphtheria	..	57	{	Positive	..	..	..	5
				Negative	..	..	..	52
Enteric Fever	..	5		Negative	..	..	..	5
Tubercular Sputum		47	examinations	{	Positive	..	..	10
					Negative	..	..	37
Total	..	109						

In the Laboratory attached to the Health Department we have examined 64 specimens from inflamed or suspicious throats of children attending the elementary schools. Some 43 specimens for other pathological conditions were examined.

AMBULANCE FACILITIES.

After the war the Mayor's Committee, who had run two motor ambulances for the removal of wounded soldiers, presented them to the Town—(1) A covered Ford Ambulance, and (2) A Daimler Ambulance. The former has been utilised for the removal of infectious cases, and the latter for medical and surgical.

The Corporation as far as possible endeavour to make the service efficient, and the arrangements are as follows:—The Ambulance is garaged at the New Town Hall, and during office hours, *i.e.*, 9.30 a.m. to 5 p.m. on weekdays, and 9.30 a.m. to 12 noon on Saturdays, can be obtained by communicating with the Medical Officer of Health at his office, Telephone 421. At other times it will be necessary to send a message direct to Driver Beckett, 139 Windsor Road, Ellacombe. Two trained members of the St. John Ambulance Brigade always accompany the Ambulance as attendants.

LOCAL AND ADOPTIVE ACTS IN FORCE IN THE AREA.

Practically all the Adoptive Acts and Regulations have been put in force by the Council, and where necessary bye-laws framed.

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 average results of primary vaccination for the years from 1900 to 1919.

Years.	Total births registered	Successfully vaccinated	Insusceptible of Vaccination	Had Small-pox	Number of Certificates from Conscientious Objectors	Died Unvaccinated	Postponed by Medical Certificate	Removed to other districts the Vaccination Officer of which has been appraised	Removed Address unknown	Percentage successfully Vaccinated	Excluding those who died Unvaccinated. Percentage
10 Years' Average 1900—1909	578	468	1	—	39	4	6	3	10	82	87
10 Years' Average 1910—1919	522	219	1	—	235	33	9	3	15	41	44
1920	686	271	2	—	340	35	11	2	20	40	41

From the above it will be seen that about 49 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.

ENTERIC FEVER.

Two cases were notified. One was a local isolated case, the source of infection could not be ascertained. The other, a visitor, whose history shows conclusively that the disease was contracted prior to her coming to the town. A case of a visitor brought from outside for nursing in the Torbay Hospital, and notified the previous year, died at the beginning of 1921.

SCARLET FEVER.

Fourteen cases were notified, of which eight occurred in December. The town until this date showed a remarkable

freedom from the disease, although the disease was rife in London and other parts of the country. All these cases were removed to Hospital.

DIPHTHERIA.

Ten cases were notified, and, similarly to scarlet fever, five occurred in December. Of the ten cases, eight, or eighty per cent., were removed to hospital. Free supplies of antitoxin can be obtained from Messrs. Cocks and Dunsford, Mr. Quant's, Torwood Street, and Mr. Cutmore, Fore Street, St. Marychurch.

TUBERCULOSIS.

During the year 109 notifications of Pulmonary Tuberculosis were received and six for other forms of Tuberculosis.

Fourty-four deaths were registered from Pulmonary Tuberculosis among Torquay residents, besides which there were 30 deaths among visitors, whose deaths were transferred to other sanitary areas.

The death-rate is equal to 1.1 per 1,000 per annum.

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	—	—	4	12	6	—	22
	Females	—	—	7	9	6	1	23
Totals		—	—	11	21	12	1	45

Besides the above there were three deaths from Tubercular Meningitis, and eight other forms of Tubercular disease.

Notifications of this disease are forwarded weekly to the Devon County Council, and there is close co-operation between the County Tuberculosis Officer and myself in dealing with Tubercular cases.

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

The Devon County Council are now utilising "Whitecliffe" as a hospital for the reception of cases of tuberculosis, which are not suitable for treatment at the County Sanatorium. Of the

thirty visitor deaths, fourteen were in this institution, whilst ten more were in St. Barnabas' Home, which receives cases of this disease.

CANCER, MALIGNANT DISEASE.

There were 56 deaths registered from the above cause, 16 less than in 1920. 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	1	—	3	5	9	6	3	27
Females	—	1	4	4	6	7	7	29
Totals	1	1	7	9	15	13	10	56

The death-rate from cancer is equal to 1·4 per 1000 per annum.

VENEREAL DISEASE.

The treatment of this disease is supervised by the County Council. In my last report I stated that an Army hut had been purchased by them and a site provided by the Town Council for its erection, but owing to the "flood of economy," the Government have banned its erection. The sections of the hut are here and probably when they come to be utilised will make admirable fire wood. In the meantime the numerous cases that make application for treatment, have where circumstances permit to be sent to Exeter. Many however, cannot manage to attend at the hours the clinic are held, and I find from these that private practitioners either refuse treatment or lay down conditions which are irksome. In fact all the arrangements for treatment are most unsatisfactory.

WATER SUPPLY.

The Town supply is derived from upland surface gathering ground on the borders of Dartmoor, about 15 miles from Torquay. The area of the gathering ground is 2,241 acres, and belongs to the Corporation. All inhabited houses and farms have been cleared from the area thus preventing any menace to the purity of the water. The water is also, as a further precaution, passed through mechanical filters. In this way all suspended material is removed, it is clarified and the appearance considerably improved.

The total amount supplied was 662,000,000 gallons, or 31·6 gallons per head for a population of 58,369. This includes Newton Abbot and a few villages on the line of the mains.

Until this year the supply has been ample for all purposes, but owing to the exceptionally low rainfall, half the amount usually registered, the water in storage towards the end of the year became so low, that in view of possible continued drought, it became a question of urgent importance how best to conserve the supply. Fortunately sufficient rain has since fallen to cause the springs to break and remove all anxiety for the future. The average total rainfall over the whole watershed in 1921 was 22 inches, compared with 44 inches in 1922.

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 peaty 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	·07
Free Ammonia	trace
Organic Ammonia	·012
Oxygen absorbed in 4 hours	·075

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.

DRAINAGE OF HOUSES.

Most of the houses, especially villa residences and large boarding houses, have the best modern sanitary arrangements, including water closets of good type with waste water preventors. In every case where possible the drains are connected with the sewers, except where the levels prevent, necessitating the provision of cesspools.

COLLECTION AND DISPOSAL OF HOUSE REFUSE.

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.

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, thus co-ordinating the two offices.

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*, who possesses the C.M.B. Certificate.

I regret to have to record the death of Mr. P. C. Steventon, who died in October. Besides his duties as Inspector, he was the Port Sanitary Officer and Borough Meteorological Observer.

The Staff of the Sanitary Department is as follows :—

Mr. C. MacMahon, Cert. San. Inst., the Statutory Inspector.

Mr. G. Body, Cert. San. Inst., Meat and Food Inspector, Port Sanitary Officer and Meteorological Observer.

Mr. Loveless, Cert. San. Inst.

Mr. N. Tucker, Cert. San. Inst.

Miss K. Taylor, Clerk in Medical Officer's Office.

INSPECTION OF PLACES WHERE FOOD IS PREPARED.

This work is under Mr. Body's supervision, and his powers have been somewhat strengthened by the Ministry of Health granting us an Order including Fried Fish and Chip Potato Shops among offensive trades. This has enabled byelaws to be framed dealing with the registration and condition of the premises used for preparation and storage of these foods. Such other places used for preparation of cooked meats, making of sausages, etc., are inspected in the daily routine.

In the Autumn, the Ministry of Health issued the report of a Committee appointed by them to consider the difficulties encountered in the slaughtering and inspection of meat. The report was of a very comprehensive character and many useful recommendations were suggested. These should prove of considerable value if given effect to by future legislation.

SLAUGHTER HOUSES.

The total number is six. One is registered and the other five licensed. They are visited almost daily, and on the whole are kept in a satisfactory condition. Visits are also regularly paid to butcher's shops, market, railway siding and fish quay.

The following summarises the amount of food destroyed.

Seized .. .. .	..	— tons	6 cwts.	2 qrs.	27 lbs.
Voluntarily Surrendered ..	..	5 "	7 "	2 "	19 "
Surrendered after Inspection	..	2 "	8 "	0 "	20½ "
Total		8 tons	2 cwts.	2 qrs.	10½ lbs.

DISINFECTION.

Free disinfection is carried out in all cases of notifiable infectious disease, and also after removal or death of consumptive patients; Rooms are first fumigated with formaline and then the bedding is removed to the disinfecting station at the Isolation Hospital, and subjected to steam sterilisation. The disinfectant is a "Thresh" Current Steam Disinfectant.

DAIRIES, COWSHEDS AND MILK SHOPS.

There are 79 registered dairymen and cowkeepers in the Borough. These dairies and cowsheds are visited twice a year to see that the necessary limewashing, etc., has been carried out. Most of the town dairies receive supplies of milk from farms situated outside the Borough. These we inspect each year, 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 dairyman'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.

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:—Nine samples of butter and cream were taken, and on analysis were found genuine. Thirty-seven samples of

milk were analysed, and seven were not genuine. Prosecutions were instituted in five cases, two were dismissed, while fines were inflicted in the other three.

SANITARY INSPECTIONS OF THE DISTRICTS.

SUMMARY OF SANITARY INSPECTORS' WORK.

Houses inspected	347
Houses visited	759
Dirty premises limewashed and cleaned	187
Rooms disinfected	138
Cases of overcrowding abated	6
Defective floors repaired	88
Water supply laid direct from main to tap over sink	26
Defective yards re-paved	94
Lighted and ventilated rooms	28
R. W. P.'s and gutters repaired	48
Nuisances from keeping fowls and animals	15
Ashbins provided for house refuse	51
Roofs repaired	70
Smoke tests applied	433
Water " "	113
New sets of house drains laid	79
Defective house drains repaired	55
Intercepting traps with fresh-air inlets fixed	50
Old "Mason's" and other old type of traps abolished	23
Inspection chamber to drains built	92
Drains ventilated at head of system	60
New sanitary conveniences with water supply fixed	69
Soil pipes fixed outside buildings and ventilated	10
Iron and brick traps removed and earthenware gullies fixed	113
Waste pipes from baths, lavatories and sinks trapped	35
Choked drains cleared	67
Defective w.c. cisterns repaired or new provided	83
W.C.'s repaired and cleansed	48
Glazed sinks fixed	42
Handrails fixed	43
MISCELLANEOUS.	
Offensive accumulations removed	89
Nuisances from stables and manure pits abated	18
Miscellaneous repairs	120
Re-visits in connection with above work	1542
Legal notices	48
Preliminary notices served	167
Letters and communications in connection with the work of the department	709
Verbal notices	55
Written complaints	153
Verbal complaints	103
Slaughter-houses visited	970
Butchers' shops	1407
Butchers' carts	93
Fish Quay	62
Railway siding	52
Market	50
Other shops	106
Carcases inspected	10,774

Weight of food destroyed	18,210 lbs.
Dairies and cowsheds visited	165
Number of vessels inspected	29
Houses closed as unfit for human habitation	1
Workshops visited	338
Workshop notices	25
Houses repaired	292
Sanitary certificates granted	32
Visits to piggeries	27
" stables	56
" dairies and cowsheds	199
Disinfectants supplied	1500
Public Elementary Schools—visits	75

COMMON LODGING HOUSES.

There are now only two common lodging houses in the district. 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. As they have now been included among offensive trades they will be subject to byelaws governing them.

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.

The School Annual Report deals with the Medical Inspection of the children.

FACTORY AND WORKSHOPS.

During the year the routine inspection of workshops was carried out, and 338 were visited. Twenty-five notices were sent to abate nuisances or remedy defects.

Among the above are included 38 bakehouses, of which 5 are registered as underground bakehouses. They are regularly inspected and are usually found in a cleanly condition.

PORT SANITARY WORK.

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

During the year 29 vessels of various classes have been inspected, 19 Foreign Sailing, 4 Coastwise Sailing, and the

remaining 6 being Coastwise Steamers. As a number of vessels trade here at regular intervals, it is only necessary to examine them periodically.

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.

HOUSING.

(a). Total houses erected during the year and passed for habitation, 109.

(b). As part of Municipal Housing Scheme, 86.

After the erection of the first 86 houses on the Municipal Estate, no further contracts were allowed to be entered into. It cannot be considered that these have more than touched the fringe of the housing problem. Their occupation has probably relieved some overcrowding, but in my opinion houses in this area will not supply the accommodation of many persons now living in dilapidated houses, who cannot afford the rent required. Neither will it help in dealing with the insanitary areas of Pimlico and Temperance Street, concerning which representations have been made, as they are much too far away from the centres in question. Towards the end of the year the Ministry of Health consented to our asking for tenders for the erection of 40 concrete cottages on the housing estate, provided they can be erected at a cost of £500 each. It is so be hoped that an early start will be made.

It is greatly to be regretted that the scheme to provide cottages in the quarry at the top of Stentiford's Hill was not persevered with, as a start could then have been made with the closure of dilapidated houses and ultimate clearance of the above unsanitary areas. The continued occupation of these houses is a blot on the reputation of the town.

I. UNFIT DWELLING HOUSES.

(1) Total number of dwelling houses inspected for housing defects (under Public Health or Housing Acts)	299
(2) Number of houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910 ..	48
(3) Number of houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation..	6
(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	1

Under present conditions inspection of houses is attended with much difficulty. Many houses are found in such a bad structural state as to be almost beyond repair, while in others the minimum repairs necessary mean entirely new roofs, new window frames and sashes, new external plastering, gutters, etc. The cost is frequently beyond the means of the owner, and even if the repairs were carried out, the position of the property, its age and general structure are such that condemnation can only be retarded for a year or two. One then has to consider if it is justifiable to put owners to such expense with this end in view.

Every effort is made to get repairs carried out, and notwithstanding the difficulties encountered a considerable amount of satisfactory work has been accomplished.

Before the preparation of notices it is well to carefully consider under what powers we are to act, and which section will serve our purpose best. Under the Public Health Act certain defects such as broken stoves and grates, broken sash cords to windows, no rails to stairs, doors off hinges, internal plaster defective, which accumulatively render the houses not in all respects reasonably fit for human habitation, cannot be dealt with, consequently resource must be made to the Housing and Town Planning Acts. If we use Section 15 of the 1909 Act, the owner can give notice of his intention to close; if under Section 17, on non compliance with the notice, the Local Authority may close, and in both instances it is the Local Authority that has to see that the closing becomes effective. In many cases this is just what the owner desires, viz., to get rid of the tenants, do up the premises, and sell at an enhanced price. If the Authority should attempt to obtain an eviction order, they are almost certain to find that, in view of the great shortage of houses, the Magistrates will not grant it, or defer it. The only other method of effecting repairs is under Section 28 of the Housing and Town Planning Act, 1919, here if the notice is not complied with, and if the work can be done without reconstruction, the Authority may at the expiration of notice, do the work required to be done, and recover the cost. This is not so simple as it looks, especially in a small municipality. Here one would suggest that it should be done by the Borough Surveyor, but owing to the amount of other work he has this is not feasible, hence one must have resort to outside builders. To be fair a specification must be prepared, and tenders asked for. When one has got so far a further notice is sent to the owner that on a certain date we propose to enter and do the work. On the receipt of this we frequently find that the

owner makes a start and the builders who tender find that their time has been spent to no purpose, with the result that they refuse to tender on subsequent occasions. Occasionally the repairs require a very large expenditure, and if the owner is a poor person recovery of the cost can only be obtained in mere pittance spread over a long period.

II. REMEDY OF DEFECTS WITHOUT SERVICE OF FORMAL NOTICE.

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers..	247
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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	41
(2) Number of dwelling-houses which were rendered fit—	
(a) by owners	33
(b) by Local Authority in default of owner ..	1
(3) Number of dwelling-houses in respect of which closing orders became operative in pursuance of declarations of owners of intention to close	1

b. Proceedings under Public Health Acts:—

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	11
(2) Number of dwelling-houses in which defects were remedied—	
(a) by owners	11
(b) by Local Authority in default of owner ..	—

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	8
(2) Number of dwelling-houses in respect of which Closing Orders were made	8
(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	—

VITAL STATISTICS OF WHOLE DISTRICT DURING 1921 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.				
		Un-corrected Number.	Nett.		Number.	Rate.	of Non-Residents registered in the District.	of Residents not registered in the District.	Under 1 year of age		At all ages.	
			Number	Rate.					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
1921	39432	533	542	13.7	516	13.6	73	69	44	81	532	13.4

TABLE III. CAUSES OF, AND AGES AT DEATH DURING THE YEAR 1921. (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) Uncertified	527 5	44 —	7 —	4 —	8 —	24 —	59 —	112 1	269 4	78 —
Enteric Fever ..	1	—	—	—	—	1	—	—	—	1
Small-pox ..	—	—	—	—	—	—	—	—	—	—
Measles ..	—	—	—	—	—	—	—	—	—	—
Scarlet Fever ..	—	—	—	—	—	—	—	—	—	—
Whooping-cough ..	4	3	1	—	—	—	—	—	—	—
Diphtheria & croup	—	—	—	—	—	—	—	—	—	—
Influenza ..	6	1	—	—	—	1	—	3	1	—
Erysipelas ..	—	—	—	—	—	—	—	—	—	—
Phthisis (Pulmonary Tuberculosis) ..	45	—	—	—	—	11	21	12	1	32
Tuberculous Meningitis ..	3	—	1	—	1	1	—	—	—	1
Other tuberculous diseases ..	8	1	—	—	—	2	3	2	—	2
Cancer, malignant disease ..	56	—	—	—	—	1	7	25	23	7
Rheumatic Fever ..	2	—	—	—	—	1	—	—	1	1
Meningitis (See note d) ..	—	—	—	—	—	—	—	—	—	—
Organic Heart Disease ..	68	—	—	—	—	1	4	17	46	1
Bronchitis ..	34	6	2	1	—	—	—	3	22	1
Pneumonia (all forms) ..	22	4	—	—	—	1	2	6	9	1
Other diseases of respiratory organs	8	—	—	—	1	—	—	1	6	—
Diarrhoea and Enteritis (See note e)	9	8	1	—	—	—	—	—	—	—
Appendicitis and Typhlitis ..	3	—	—	—	1	—	1	1	—	3
Cirrhosis of liver ..	1	—	—	—	—	—	—	1	—	1
Alcoholism ..	—	—	—	—	—	—	—	—	—	—
Nephritis & Bright's disease ..	19	—	—	1	—	—	—	7	11	2
Puerperal fever ..	—	—	—	—	—	—	—	—	—	—
Other accidents and diseases of Pregnancy and Parturition ..	4	—	—	—	—	—	4	—	—	1
Congenital Debility and Malformation, including Premature Birth ..	13	13	—	—	—	—	—	—	—	—
Violent Deaths, excluding Suicide ..	11	2	1	2	1	1	2	—	2	4
Suicides ..	4	—	—	—	—	—	4	—	—	—
Other Defined Diseases ..	211	6	1	—	4	3	11	35	151	20
Diseases ill-defined or unknown ..	—	—	—	—	—	—	—	—	—	—
	532	44	7	4	8	24	59	113	237	78

SUB-ENTRIES included in above figures

(a) Cerebro-spinal Meningitis ..	—	—	—	—	—	—	—	—	—	—
(a) Poliomyelitis ..	2	—	—	—	—	1	—	—	1	—
Encephalitis Lethargica ..	1	—	—	—	—	—	—	1	—	1

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 Diarrhoea and Enteritis at all ages. (In the "Short List" deaths from Diarrhoea 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 1921.

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 ..	5	5	3	4	17	13	7	4	3	44
	Uncertified ..	.	.	.	.	.	.	.	.	.	.
Diseases	Small-pox ..	.	.	.	.	—	.	.	.	.	—
	Chicken-pox ..	.	.	.	.	—	.	.	.	.	—
	Measles ..	.	.	.	.	—	.	.	.	.	—
	Scarlet Fever ..	.	.	.	.	—	.	.	.	.	—
	Whooping Cough ..	.	.	.	1	1	1	.	1	.	3
	Diphtheria and Croup ..	.	.	.	.	—	.	.	.	.	—
	Erysipelas ..	.	.	.	.	—	.	.	.	.	—
	Tuberculosis Meningitis ..	.	.	.	.	—	.	.	.	.	—
	Abdominal Tuberculosis ..	.	.	.	.	—	.	.	.	.	—
	Other Tuberculosis	.	.	.	.	—	.	.	.	.	—
	Meningitis (not Tuberculous)	.	.	.	.	—	.	.	.	.	—
	Convulsions ..	.	.	.	.	—	.	1	.	.	1
	Laryngitis ..	.	.	.	.	—	.	.	.	.	—
	Bronchitis ..	.	.	.	1	1	2	1	1	1	6
	Pneumonia (all forms) ..	.	.	.	.	—	1	3	1	.	5
	Diarrhoea ..	.	.	1	.	1	3	.	1	.	5
	Enteritis ..	.	.	.	.	—	1	1	.	1	3
	Gastritis ..	.	.	.	.	—	.	1	.	.	1
	Syphilis ..	.	.	1	.	1	1	.	.	.	2
	Rickets ..	.	.	.	.	—	.	.	.	.	—
Suffocation, overlying	2	.	.	.	2	.	.	.	.	2	
Injury at Birth ..	.	.	.	.	—	.	.	.	.	—
Atelectasis ..	.	.	.	.	—	.	.	.	.	—
Congenital Malformations ..	.	.	.	.	—	.	.	.	.	—
Premature Birth ..	2	5	1	2	10	3	.	.	.	13	
Debility, Atrophy, and Marasmus	.	.	.	.	—	.	.	.	.	—
Other Causes ..	1	.	.	.	1	.	.	.	1	2	
		5	5	3	4	17	13	7	4	3	44

Nett Births in the year	{	Legitimate	504
		Illegitimate	38
Nett Deaths in the year	{	Legitimate	34
		Illegitimate	10



BOROUGH OF TORQUAY.



Meteorological Report

FOR THE YEAR 1921.

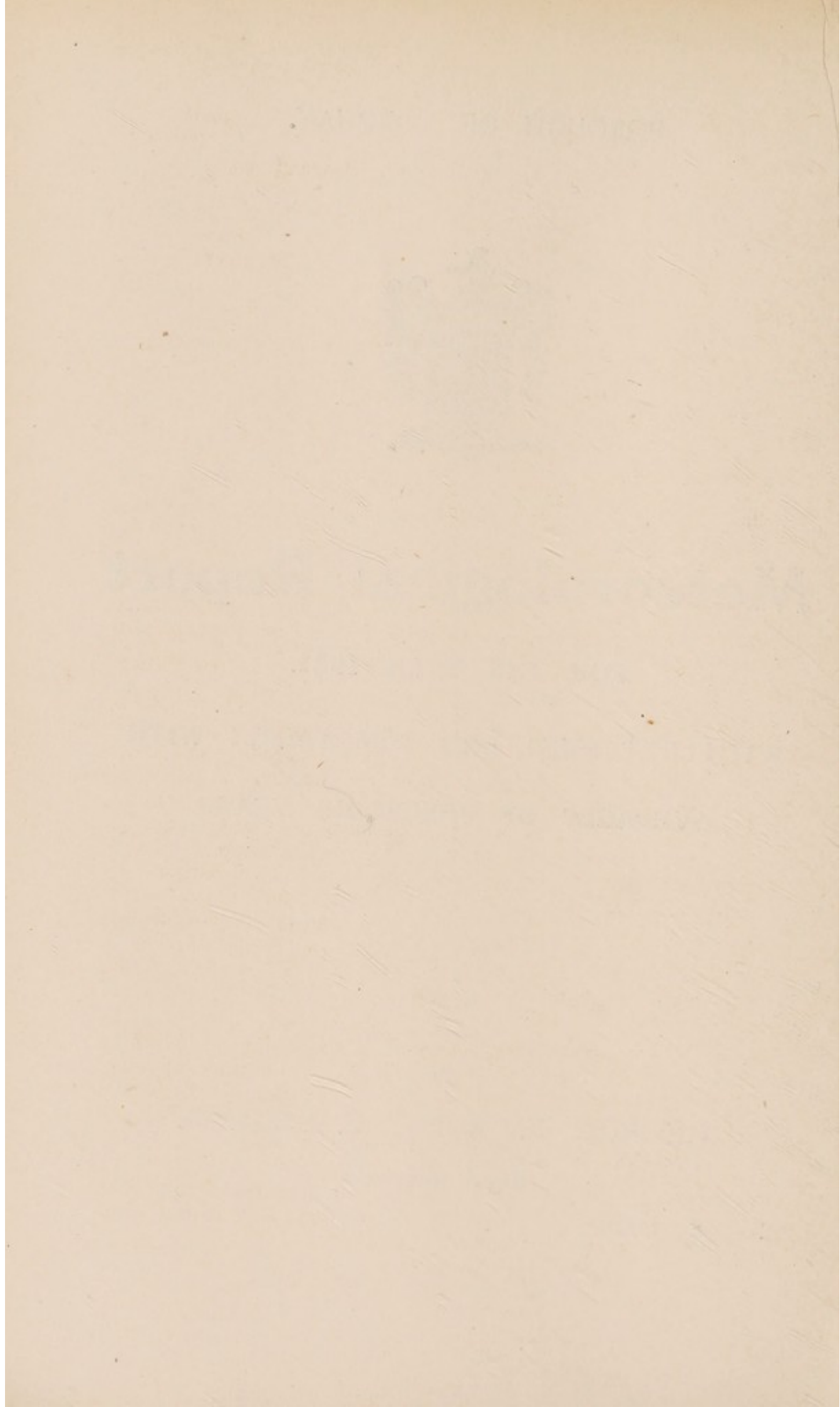
WITH EXTREMES AND COMPARISON WITH
AVERAGES OF PRECEDING YEARS.

BY

GEORGE E. BODY, F. R. Met. Soc.

Borough Meteorologist.

February 1st, 1922.



BOROUGH OBSERVATORY,
PRINCESS PIER,
TORQUAY.

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

GENTLEMEN,

I beg to submit the following Meteorological Report for the year 1921.

The observations up to early in October were carried out by the late Mr. P. C. Steventon, to whom credit is due for the efficient manner in which the various records have been kept.

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. 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 forwarded to the "Western Morning News and Mercury" and "Torbay Express" every morning. The Weekly Report besides being sent to the Meteorological Office are also forwarded to the "Torbay News" and "Torquay Directory" as well as several private individuals.

The "Torquay Times" has kindly undertaken to publish a weekly review of the type of weather experienced from Thursday to the following Wednesday.

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.

No additions or alterations have been made to the various instruments at the Observatory, but for the past two months an old type of Richard's Self-Recording Thermometer has been made use of for the purpose of comparison. Considering its age it is fairly accurate, but a more up-to-date instrument is desirable. This type of Self-Recording Thermometer depends upon the lengthening and shortening of a metal plate and as the temperature varies, it acts on a crank lever connected to an arm carrying a pen which writes the curve of temperature on the chart on the clock cylinder.

The modern type of Thermograph has a bimetallic coil which acts as a thermometer and controls the motion of the pen arm. The latter is fitted with gate suspension, so that the pressure of the pen on the paper may be delicately adjusted.

These Self-Recording instruments, such as the Aneroidograph, which for the past six months has been exposed to view in the window of the Observatory, has been a source of considerable interest to visitors who are able to see in a graphic manner the rise and fall of atmospheric pressure.

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, newspaper articles, etc., concerning the climate here have also been replied to during the year.

Considerably over a thousand Telegrams, Reports and communications have been despatched.

I am, Gentlemen,

Yours obediently,

GEORGE E. BODY.

OBSERVATORY AND INSTRUMENTS.

The Observatory is situated in North Latitude $50^{\circ}28$, and West Longitude, $3^{\circ}31$, 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 22 years, for Temperature and Rainfall of 45 years, and for Pressure of 37 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 **Barograph** 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.

BRIGHT SUNSHINE.

The total of bright sunshine registered for 1921 was 2016 hours 12 minutes, or 231 hours 12 minutes above the average. This amount has only once been exceeded, viz. : in 1899, when 2039 hours were recorded, or 22 hours, 48 minutes more than in 1921.

It is many years since over 300 hours were recorded in one month. In July, 1911, 382 hours 42 minutes were registered, compared with 303 hours 54 minutes in June, 1921. The next highest recorded was in June, 1918, when 285 hours 18 minutes were registered. The greatest amount in one day in 1921 was 15 hours on June 15th, followed by 14 hours 54 minutes on July 11th, and 14 hours 24 minutes on May 21st.

During such dismal months as November and December, 54 hours 24 minutes in the former, and 58 hours 30 minutes in the latter month, were recorded, and on the 7th November no less than 6 hours 42 minutes of bright sunshine was recorded.

TEMPERATURE.

The mean Temperature for the year is 54.3°F. Every month except August had a temperature above the average, whilst October was no less than 5.8°F. above the average.

The period of bright sunshine and equability of temperature during the winter months is of far greater importance to a health resort like Torquay, than a high temperature and an excess of sunshine during the few summer months of the year. This is a fact that appears to be lost sight of by those who seek change and a mild climate during the winter months. It cannot be too frequently repeated that Torquay although warmer in the winter months, is definitely cooler during the summer months. The temperature during the hot months is usually 5 to 10 degrees cooler than London and a temperature of 80°F. or above is rare.

It will be observed from the Tables of Mean Temperatures that the Mean Range during January was only 7.3°F. February, 8.7°F. and November, 6.4°F., and the lowest temperature recorded was only 29.1°F., which occurred on November 13th, whilst the Mean of the Maximum and Minimum Temperatures were 48.9°F. in January, 44.6°F. in February, 49.4°F. in November, and 47.4°F. in December. These compare very favourably with NICE, where the average mean temperature for fifty years are 46.4°F. in January, 47.5°F. in February, 52.7°F. in November, and 47.3°F. in December.

A fall of snow in Torquay is very rare, and may be classed as a meteorological phenomena. On one occasion only did snow fall during the year and this was so slight as to be unobserved except by those who were out early in the morning,

Frost of any severity is also a stranger to the town. This is borne out, apart from our instrumental readings, by the luxurious growth of various sub-tropical plants and shrubs. Mr. Walters, F.R.H.S., the Corporation Superintendent of Parks, informs me that "Such is the vigour of growth of some of these, that *Dracena Australie* has attained the height of 24 feet and the *New Zealand Flax*, *Phormium Tenax* is 40 feet in circumference. *Cliaanthus Puniceus* (The Parrot's Beak), make fine plants and flowers profusely. The New Zealand Laurel *Griselinia littoralis* and its variegated form do equally well. *Hohera Populnea*, which is 14 feet high, is glorious when in bloom. *Olearias Pittosporums*, and many other New Zealanders are quite at home. Of Australian plants which appear to enjoy the congenial climate, mention may be made of the *Eucalyptus* in many varieties, including the new *Eucalyptus Beauchampiana*, *Callistemons*, *Myoporum*, *Acacias*, *Mehlenbeckia*, whilst *Grevillea rosmarinifolia* blooms practically all the winter. Other sub-tropical plants which do well are *Fureraca longaeva*, and the *Senecios* from Mexico, *Erngium pandanifolium* from Monte Video, *Eryobotrya's*, *Panlonia*, *Imperialis* and *Clerodebdrum trichotomum*-from Japan, *Carpentaria Californica* from Sierra Nevada, *Benthamia Fragifera* from Nepaul, and *Garrya Eleptica* from California. *Camillias* and varieties of the Himalaya Rhododendrons grow freely and flower well. *Habrothamnus Elegans* is in bloom practically throughout the year. *Plumbago Capensis* with its pale blue flowers is a beautiful sight when in bloom.

Of Palms, *Phoenix Canarensis* and *Chamaeropsis Excelsa* make very fine specimens. *Carex Japonica* variegated and the Maiden hair fern *Adiantum Capillies Veneris* and many others grow freely in the open, and Marguerites are at all seasons in bloom.

All these plants are growing within 50 to 100 feet of the sea."

Fog is also a rare visitor to the town, and on only one occasion was it of such density as to obscure objects beyond a range of 550 yards. Even during the dull spell of November 24th to November 30th, when a considerable part of the country was fogbound, Torquay was free from the fog fiend. Sea mists occasionally trouble us but as a rule they are of short duration and do not invade the town.

The dryness of the air is another characteristic feature of Torquay's climate. This is substantiated by the percentage of humidity as estimated by Glaisher's Tables. This shows a mean of 78% for the year, and a mean of 79% for the 10 years, 1911—1920. This should be sufficient to remove the fallacy that Torquay has a damp and relaxing climate.

RAINFALL.

The town, like the country generally, is considerably below the average as regards rainfall, the total for the year being 20.80 inches or 13.14 inches below the average of 45 years.

Although our average rainfall is about 13% above the mean for the country, heavy downpours more than a persistent drizzle is the prevailing feature, and by some strange freak of nature or geographical configuration of the land, the heaviest falls occur during the night, and whether in support of the old "Saw," "Rain before seven, fine before eleven," such invariably proves correct. For it is exceptional to have rain fall for the whole of the day, and even during unsettled weather, if wet in the morning, it clears at noon, or if bright in the morning and it rains in the afternoon, it clears about seven o'clock, and a fine bright evening prevails.

The prevailing wind for the year was West, followed by East and North. The West is fairly constant during the first and last quarters of the year, the East wind being more prevalent during the two middle quarters. This no doubt accounts for the mildness of our winters and our cool summers.

BAROMETRIC PRESSURE

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

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1921.	<i>Mean</i> of Month.	Difference from <i>Mean</i> of Month.	Highest Reading.	Date.	Lowest Reading.	Date.	Extreme Range of Pressure.
January ...	30·053	- 0·022	30·548	21st	29·232	31st	1·316
February ...	30·279	+ 0·294	30·854	27th	29·535	1st	1·319
March	30·090	+ 0·162	30·383	24th	29·335	29th	1·048
April	30·143	+ 0·220	30·439	7th	29·366	17th	1·073
May	29·978	- 0·006	30·338	21st	29·446	8th	0·892
June.....	30·193	+ 0·171	30·423	16th	29·911	8th	0·512
July	30·079	+ 0·074	30·380	21st	29·565	29th	0·815
August.....	29·966	- 0·013	30·204	31st	29·651	11th	0·553
September .	30·131	+ 0·092	30·419	22nd	29·856	10th	0·563
October ...	30·193	+ 0·240	30·591	28th	29·770	2nd	0·821
November ..	29·829	- 0·115	30·589	9th	29·030	20th	1·559
December ..	30·144	+ 0·207	30·450	12th	29·551	1st	0·899
Year	30·898	+ 0·108	30·468	Feb. 27th	29·520	Nov. 20th	0·947

SHADE TEMPERATURES

Taken at 9 a.m. (Local Time)

AT CARY GREEN.

1921.	Maximum <i>mean.</i>	Minimum <i>mean.</i>	Max. & Min. <i>mean.</i>	Difference from Average.	Range <i>mean.</i>	Highest.	Date.	Lowest.	Date.
	•	•	•	•	•	•		•	
Jan. ...	52·6	45·3	48·9	+6·4	7·3	58·5	9th	32·0	14th
Feb. ...	48·9	40·2	44·6	+2·4	8·7	55·4	16th	33·9	10th
March.	53·4	41·5	47·5	+3·3	11·9	62·8	24th	34·0	8th
April..	57·2	42·5	49·9	+1·7	14·7	69·9	30th	33·9	16th
May ...	61·6	48·5	55·1	+1·6	13·1	75·0	25th	38·8	5th
June...	69·0	53·8	61·4	+2·9	15·2	76·3	15th	44·8	1st
July ...	73·2	59·9	66·5	+4·8	13·3	85·8	19th	52·5	5th
Aug. ...	67·7	55·5	61·6	-0·1	12·2	77·1	19th	48·2	30th
Sept. ...	67·1	54·9	61·0	+2·8	12·2	74·2	9th	44·1	16th
Oct. ...	64·5	52·0	58·3	+5·8	12·5	70·3	5th	53·1	23rd
Nov....	52·6	46·2	49·4	+6·4	6·4	67·0	3rd	29·1	13th
Dec. ...	51·9	43·0	47·4	+3·4	8·9	61·7	9th	32·0	24th
Year	59·9	48·6	54·3	+3·4	11·3	85·8	July 19th	29·1	Nov. 13th

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Campbell-Stokes' Standard Instrument.

1921.	Total Bright Sunshine.	Difference from Average.	Greatest Amount in one day.	Date.	Sunless Days.
	Hours.	Hours.	Hours.		
January	43·1	- 20·1	4·8	14th	9
February	85·6	+ 0·7	9·6	26th	10
March	132·2	- 3·3 ⁹	11·3	30th	5
April	265·2	+ 80·6	13·3	24th	0
May	245·2	+ 18·6	14·4	21st	1
June.....	303·9	+ 79·7	15·0	15th	2
July.....	289·3	+ 53·5	14·9	11th	1
August.....	186·0	- 28·8	13·1	6th	3
September....	179·1	+ 14·7	11·5	6th	3
October	173·9	+ 60·8	9·4	24th	2
November....	54·4	- 25·9	6·7	7th	9
December	58·3	+ 0·7	6·4	4th	7
Year.....	2016·2	231·4	15·0	15th June	52

RAINFALL

(In inches and hundredths)

Taken at CARY GREEN STATION.

1921.	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 ...	3·69	+0·44	20	15	0·67	10th
February ...	0·27	-2·66	3	2	0·20	25th
March	2·13	-0·63	22	12	0·52	14th
April	0·73	+1·45	8	5	0·39	16th
May	2·21	+0·33	14	10	0·61	7th
June.....	0·10	-1·94	1	1	0·10	25th
July	0·40	-1·86	7	2	0·20	28th
August.....	3·11	+0·38	17	12	0·88	21st
September	1·19	-1·04	7	3	0·78	11th
October ...	0·84	-3·12	10	8	0·23	23rd
November	4·6	+1·15	6	10	1·10	26th
December	1·53	-2·74	5	12	0·30	22nd
Year.....	20·80	-13·14	120	92	1·10	Nov. 26th

HUMIDITY, CLOUD, OZONE, AND WIND.

1921.	HUMIDITY.			CLOUD Cloud mean 1 to 10.	OZONE. Percentage of possible. Mean Daily Amount.	WIND. Prevailing Quarters.	GRASS TEMPERATURES.		
	Dry Bulb mean.	Wet Bulb mean.	Relative Humidity.				Mean.	Lowest.	No. of days at or below 30°
January	47.9	46.4	88	7	67	W. & N.	42.2	27.1	1
February	43.3	41.3	84	7	35	E., N. & N.E.	35.8	29.2	6
March ...	48.2	45.4	80	6	70	W. & N.	37.0	27.9	3
April ...	48.2	44.8	73	3	64	E. & N.	37.5	28.5	4
May	54.9	50.3	72	5	65	W. & E.	44.5	33.9	0
June.....	61.0	54.9	66	4	61	E. & N.	50.6	40.5	0
July	65.9	60.8	72	4	53	E., W. & S.E.	57.3	49.5	0
August...	60.6	57.2	80	6	56	W., N. & N.W.	50.9	43.9	0
Sept. ...	59.6	56.0	78	6	65	E., N. & N.W.	51.6	41.7	0
October	57.7	55.4	85	6	39	N.W., E. & W.	49.8	34.9	0
Nov.....	4.93	46.5	79	3	46	S.E., N.E. & N.W.	44.8	30.7	0
Dec.	46.9	45.0	87	7	52	W., N. & N.W.	40.9	29.9	1
Year...	53.6	47.7	78	5	57	W., E. & N.	45.2	34.8	15

MONTHLY MEANS FOR THE TEN YEARS 1911-21.

MONTHS.	TEMPERATURE OF AIR.				Humidity.	Hours of Sunshine.	Cloud.	RAIN.	
	Maximum.	Minimum.	Mean daily range.	Mean.				Days it fell.	Inches.
January	47.3	36.8	10.5	43.1	87	57.8	7	17	3.37
February	48.4	39.4	9.0	43.9	85	73.1	7	16	3.33
March	50.3	39.5	10.8	45.0	82	121.2	5	18	5.38
April	54.9	42.6	12.3	48.8	76	189.8	5	13	1.65
May	61.5	49.0	12.5	55.3	74	220.6	5	10	1.60
June.....	64.8	52.2	12.6	58.5	73	231.5	5	12	1.66
July	68.0	55.6	12.4	61.9	74	223.3	6	13	2.07
August.....	68.3	55.2	13.1	62.3	76	200.7	5	14	2.99
September.....	64.4	52.9	11.5	58.4	80	160.4	5	12	2.27
October.....	58.2	48.1	10.1	53.2	83	113.0	6	18	3.29
November	54.1	42.1	12.0	47.1	83	76.5	6	15	3.03
December	49.6	40.8	8.8	45.2	86	66.1	6	21	5.71
Year.....	57.5	46.2	11.3	51.9	79	1734	5.6	179	36.35

DIRECTION OF WIND, FOR 1921.

MONTHS.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
January	4	—	—	1	2	3	16	3	2
February	7	4	9	2	2	1	1	1	1
March	4	1	—	3	4	3	13	2	1
April	8	3	12	1	—	—	2	3	1
May	6	2	7	3	1	1	9	2	—
June.....	6	2	13	1	—	—	3	4	1
July	2	—	13	4	4	2	4	2	—
August.....	6	—	3	1	1	2	12	5	1
September	7	2	9	—	1	1	5	4	1
October	2	1	7	2	—	2	6	11	—
November	7	11	6	13	—	6	8	9	—
December	10	4	2	—	2	3	23	5	—
Year.....	69	30	81	31	17	24	102	51	8

METEOROLOGICAL ABSTRACT, 1921.

Highest Shade Temperature	...	...	85·8
Lowest Shade Temperature	...	...	29·1
Mean Maximum Temperature	...	...	59·9
Mean Minimum Temperature	...	...	48·6
Mean Temperature	...	...	54·3
Mean Range of Temperature	...	...	10·7
Total Rainfall	...	...	20·80
Hours of Bright Sunshine	...	...	2016·2
Sunny Days	...	...	313
Mean Humidity, percentage of possible	...	...	78
Mean Ozone	...	...	57

