[Report 1938] / Medical Officer of Health, Cork County Borough.

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COUNTY BOROUGH OF CORK

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

AND

PORT MEDICAL OFFICER

FOR THE YEAR 1938

J. C. SAUNDERS, M.D., D.P.H.,
Medical Officer of Health.

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Medical Officer of Health.

CORK:
Guy & Co. Limited, 70 Patrick Street
1939

To the Lord Mayor, Aldermen and Councillors
of the County Borough of Cork.

My Lord Mayor and Gentlemen,

I beg to submit herewith my Annual Report for the year 1938. On the whole, the past year has, from the health point of view, been a most satisfactory one. There has been a marked reduction in the general mortality rate as compared with the previous year, from 17.4 per 1,000 to 14.1. The latter figure is the second lowest ever recorded (the lowest 14.0 occurred in 1923). Infant mortality, too, was greatly reduced, from 103 in 1937 to 76 per 1,000 in 1938. In this connection there has been a very marked reduction in the number of deaths attributed to diarrhoea (33 as compared with 52 in the previous year). Considerable reductions have also been effected in deaths from diphtheria, scarlet fever and the infectious diseases generally. The steady decline in deaths from pulmonary tuberculosis has been maintained ; while in the matter of deaths from surgical tuberculosis, the reduction has been remarkable (from 24 in 1937 to 13 in 1938). The decline in deaths from this condition has been quite pronounced over a number of years. The death rate from the principal epidemic diseases was the lowest of the four county boroughs in the country.

In connection with the supervision of the water supply, I would draw attention to the exceptionally high standard of purity which was maintained throughout the year. The standard aimed at is 100 c.c.'s free from Bacillus Coli. Of the 254 samples submitted to examination, in 251 instances (98.8 per cent.) this standard was maintained.

I have acknowledged in the text the assistance received in connection with matters which do not come within my direct purview.

I have the honour to remain,

Your obedient servant,

J. C. SAUNDERS.

PUBLIC HEALTH STAFF

Medical Officer of Health :
J. C. Saunders, M.D., D.P.H.

Assistant Medical Officer of Health :
Patrick F. Fitzpatrick, M.B., B.Ch., B.A.O., D.P.H.

School Medical Officer :
Annie M. Sullivan, M.B., B.Ch., B.A.O., D.P.H.

Public Analyst.
Daniel J. O'Sullivan, M.Sc., F.I.C.

Chief Veterinary Officer :
S. R. J. Cussen, D.V.S.M., M.R.C.V.S.

Assistant Veterinary Officers : *
C. Lucey, M.R.C.V.S.
Maurice Herlihy, M.R.C.V.S.
Charles B. Adams, M.R.C.V.S.
Joseph P. Daly, M.R.C.V.S.
Edmund O'Donnell, M.R.C.V.S.
John T. Barry, M.R.C.V.S.

Housing Superintendent :
G. A. Byrne, B.E., M.R.San.I., F.I.Hsg.

Sanitary Inspectors :
John O'Brien
Timothy Newman
Thomas F. Murray
Daniel Murphy
James V. Nerney
Miss N. Dunn
Thomas Wall (Temporary).

Tuberculosis Nurse :
Miss L. Lyndon

Maternity and Child Welfare Nurses :
Miss M. Gillespie
Miss H. Neville
Miss H. A. Crowley

School Nurses :
Miss M. Lordan
Miss M. O'Sullivan
Miss J. Twomey

Clerk and Inspector to Port Sanitary Authority :
J. P. Kieran

* These officers were transferred to the Department of Agriculture on 1st Oct., 1938.

CONTENTS.

SUMMARY OF STATISTICS.

Area (in Acres)	2,618
Population (Census 1936)	80,765
Density of Population (persons to the acre)	30.8
Rateable Value	£236,558 18s. 0d.
Sum represented by a Penny Rate	£986
Number of Births	1,708
Birth Rate	21.1
Number of Deaths	1,140
Death Rate	14.1
Maternal Mortality Rate	3.5
Infantile Mortality	75
Zymotic Death Rate	0.6

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Section I.—Physical Features of the Area

The City of Cork is situated on the river Lee, fifteen miles from its mouth in Cork Harbour. On the north bank of the river there is steep rising ground almost prohibiting building development, save in the form of hillside roads and open building of large houses, with the exception of the marked break of the Blackpool valley, very full use of which has been made. Next comes the flat island comprising the centre of the City. This island is almost entirely artificial, and consists of six feet of filled-in material, with ten feet of slob below that and then gravel overlying old red sandstone. Southwards is a gently undulating tract of land about one and a half miles wide enclosed by a range of hills. There is a considerable amount of land liable to flood in the Lee Valley, west of the city, towards Carrigrohane, and the flatness of the islands on which the city is built and the height to which unusual tides ascend being nearly to the crown of the arches of the old bridges, render certain portions of the city itself also liable to flooding.

The geological formation of the city region is simple and clearly marked in its effect on the landscape. There are only two systems visible, both paleozoic rocks, the carboniferous limestone and the older underlying Devonian, representing the old red sandstone. Each of these formations is in two series ; the carboniferous in a crystalline limestone and in a dark shale (with some 10 feet slate) ; the Devonian in the upper old red sandstone (yellowish and reddish) and in the lower, old red sandstone (red and purple). The characteristic aspect of the countryside has been caused by the crinkling of these strata into regular parallel folds. Further the limestone which should have formed the ridge of the anticlines has been denuded or dissolved away, so that the highest ground consists of old red sandstone, and even the lower series of this ; the hollow folds, floored by limestone, have been subsequently protected from further denudation by a covering of boulder clay. In this immediate region there are thus three old red sandstone ridges and two limestone valleys, in the northern of which the city stands under the brow of the northern sandstone ridge. If this sandstone ridge had possessed its original limestone capping, it would probably have been at least 2,000 feet high.

Section II.—Vital Statistics

1.—Population.

According to the provisional figures issued by the Registrar-General in connection with the census of 1936 the present population of the city is 80,765, an increase of 2,301 over that revealed by the previous census taken in 1926. The population at the various census years has been as follows :—

1881	80,124
1891	75,345
1901	76,122
1911	76,673
1926	78,464
1936	80,765

Through the courtesy of the staff of the Registrar-General, it is possible to show the sex and age grouping of the population. This is seen in Table 1.

2.—Births.

According to the Annual Summary of the Registrar-General, the total number of births *registered* in Cork during 1938 was 1,708. The number of live births *notified* to the Public Health Department (in accordance with the provisions of the Notification of Births Act) was 1,696. In addition to this latter figure there were 73 still births notified, bringing the total *notified* births to 1,769 for the year. There is therefore a difference of 12 between the number of registered live births and the number of notified live births, the former being in excess. On the basis of the Registration General's figures the birth-rate for the year was 21.1. The birth-rate in this city has preserved a remarkable steadiness of character over the past fifty-seven years as shown in Table 2. The decimal averages during this period were as follows :—

1881–90	26.2
1891–1900	27.2
1901–10	26.0
1911–20	24.7
1921–30	23.5
1931–36	24.0
1937	22.0
1938	21.1

Table 1.—Population of City divided into age and sex groups (at census of 1936).

Age or Age-group	MALES	FEMALES
Under 1 year	820	888
1 year	809	814
2 years	770	768
3 ,, ...	798	811
4 ,, ...	785	794
5 ,, ...	835	780
6 ,, ...	739	761
7 ,, ...	736	686
8 ,, ...	734	722
9 ,, ...	677	704
10 ,, ...	704	664
11 ,, ...	794	728
12 ,, ...	758	709
13 ,, ...	813	768
14 ,, ...	803	705
15 ,, ...	797	768
16 ,, ...	790	841
17 ,, ...	619	683
18 ,, ...	543	672
19 ,, ...	603	754
20 ,, ...	652	760
21 ,, ...	680	853
22 ,, ...	705	912
23 ,, ...	681	779
24 ,, ...	716	855
25–29 ,, ...	3,122	3,763
30–34 ,, ...	2,723	2,977
35–39 ,, ...	2,567	2,898
40–44 ,, ...	2,138	2,360
45–49 ,, ...	1,973	2,340
50–54 ,, ...	1,907	2,168
55–59 ,, ...	1,724	1,852
60–64 ,, ...	1,408	1,649
65–69 ,, ...	1,142	1,210
70–74 ,, ...	688	1,132
75–79 ,, ...	372	615
80–84 ,, ...	113	237
85–89 ,, ...	37	74
90–94 ,, ...	9	24
95–99 ,, ...	1	2
100 ,, ...	—	—

Table 2.—Birth Rates for Cork City and Éire from 1881 to 1938.

Year	Cork	Éire	Year	Cork	Éire
1881	27.7	24.0	1911	26.0	22.8
1882	28.2	23.8	1912	24.8	22.7
1883	27.0	23.4	1913	24.2	22.6
1884	27.4	23.5	1914	24.3	22.3
1885	25.6	23.1	1915	23.2	22.0
1886	25.4	22.7	1916	22.6	21.1
1887	25.5	22.5	1917	20.2	20.0
1888	25.7	22.1	1918	20.8	19.9
1889	25.2	22.0	1919	23.8	19.9
1890	25.0	21.6	1920	28.3	21.6
1891	26.9	22.3	1921	24.6	19.7
1892	24.6	21.7	1922	24.2	19.5
1893	27.8	22.1	1923	26.2	20.5
1894	27.4	22.1	1924	25.5	21.0
1895	28.9	22.3	1925	23.8	20.8
1896	29.2	22.7	1926	21.5	20.6
1897	27.5	22.5	1927	21.7	20.3
1898	28.7	22.3	1928	21.7	20.1
1899	27.3	22.1	1929	20.9	19.8
1900	25.8	21.8	1930	25.4	19.9
1901	25.6	21.8	1931	24.4	19.4
1902	26.2	22.2	1932	23.0	19.0
1903	27.1	22.1	1933	23.7	19.3
1904	27.4	22.7	1934	24.4	19.5
1905	27.6	22.6	1935	24·8	19·6
1906	27.5	22.8	1336	23·7	19·6
1907	25.6	22.4	1937	22·3	19·1
1908	27.3	22.7	1938	21·1	
1909	26.3	22.9			
1910	25.8	22.8			

3.—Deaths.

The number of deaths recorded during the year was 1,140 equivalent to a rate of 14.1 per 1,000 population. These figures represent crude death rates based on population only. As will be seen from the accompanying table (Table 3) this is the lowest death-rate ever recorded in the history of the city (except that for the year 1923 which was 14.0 per 1,000). The reduction was very marked as compared with the previous year, in which the rate was inflated by a very sharp epidemic of influenza which I commented upon in last year's report and which does not appear to have had a counterpart in any other portion of the country, or for that matter, in any other country. That epidemic had the direct effect of increasing the deaths from influenza and the deaths from respiratory diseases generally (which were considerably over the average) and causing a steep increase in the general death rate for that year. The reduction this year is consequently more pronounced than it would have been in normal circumstances but, nevertheless, it is satisfactory to note that it is well below the average for the immediately preceding years and (as remarked above) has only been improved-on on one previous occasion.

Table 3—Crude Death Rates per 1,000 living for Cork City, Éire and England and Wales, 1881–1938.

Year	Cork	Éire	E. & W.	Year	Cork	Éire	E. & W.
1881	26.8	17.1	18.9	1911	21.2	16.3	14.6
1882	24.7	16.9	19.6	1912	19.1	16.2	13.4
1883	24.9	18.6	19.6	1913	21.5	16.8	13.8
1884	26.7	17.4	19.7	1914	20.2	16.1	14.0
1885	26.2	18.0	19.2	1915	20.7	17.5	15.7
1886	22.1	17.4	19.5	1916	18.2	16.5	14.3
1887	22.4	17.9	19.1	1917	17.4	16.9	14.2
1888	24.1	17.4	18.1	1918	20.4	17.5	17.3
1889	22.3	16.9	18.2	1919	20.2	17.9	14.0
1890	22.2	17.6	19.5	1920	17.5	14.7	12.4
1891	26.9	17.6	20.2				
1892	26.4	18.7	19.0	1921	15.4	14.3	12.1
1893	24.5	17.3	19.2	1922	18.0	14.7	12.8
1894	24.9	17.7	16.6	1923	14.0	14.0	11.6
1895	23.9	17.7	18.7	1924	17.8	15.0	12.2
1896	22.6	15.9	17.1	1925	15.5	14.7	12.2
1897	24.7	17.8	17.4	1926	17.3	14.0	11.6
1898	23.7	17.7	17.5	1927	14.7	14.8	12.3
1899	26.3	17.0	18.2	1928	15.2	14.2	11.7
1900	24.2	19.1	18.2	1929	16.9	14.6	13.4
				1930	17.3	14.1	11.4
1901	23.0	17.1	16.9				
1902	21.5	17.0	16.3				
1903	19.4	17.0	15.5	1931	16.4	14.5	12.3
1904	21.6	17.6	16.3	1932	15.7	14.4	12.0
1905	21.7	16.4	15.3	1933	14.9	13.6	12.3
1906	20.2	16.2	15.5	1934	14.7	12.9	11.8
1907	20.6	17.0	15.1	1935	14.8	13.9	117.
1908	22.2	17.1	14.8	1936	14.7	14.3	12.1
1909	22.1	16.8	14.6	1937	17.4	15.3	12.4
1910	19.3	16.6	13.5	1938	14.1	13.6	11.6

Table 3 shows the death rates per 1,000 persons living in Cork City, Éire and England and Wales for the 58 years ended 1938. The figures set forth do not serve as an estimate of the relative healthiness of the communities compared as they are based on crude death rates. In order to compare such conditions the figures would have to be based on standardised death rates. The Table, however, indicates that the general trend of the death rate is distinctly downward and that there has been a marked annual saving of life in recent years as compared with the earlier period.

Table 4, which is based on Abstract V. of the Registrar-General's Annual Report, is an analysis of the causes of death during the year 1938. It differs from Abstract V. in this respect that the age-groups are more extended and that the causes of death have been sub-divided in some instances. For example, under the headings " other forms of tuberculosis " and " other defined diseases " the various causes of death are more fully set out. This has been made possible by the system of weekly collection of deaths from the district Registrar's registers and the card-index system of filing which has been adopted in connection with it.

This table is compiled from the weekly returns collected by us from the local Registrars and the totals do not correspond with those of the Registrar-General in his Summary, which are not fully corrected.

I have, once more, pleasure in acknowledging the courtesy of the Registrar-General in assisting in the correct compilation of these and other figures during the year 1938.

Table 4.—Analysis of Causes of Death at different age-periods during the year 1938.

Causes of Death	Sex		Un. 1 yr.	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and up
	M.	F.											
Typhoid Fever	1	–	–	–	–	–	–	1	–	–	–	–	–
Whooping Cough	1	2	3	–	–	–	–	–	–	–	–	–	–
Diphtheria	4	3	–	5	2	–	–	–	–	–	–	–	–
Scarlet Fever	2	1	–	2	1	–	–	–	–	–	–	–	–
Cerebro-Spinal Fever	6	2	1	3	2	2	–	–	–	–	–	–	–
Influenza	3	3	–	–	–	1	–	1	1	2	1	–	–
Pulmonary Tuberculosis	61	38	–	–	–	16	27	23	24	6	3	–	–
Other Tuberculosis Diseases :—													
(a) Generalised	2	–	–	–	1	1	–	–	–	–	–	–	–
(b) Meningitis	3	5	–	3	2	–	2	–	1	–	–	–	–
(c) Spinal	–	2	–	–	–	–	–	1	–	–	1	–	–
(d) Other	–	1	–	–	–	–	–	–	–	1	–	–	–
Cancer	63	43	–	–	–	1	–	7	20	38	31	8	1
Diabetes	2	1	–	–	–	–	–	–	1	–	2	–	–
Cerebral Haemorrhage	17	34	–	–	–	–	1	2	3	13	19	11	2
Heart Disease	139	165	–	1	2	2	2	13	35	67	106	68	8
Arterio-Sclerosis	9	5	–	–	–	–	–	–	1	6	5	2	–
Bronchitis	37	41	4	2	–	–	1	2	5	16	41	7	–
Pneumonia :—													
(a) Lobar	25	8	4	–	1	1	3	3	4	8	6	3	–
(b) Broncho	23	21	18	13	3	1	1	1	2	1	3	1	–
Other Respiratory Diseases	7	9	1	2	–	–	1	3	1	3	3	1	1
Gastric and Duodenal Ulcer	10	–	–	–	–	–	1	1	2	–	5	1	–
Diarrhoea and Enteritis (Under 2 years)	23	10	30	3	–	–	–	–	–	–	–	–	–
Appendicitis	6	5	–	2	2	1	2	2	2	–	–	–	–
Cirrhosis of Liver	3	–	–	–	–	–	–	–	1	1	–	1	–
Nephritis	7	20	–	–	–	–	1	5	5	9	4	2	1
Accidents, etc. of Pregnancy	–	6	–	–	–	1	4	1	–	–	–	–	–
Congenital Debility and Premature Birth	19	19	38	–	–	–	–	–	–	–	–	–	–
Suicide	3	–	–	–	–	–	–	–	–	2	1	–	–
Other Violent Deaths	20	4	1	4	–	–	3	2	3	5	5	1	–
Other Defined Diseases :—													
(1) Gastro-Intestinal	7	7	3	–	1	–	1	1	2	5	1	–	–
(2) Convulsions	4	6	8	2	–	–	–	–	–	–	–	–	–
(3) Central Nervous System	6	5	–	–	–	3	1	–	2	3	–	2	–
(4) Anaemia and Blood Diseases	4	9	–	–	1	1	2	1	1	6	1	–	–
(5) Genito-Urinary	5	2	–	–	–	–	1	1	2	1	2	–	–
(6) Marasmus	7	1	6	2	–	–	–	–	–	–	–	–	–
(7) Rheumatic Diseases	5	5	–	–	2	–	–	–	2	3	3	–	–
(8) Meningitis	4	6	5	4	1	–	–	–	–	–	–	–	–
(9) Senile Decay	20	36	–	–	–	–	–	–	–	–	13	25	18
(10) Miscellaneous	14	20	1	2	2	3	4	3	5	7	6	1	–
Ill-Defined or Unknown Causes	4	3	1	–	–	–	–	–	–	3	1	1	1

The principal causes of death in 1938 were (in order of importance) :—

1.	Heart Diseases	304	(308)
2.	Cancer	106	(117)
3.	Pulmonary Tuberculosis	99	(96)
4.	Bronchitis	78	(124)
5.	Senile Decay	56	(81)
6.	Cerebral Haemorrhage	51	(73)
7.	Broncho–Pneumonia	44	(65)
8.	Premature Birth, etc.	38	(50)
9.	Diarrhoea and Enteritis (under 2 years)	33	(52)
10.	Lobar Pneumonia	33	(36)
11.	Violence	28	(24)
12.	Nephritis	27	(35)

The figures in parenthesis denote the corresponding numbers in 1937.

Cardiac Disease. As in previous years this condition accounts for the great bulk of the deaths so far as they can be classed under one definite heading. In preceding reports stress has been laid upon deaths from this cause and allusion made to the fact that probably in a considerable proportion of the cases they cannot be prevented, as they are merely representative of a gradual degenerative process. This feature is again evident in the figures as set out in Table 5 in which it will be seen that (as in previous years) the great bulk of deaths fall within the later age groups.

Table 5.—Analysis of deaths from heart disease 1931–38.

Year	Under 5 years	5/15 years	15/25 years	25/35 years	35/45 years	45/55 years	55/65 years	65/75 years	75 yrs and up	Total
1931	—	6	3	5	18	31	66	87	34	250
1932	—	6	2	9	17	39	50	99	36	258
1933	—	2	4	5	15	31	58	83	42	240
1934	1	3	4	5	20	17	66	103	39	258
1935	2	3	1	7	11	29	63	93	36	245
1936	4	3	3	7	6	32	64	98	48	265
1937	—	5	6	9	16	24	72	112	64	308
1938	1	2	2	2	12	35	67	106	76	304

It will be seen from this table that the feature referred to above relative to the bulking of the deaths in the later age groups has been consistently maintained in each year.

The general trend of deaths from heart disease is shewn in the following table and a comparison made with deaths from cancer and pulmonary tuberculosis.

Table 6.—Trend of mortality from the three principal causes of death in Cork City 1931–1938.

	Condition		
Year	Heart Disease	Cancer	Pulmonary Tuberculosis
1931	250	124	103
1932	258	98	111
1933	240	114	106
1934	258	111	107
1935	245	133	115
1936	265	121	85
1937	308	117	96
1938	304	106	99

Cancer. The number of deaths attributable to this disease recorded by us was 106, as compared with 117 in 1937. The corresponding figures of the Registrar-General are 101 (uncorrected) and 110. The discrepancy observable here, no doubt, is due to a difference in classification, all forms of malignant disease being classed by us under this heading. For comparative purposes the Registrar-General's are the more correct figures. On the basis of 106 deaths the rate was 1.3 per 1,000 of the population, as compared with 1.4 per 1,000 last year.

Phthisis Death Rate. The deaths from pulmonary tuberculosis numbered 99, equivalent to a rate of 1.21 per 1,000 of the population. The corresponding figures for last year were 96 and 1.20 per 1,000 respectively. The figures for the years from 1911 onwards are set out in Section IV.

Infant Mortality. The number of deaths of children under one year of age was 129, which is equivalent to a rate of 75.5 per 1,000 live births. In 1937 the number of deaths was 187 and the rate, 103 per 1,000. The contributory factors are discussed in Section V.

Maternal Mortality. There were 6 deaths from causes under this heading during the year. The maternal mortality rate was 3.5.

Infectious Disease Death Rate. The number of deaths from infectious disease was 47, equivalent to 0.6 per 1,000 of the population. In 1937 the figures were 102 and 1.2 per 1,000 respectively.

Table 7.—Deaths registered during the year 1938, for the County Borough of Cork by Registrars' Districts, with the mortality per 1,000 of the population from all causes and from the Principal Epidemic Diseases.

REGISTRARS' DISTRICTS, Etc.	Infant Mortality per 1,000 Births	Annual Rate per 1,000 Population		Total No. of Deaths.	DEATHS.																								
					Ages at Death.								Deaths from																
													Principal Epidemic Diseases								Tuber-culosis.			Diseases of the Respi-ratory System.					
		From all Causes	From Principal Epidemic Diseases		Under 1 year.	1 year and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 years and upwards.	Typhoid Fever, Typhus, Small Pox, Dysentery	Measles	Scarlet Fever.	Whooping Cough.	Diphtheria.	Diarrhœa and Enteritis under 2 years	Influenza.	Pulmonary	Other Forms.	Cancer.	Pneumonia.	Other.	Violence.	Other Causes.	Inquest Cases.	In Public Institutions	No. of Uncertified Deaths
CITY OF CORK																													
Cork Urban No. 1	59	12·5	0·2	164	16	3	1	2	5	8	41	88	....	....	....	....	1	2	....	7	1	15	6	17	2	113	4	50	4
,, No. 2	83	14·9	0·1	149	18	1	....	3	6	14	59	48	....	....	....	....	....	1	2	11	2	16	6	8	4	99	7	69	5
,, No. 3	94	18·5	1·2	176	29	5	7	6	7	31	43	51	....	....	1	2	1	8	1	21	5	18	17	11	2	92	4	94	4
,, No. 4	76	12·1	0·6	137	13	4	3	....	5	18	44	50	....	....	....	1	2	4	1	11	3	16	6	1	5	87	12	84	..
,, No. 5	74	18·2	0·8	94	10	2	3	4	2	15	24	34	1a	....	1	....	....	2	1	11	3	4	6	5	4	56	6	55	3
,, No. 6	79	14·1	0·8	167	19	2	4	3	5	20	49	65	....	....	1	....	1	7	..	16	1	13	10	17	4	97	4	94	2
,, No. 7	61	12·7	0·6	250	24	4	8	6	5	34	75	94	....	....	....	....	2	9	1	21	1	19	18	18	7	154	10	144	....
Total City of Cork	76	14·1	0·6	1140	129	21	26	24	35	140	335	430	1	....	3	3	7	33	6	98	16	101	69	77	28	698	47	590	18

Note :—This Table is taken from the Annual Summary of the Registrar-General, the returns of which are not fully corrected.

(a) Typhoid fever (see notes in appropriate section.)

Table 8.

Summary of Births and Deaths Registered during the Years 1878 to 1938, inclusive, in the Cork Urban Sanitary District with the number of Deaths from some of the principal causes.

YEAR	POPULATION	Rate per 1,000 persons represented by			NUMBER REGISTERED.																					
						DEATHS.																				
			DEATHS from						NUMBER CAUSED BY																	
		BIRTHS.	All Causes.	Principal Zymotic Diseases.	BIRTHS.	TOTAL NUMBER.	Under 1 year of age.	At 65 years & upwards.	Smallpox.	Measles.	Scarlet Fever.	Typhus.	Whooping Cough.	Diphtheria.	Enteric Fever.	Diarrhœa	Influenza.	Pneumonia.	Tuberculous Disease. Pulmonary	Tuberculous Disease. Other forms.	Cancer.	Violence	Inquest Cases.	No. in Public Institutions.	Number of Uncertified
1878		31.7	27.0	....	2,546	2,464	350	681	....	61	1	....	59	1	....	75	....	....	....	....	....	23	87	863	....
1879		33.5	29.0	3.8	2,707	2,689	319	711	....	49	65	....	19	2	....	48	....	....	....	....	....	30	113	977	....
1880		28.5	30.8	5.9	2,620	2,837	376	624	....	73	204	....	47	13	....	86	....	....	289	....	....	23	99	1026	....
1881		27.7	26.8	4.1	2,167	2,101	271	611	....	36	30	88	61	4	4	87	....	....	237	....	....	14	82	673	....
1882		28.2	24.7	2.3	2,212	1,935	282	490	....	20	8	54	25	5	4	55	....	....	274	....	....	11	77	574	....
1883		27.0	24.9	2.0	2,161	1,993	236	572	....	35	8	46	5	10	11	38	....	....	271	....	....	9	50	646	....
1884		27.4	26.7	2.8	2,199	2,139	253	553	....	41	27	37	45	6	13	51	....	....	292	....	....	12	50	671	....
1885		25.6	26.2	2.3	2,054	2,098	247	614	....	6	48	21	55	5	9	35	....	....	287	....	....	7	36	587	....
1886	80,124	25.4	22.1	2.1	2,037	1,769	225	430	....	12	30	17	5	8	42	50	....	....	263	....	....	11	40	525	....
1887		25.5	22.4	1.8	2,042	1,792	252	490	....	34	1	12	6	2	20	67	....	....	236	....	....	15	43	490	....
1888		25.7	24.1	3.5	2,058	1,934	288	501	....	146	6	21	49	18	9	30	....	....	231	....	....	7	32	499	....
1889		25.2	22.3	1.9	2,023	1,786	253	497	....	1	10	5	88	7	9	32	....	....	278	....	....	8	34	433	....
1890		25.0	22.2	1.0	2,005	1,778	214	571	....	1	5	7	14	8	12	29	....	....	295	....	....	20	43	479	....
1891		26.9	26.9	1.4	2,024	2,025	281	630	....	....	4	5	29	11	17	34	....	....	295	....	....	15	35	557	....
1892		24.6	26.4	1.9	1,978	1,988	297	560	....	40	....	23	42	3	17	17	....	....	303	....	....	17	65	682	..
1893		27.8	24.5	1.3	2,092	1,844	268	517	....	6	2	7	14	3	14	51	....	....	314	....	....	15	58	596	..
1894		27.4	24.9	1.8	2,062	1,874	310	517	....	51	15	2	16	4	13	32	....	....	296	....	....	31	63	609	..
1895	75,345	28.9	23.9	1.6	2,179	1,798	287	494	....	1	3	8	65	2	16	28	....	....	261	....	....	24	68	657	....
1896		29.2	22.6	1.2	2,144	1,706	229	477	....	2	2	7	16	1	24	40	....	....	299	....	....	14	66	619	....
1897		27.5	24.7	2.7	2,073	1,858	316	452	....	75	1	3	59	10	9	47	....	....	260	....	....	22	64	680	....
1898		28.7	23.7	1.9	2,160	1,787	285	493	....	3	1	11	25	4	13	86	....	....	283	....	....	14	75	640	....
1899		27.3	26.3	2.8	2,060	1,980	276	525	....	34	1	6	33	5	8	121	....	....	320	....	....	9	79	749	....
1900		25.8	24.2	1.4	1,944	1,821	235	496	....	9	22	4	1	2	5	59	....	....	281	....	....	7	51	597	....
1901		25.6	23.0	1.9	1,942	1,745	272	440	....	3	17	2	36	11	5	73	....	....	289	....	....	13	54	558	....
1902		26.2	21.5	1.3	2,031	1,667	258	430	....	21	3	....	30	4	5	34	....	....	287	....	....	25	65	564	....
1903		27.1	19.4	1.3	2,066	1,476	232	336	....	2	4	....	44	4	5	37	....	....	279	....	....	19	46	518	....
1904		27.4	21.6	1.0	2,089	1,642	249	408	....	8	1	1	27	6	8	27	....	....	352	....	....	39	75	563	....
1905		27.6	21.7	1.0	2,099	1,650	276	468	....	14	....	2	....	7	8	47	....	103	294	....	....	18	50	605	....
1906	76,122	27.5	20.2	1.7	2,094	1,535	279	406	....	....	....	4	14	11	5	92	....	65	261	81	62	20	54	593	....
1907		25.6	20.6	1.5	1,946	1,570	254	427	....	....	2	6	52	5	4	48	....	77	278	84	77	14	53	609	84
1908		27.3	22.3	1.9	2,084	1,700	281	472	....	13	6	6	13	9	16	79	....	62	245	93	59	12	53	651	83
1909		26.3	22.1	2.3	2,000	1,680	251	457	....	3	15	5	72	11	15	54	....	106	264	78	62	13	75	673	91
1910		25.8	19.3	0.9	1,965	1,469	189	489	....	....	2	3	7	11	13	34	....	71	233	75	73	25	50	630	77
1911		26.0	21.2	1.9	1,992	1,622	277	377	....	17	2	....	28	10	5	78	....	91	252	73	64	28	61	627	81
1912		24.8	19.1	0.7	1,903	1,464	204	412	....	6	5	....	11	6	6	18	....	69	231	71	66	16	56	560	58
1913		24.2	21.5	1.9	1,853	1,645	253	424	....	16	4	2	....	3	6	114	....	110	202	79	95	14	57	643	60
1914		24.3	19.9	2.1	1,897	1,551	226	367	....	9	9	1	64	13	4	67	....	85	231	79	74	15	48	581	60
1915		23.1	20.7	1.5	1,778	1,584	235	418	....	14	12	....	22	14	5	49	....	152	211	72	66	13	50	590	79
1916		22.6	18.2	1.0	1,732	1,394	182	387	....	6	6	1	11	9	6	35	....	97	189	69	66	14	31	564	51
1917		20.2	17.5	0.8	1,552	1,340	169	395	....	....	1	1	14	3	3	34	....	74	202	78	62	24	40	51	60
1918	76,673	20.8	20.5	2.2	1,599	1,570	189	326	....	88	1	1	27	6	8	40	....	247	187	75	61	20	29	596	43
1919		23.8	20.2	1.1	1,825	1,551	183	414	....	1	2	3	7	32	1	40	....	248	156	58	69	19	26	564	50
1920		28.3	17.5	1.9	2,169	1,341	173	355	....	2	5	....	40	60	13	22	....	69	159	46	86	30	32	574	59
1921		24.6	15.4	1.4	1,887	1,181	144	313	....	....	....	1	1	56	4	1	....	40	125	34	75	71	82	482	59
1922		24.2	18.0	1.06	1,853	1,383	173	392	....	38	....	....	....	42	2	....	37	128	176	39	70	39	28	571	67
1923		26.2	14.0	0.7	2,007	1,071	133	332	....	....	....	1	....	23	1	24	4	55	130	32	84	28	38	446	42
1924		25.5	17.8	1.4	1,990	1,386	175	396	....	....	....	....	81	12	2	10	25	146	164	32	94	18	29	568	40
1925		23.8	15.5	0.8	1,827	1,185	136	397	....	....	2	....	2	6	5	45	8	60	134	31	92	25	38	457	32
1926		21.5	17.3	2.4	1,687	1,359	220	361	....	75	6	1	32	18	2	53	13	116	126	46	82	25	27	501	37
1927		21.7	14.7	0.5	1,101	1,152	148	343	....	1	6	....	....	9	2	24	17	63	129	35	78	28	27	449	52
1928		21.7	15.0	0.8	1,767	1,179	135	398	....	....	4	....	8	22	2	28	17	80	109	29	101	27	34	459	34
1929		20.9	16.7	1.4	1,816	1,308	156	404	....	15	3	1	30	33	1	25	12	81	141	17	92	26	44	552	42
1930	78,490	25.4	16.1	1.8	1,998	1,264	155	399	....	22	8	....	5	64	....	37	5	88	117	25	96	22	36	584	25
1931		24.4	16.2	0.5	1,921	1,275	138	388	....	....	....	....	5	24	1	34	34	96	124	46	107	26	24	515	33
1932		23.0	15.8	0.7	1,819	1,239	163	400	....	1	1	....	18	17	1	46	11	82	111	45	98	27	40	607	18
1933		23.7	14.9	0.8	1,852	1,168	165	367	....	1	1	....	3	14	‡2	45	20	60	106	19	104	22	43	557	22
1934		24.4	14.7	1.0	1,922	1,151	139	403	....	3	2	....	16	25	....	36	6	61	107	21	111	21	43	542	13
1935		24.8	14.8	0.9	1,945	1,158	162	386	....	11	....	....	1	7	....	56	5	29	115	29	133	24	29	552	19
1936	80,765	23.8	14.7	0.9	1,921	1,188	154	404	....	7	7	....	5	8	....	41	6	35	85	20	121	32	49	628	10
1937		22.5	17.4	1.2	1,818	1,403	187	493	....	10	10	....	12	17	....	52	55	36	96	24	117	44	47	706	19
1938		21.1	14.1	0.6	1,708	1,140	129	430	....	....	3	....	3	7	*1	33	6	33	99	16	106	28	47	590	18

* Infection incurred outside City area.

‡ Both were resident in Mental Hospital (outside City area) for several years.

Table 9.—Showing the number of deaths from the principal epidemic diseases during the past ten years.

Year	Small Pox	Typhus Fever	Typhoid Fever	Simple Contd. Fever	Scarlatina	Puerperal Fever	Membraneous Croup	Diphtheria	Measles	Diarrhoea	Whooping Cough
1929	—	1	1	—	3	—	1	32	26	24	30
1930	—	—	—	—	6	1	1	64	—	31	4
1931	—	—	1•	—	—	1	—	24	1	34	5
1932	—	—	1•	—	1	1	—	17	1	46	18
1933	—	—	2†	—	—	2	—	14	3	45	3
1934	—	—	—	—	2	5	—	25	11	36	16
1935	—	—	—	—	—	1	—	7	7	56	1
1936	—	—	—	—	7	1	—	8	10	41	5
1937	—	—	—	—	10	—	—	17	—	52	12
1938	—	—	1*	—	3	—	—	7	—	33	3

• Infection in these cases was incurred outside the City area.

† Both these cases had been resident many years in the Mental Hospital (outside City area).

Uncertified Deaths. Eighteen uncertified deaths were recorded during the year as compared with nineteen in 1937.

The following table shows the number of uncertified deaths each year since 1920. (Figures compiled from Annual Report of Registrar-General) :—

1920	....	59	1930	....	25
1921	....	59	1931	....	33
1922	....	67	1932	....	18
1923	....	42	1933	....	22
1924	....	40	1934	....	13
1925	....	32	1935	....	19
1926	....	37	1936	....	11
1927	....	52	1937	....	19
1928	....	34	1938	....	18
1929	....	49			

Deaths from Violence. In the 28 recorded instances the cause of death was as follows :—

Falls	....	....	....	11
Motor Car Accidents		....	....	2
Suicide	....	....	....	4
Drowning	....	....	....	5
Burns	....	....	....	2
Miscellaneous	....	....	....	4

Table 10.—INFANT DEATH RATE.

Year	Births	Deaths under 1 year	Deaths per 1000 Births	Year	Births	Deaths under 1 year	Deaths per 1000 Births
1881	2167	271	124	1911	1992	277	139
1882	2212	283	127	1912	1903	204	107
1883	2161	236	109	1913	1853	253	136
1884	2199	253	110	1914	1897	226	119
1885	2054	247	120	1915	1778	235	132
1886	2037	225	110	1916	1732	182	105
1887	2042	252	123	1917	1552	169	108
1888	2058	288	139	1918	1559	189	118
1889	2023	253	125	1919	1825	183	100
1890	2005	214	106	1920	2169	173	79
1891	2024	281	138	1921	1887	144	76
1892	1978	297	150	1922	1853	173	93
1893	2092	268	132	1923	2007	133	66
1894	2063	310	150	1924	1990	175	87
1895	2179	287	131	1925	1827	136	74
1896	2144	229	106	1926	1687	220	130
1897	2073	316	152	1927	1701	148	87
1898	2160	285	131	1928	1764	135	76
1899	2060	276	133	1929	1816	156	85
1900	1944	235	120	1930	1998	155	77
1901	1942	272	139	1931	1921	138	71
1902	2031	258	127	1932	1819	168	89
1903	2066	232	112	1933	1852	165	89
1904	2089	249	118	1934	1922	139	72
1905	2099	276	131	1935	1945	162	83
1906	2094	279	133	1936	1921	154	80
1907	1946	254	139	1937	1818	187	103
1908	2084	281	134	1938	1708	129	76
1909	2000	251	125				
1910	1965	189	96				

Section III.—Infectious Diseases

The following diseases are compulsorily notifiable in this area :—

Small Pox	Measles
Cholera	Diarrhoea
Typhus	Acute Primary Pneumonia
Typhoid (Enteric Fever)	Acute Influenzal Pneumonia
Simple Continued Fever	Malaria
Scarlatina	Dysentry
Puerperal Fever	Encephalitis Lethargica
Diphtheria	Varicella
Membraneous Croup	Cerebro Spinal Meningitis
Erysipelas	Poliomyelitis

The Infectious Disease (Notification) Act, 1889, was by a resolution of the Corporation, dated 7th February, 1890, adopted in the County Borough.

The Act was subsequently made to apply to the following diseases :—

Name of Disease	Date of Resolution making Act applicable.	Period in force
Cerebro-Spinal Meningitis	13 July, 1900	Till 31st December, 1900
do.	22 February, 1907	Till revoked
Varicella or Chicken Pox	7 March, 1902	do.
Measles	26 May, 1905	do.
Diarrhoea	14 December, 1906	1 July, 1907, to 31 Oct., 1907
do.	12 February, 1909	1 July, 1909, until revoked
Poliomyelitis or Infantile Paralysis	10 November, 1916	Till revoked.

The Infectious Disease (Prevention) Act, 1890, was, by a resolution of the Corporation, dated 11th March, 1892, adopted and put into force in the County Borough.

The Public Health Acts Amendment Acts, 1907, was adopted and put into force by a resolution dated the 24th January, 1908, save as regards Sections 21, 24 to 33, 48, 66, 78 to 86, and 91 to 95.

The Public Health (Ireland) (Pneumonia, Malaria, Dysentry, etc.) Regulations, 1919 were revoked and are replaced by " The Public Health (Infectious Diseases) Regulations, 1929." Trench Fever, which was included in the 1919 Regulations, has been withdrawn in the new order.

The following Table shows the number of cases of Infectious disease notified each year for the past ten years.

Table 11.—Prevalence of Infectious Disease over a period of ten years, 1928–1938.

Disease	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Typhus	1	1	–	–	–	–	–	–	–	–	–
S. Continued Fever	–	–	1	–	–	–	–	–	–	–	–
Scarlatina	208	216	238	98	81	181	118	52	437	454	228
Puerperal Fever	7	6	6	1	9	11	13	11	12	6	1
Memb. Croup	15	4	5	1	1	–	–	1	1	–	–
Diphtheria	385	369	588*	288	85	109	109	56	24	80	54
Erysipelas	24	24	38	19	13	24	28	24	18	26	18
Measles	6	226	241	3	242	49	126	300	233	88	12
Diarrhoea	79	78	59	85	178	189	80	178	261	246	142
Acute Primary Pneumonia	12	7	3	49	28	3	2	5	14	21	19
Acute Influenzal Pneumonia	–	–	–	41	7	2	1	2	14	45	3
Varicella	64	80	72	71	99	79	158	53	69	218	83
Encephalitis Lethargica ...	–	2	1	1	1	1	–	–	–	–	–
Cerebro-Spinal Meningitis	1	–	–	1	–	–	–	–	3	3	14
Poliomyelitis	–	–	–	–	1	–	–	–	–	1	–
Typhoid Fever	17	6	–	1	1	2	1	3	2	1	3

* In addition to the 588 cases of Diphtheria notified during 1930, there were 36 cases of Diphtheria and Scarlatina, two cases of Diphtheria and Measles, and one case which was notified as " Diphtheria, Scarlatina and Measles." To the 369 cases notified in 1929, must be added three cases of Scarlatina and Diphtheria, and two cases of Diphtheria and Measles.

The total number of notifications received was 577, as compared with 1,217 in 1937, which is a substantial and satisfactory reduction. Reductions are noted under practically all headings, the most pronounced being those in respect to scarlatina, measles, diarrhoea and varicella. An increase is noted in the number of cases of cerebro-spinal meningitis but this is probably more imaginary than real and due to improved methods of diagnosis.

DIPHTHERIA.

The number of cases notified amounted to 54 (as compared with 80 in the previous year). This is a satisfactory reduction, but the number is by no means so low as that which occurred in 1936 when only 24 cases were reported. The number of deaths from diphtheria was seven, representing a case-fatality rate of 12.7 per cent. The corresponding figures last year were 80 cases with 17 deaths and a case-fatality rate 21.2 per cent. On the whole, the figures this year may be regarded with some degree of satisfaction. The actual number of deaths is the lowest for a fairly considerable number of years ; somewhat similar figures were reported in 1936, 1935 and 1928, but apart from these particular years, the records show considerably larger mortality figures.

It is, however, a blot on our record to have to report *any* such deaths, because it has undoubtedly been shewn that they can be entirely prevented by the thorough and proper application of modern preventive methods which have achieved their greatest effect in the prevention of diphtheria. Nowhere, perhaps, has this been more clearly demonstrated than in our own City, where it may certainly be said that the very marked reduction in cases and deaths from diphtheria has been almost entirely due to prophylactic inoculation against the disease. As in previous years it has been ascertained that in no instance had any one of these children who died from diphtheria been immunised. Actually in three instances the parents had refused to have the children protected. This is, unfortunately, the history which is almost always forthcoming in these cases. The facilities for protecting children against diphtheria have been at the disposal of the public in this area for the past ten years and the blame for deaths which occur must rest entirely upon the shoulders of those parents who neglect to avail of them. In the following table the cases and deaths are analysed according to age-groups.

Table 12.—Analysis of cases and deaths.

Age Groups	CASES		DEATHS	
	Number	Proportion to Total	Number	Proportion to Total
0–2 years	3	5.5 per cent.	2	28.6 per cent.
2–4 ,,	12	22.3 ,,	1	14.3 ,,
4–6 ,,	11	20.4 ,,	3	42.8 ,,
6–8 ,,	6	11.1 ,,	–	– ,,
8–10 ,,	8	14.8 ,,	–	– ,,
10–15 ,,	8	14.8 ,,	1	14.3 ,,
15 and over	6	11.1 ,,	–	– ,,
Total	54	100 per cent.	7	12.7 per cent.

Table 13.—Incidence and Case Fatality of Diphtheria from 1890 to 1938.

Year	Cases	Rate per 1000	Deaths	Fatality Rate
1890	20	0.26	8	40.00
1891	37	0.49	11	29.97
1892	11	0.14	3	27.27
1893	18	0.23	3	16.66
1894	14	0.18	4	28.57
1895	6	0.07	2	33.33
1896	7	0.09	1	14.28
1897	21	0.27	10	47.61
1898	18	0.23	4	22.22
1899	18	0.23	5	27.77
1900	23	0.30	2	0.86
1901	26	0.34	11	42.30
1902	8	0.10	4	50.00
1903	17	0.22	4	17.53
1904	29	0.38	6	20.60
1905	18	0.23	6	33.33
1906	37	0.48	11	29.73
1907	37	0.48	5	13.51
1908	40	0.56	9	22.50
1909	66	0.86	11	16.66
1910	51	0.65	11	19.29
1911	70	0.91	10	14.28
1912	52	0.67	6	11.54
1913	24	0.31	3	12.50
1914	54	0.70	13	24.07
1915	68	0.88	14	20.59
1916	43	0.55	9	20.93
1917	26	0.33	3	11.53
1918	34	0.43	6	17.64
1919	262	3.37	32	12.21
1920	428	5.50	60	14.02
1921	541	6.93	56	10.37
1922	379	4.86	42	11.08
1923	440	5.68	23	5.18
1924	217	2.85	12	5.40
1925	265	3.50	6	2.19
1926	469	6.10	18	3.75
1927	344	4.55	9	2.52
1928	385	6.37	19	4.75
1929	369	4.81	32	8.46
1930	627	7.86	59	10.00
1931	288	3.66	24	8.61
1932	85	1.08	17	20.00
1933	109	1.32	14	12.83
1934	109	1.32	25	22.10
1935	56	0.71	7	12.50
1936	25	0.31	8	32.00
1937	80	0.99	17*	21.20
1938	54	0.66	7	12.77

Note:—The Infectious Disease (Notification) Act, 1899, was adopted on 7th February, 1890.

* Includes *two* deaths of cases notified in 1936. Omitting these, the fatality rate would be 18.7.

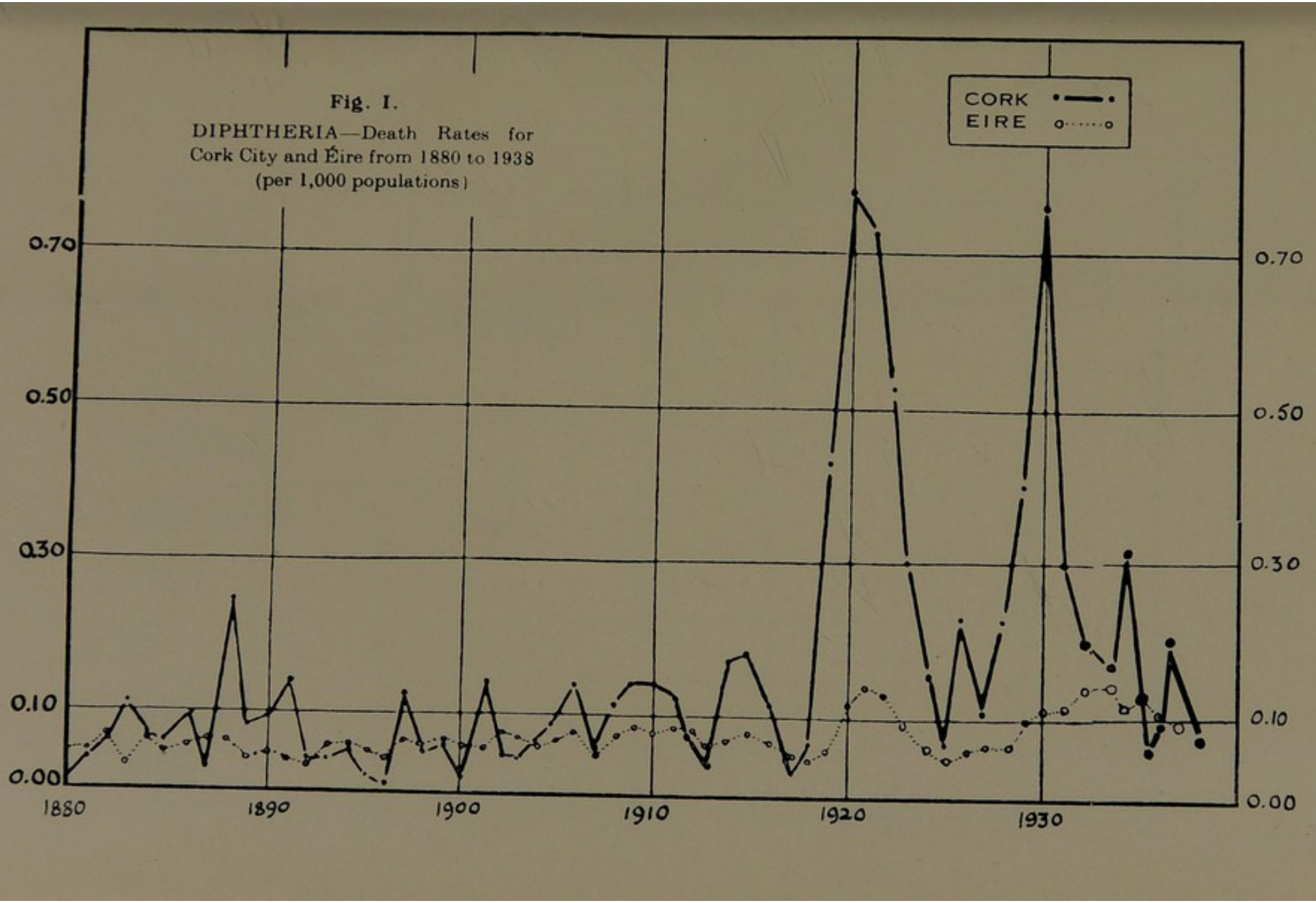
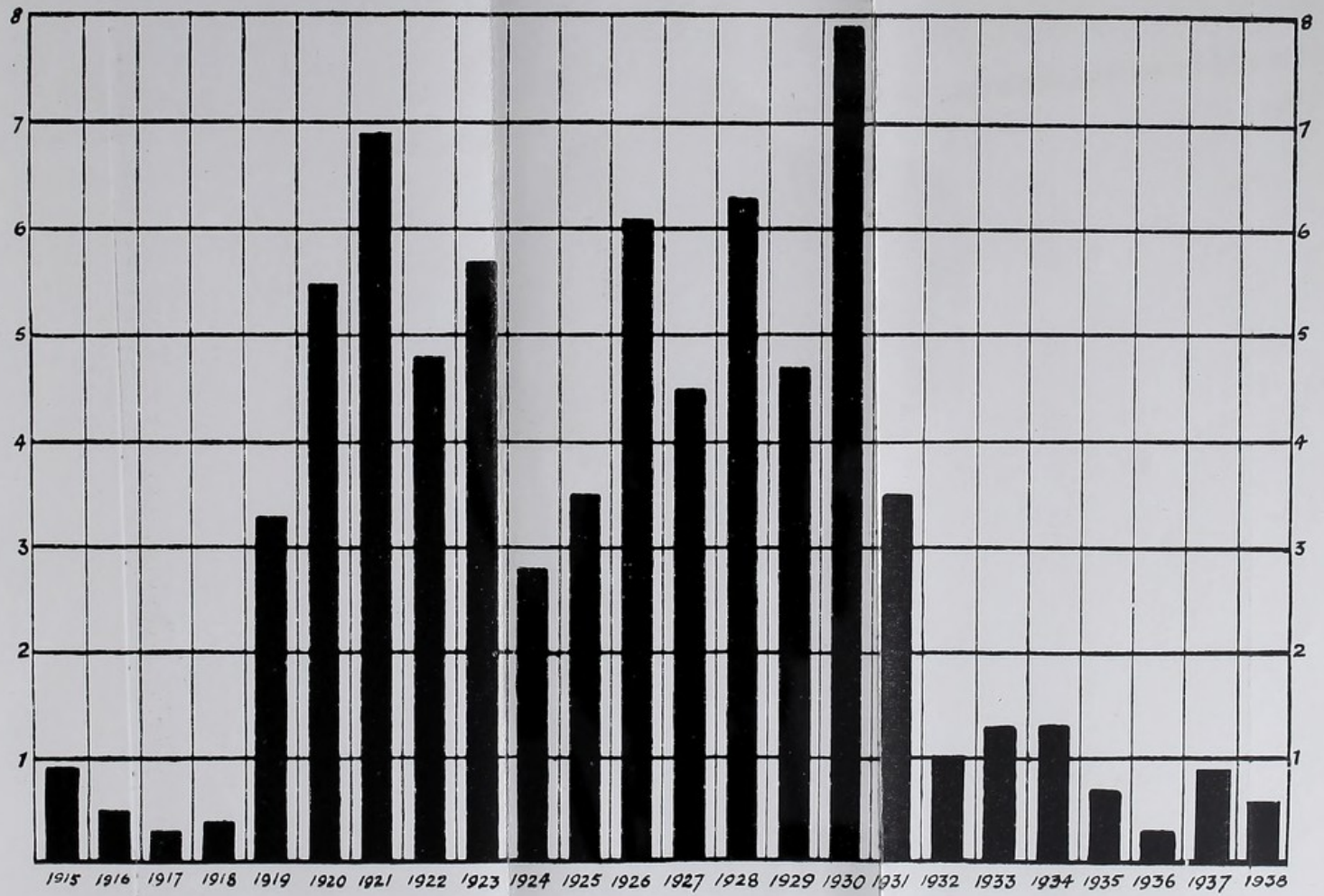


Fig. I.

DIPHTHERIA—Death Rates for Cork City and Éire from 1880 to 1938 (per 1,000 populations)

FIG. II.

DIPHTHERIA CORK CITY. INCIDENCE PER 1,000 POPULATION FROM 1915.



The incidence (per 1,000 of population) and the case-fatality rates of diphtheria from 1890 to the present year are set out in Table 13. The incidence is represented graphically in Figure II from 1915 to 1938. The epidemic nature of the disease from 1919 onwards becomes strikingly apparent as does the decline which followed the introduction of immunisation in 1929. In Figure I the *mortality* (i.e., the number of deaths per 1,000 of population) is graphically compared with that for the country generally.

In a large proportion of cases the reports received transpired not to be diphtheria. The actual number was 56 (approximately 50 per cent. of all notifications received). The age distribution of these cases was as follows :—

0–2 years	....	2 cases
2–4 „	....	9 „
4–6 „	....	10 „
6–8 „	....	5 „
8–10 „	....	4 „
10–15 „	....	8 „
15–20 „	....	3 „
Over 20 „	....	15 „
Total	....	56

DIPHTHERIA IMMUNISATION.

There was a rather pronounced falling-off in the attendances at the Immunisation Clinic during the past year. The principal cause of this has undoubtedly been the low incidence of the disease itself and the comparatively small number of deaths from it. It has been repeatedly noticed that in the absence of the disease parents will not take the trouble to have their children protected and that it is only the scare of severe cases with deaths occurring, that induces many of them to bring the children to the clinic. This short-sighted policy has had most disastrous results in the past and there is every indication that it will continue to do so in the future. The total number of attendances was 1,019 (compared with 1,337 in 1937) which is very small in comparison with the numbers who have attended in former years. Of this number 205 failed to complete treatment, 708 completed the full course and 106 were found to be Schick-negative on the occasion of their first visit and did not require any further treatment. Of the 708 children who received immunising injections, 587 were under five years of age. 152 children were submitted to the *primary* Schick test of which number, as already mentioned, 106 were negative, the remaining ~~116~~ 46 being referred for treatment.

Table 14.—Attendance at Diphtheria Prevention Clinic 1929-1938.

Year	Primary Schick Negative	Completed Full Course	Total	Not Completed Course
1929	—	1,802	1,802	—
1930	154	2,857	3,011	505*
1931	324	1,777	2,101	436
1932	91	422	513	208
1933	159	592	751	61
1934	826	1,716	2,542	432
1935	173	1,118	1,291	8
1936	458	1,741	2,199	22
1937	165	960	1,125	212
1938	106	708	814	205
Totals	2,456	13,693	16,149	2,089

* Includes figures for *both* 1929 *and* 1930.

The figures for primary Schick tests in this table do not, of course, represent the *total* number of such tests performed but merely the number that proved *negative*. They are stated here for the purpose of estimating the number of children who have passed through our hands and who may be regarded as presumably immune. The number of primary tests has been reduced to a minimum. It is now confined to children over seven years. The great bulk of our cases are now under this age, so that the necessity for the primary test is comparatively rare.

Table 15.—Primary Schick Tests performed during 1938.

Age Group	Number of Cases	Positive	Negative	Proportion Positive
0–5 years	1	—	1	—
5–10 ,,	25	1	24	4.0 per cent.
10 and over	126	45	81	35.7 ,,
Totals ..	152	46	106	30.2 per cent.

In the 0–5 years group only one child was submitted to the test. In the next group (5 to 10 years) twenty-five children were tested of whom no less than twenty-four proved *negative*. Such a large proportion of negative reactions in this group is most unusual. The numbers tested, however, are extremely small and no general inferences could possibly be drawn from the results. It will be noted that of the 126 children who were tested in the group over 10 years of age, 45 were *positive*, i.e., 35.7 per cent, which is the opposite to what would have been expected if the preceding group results were an accurate cross-section of the Schick status of the population.

Table 16.—Primary Schick Tests, 1929–38. Analysis, showing proportion positive in each year.

Year	Number Tested	Positive	Negative	Proportion Positive
1929–30	1170	916	254	78.2 per cent.
1931	598	274	324	45.8 ,,
1932	301	210	91	69.7 ,,
1933	435	276	159	63.4 ,,
1934	1474	648	826	44.0 ,,
1935	309	136	173	44.0 ,,
1936	626	168	458	26.8 ,,
1937	266	101	165	38.0 ,,
1938	152	46	106	30.2 ,,

Apart from record purposes this table is of little value as, obviously, the proportion of *positive* reactions will depend almost entirely on the age constitution of the groups of children tested and as this factor will fluctuate widely from year to year, so also will the results vary from one year to another. In this respect the next table is much more informative as the results in the different years have been analysed in accordance with the age groups of the children.

Table 17.—Primary Schick Tests, 1929–38. Analysis of proportion positive each year in different age groups.

Age Group	Proportion POSITIVE (expressed as percentages)								
	1929–30	1931	1932	1933	1934	1935	1936	1937	1938
0–5 years	—	—	88.4	79.7	65.8	66.6	66.6	—	—
5–10 ,,	—	—	60.1	63.3	44.2	49.5	41.5	43.8	25.0
10 and over	—	—	37.7	28.9	27.5	30.3	15.5	33.0	35.7
Whole Group	78.2	45.8	69.7	63.4	44.0	44.0	25.2	37.9	30.2

Owing to the smallness in the number of cases tested, no results can be adduced for the figures for the years 1937 and 1938.

The number of attendances in the different age groups is shewn in the following figures.

(1) Treatment Incomplete—		
0–5 years	135	
5–10 years	65	
10 and over	5	
	——	205
(2) Treatment Complete—		
0–5 years	587	
5–10 years	68	
10 and over	53	
	——	708
Total number treated		913
Number negative on Primary Schick Test		106
Total		1,019

The number of those who failed to complete treatment remained substantially the same as that in the preceding year (205 and 212 respectively.

Table 18.—Secondary Schick Tests, 1930–1938.

Year	Total	Negative	Positive	Proportion Negative
1930	805	752	53	94.6 per cent.
1931	1166	991	175	85.2 ,,
1932	913	858	55	92.8 ,,
1933	893	801	92	89.0 ,,
1934	1105	1058	47	95.7 ,,
1935	1405	1388	17	98.8 ,,
1936	1272	1259	13	98.9 ,,
1937	732	722	10	98.6 ,,
1938	581	498	83	85.7 ,,
Totals ..	8872	8327	545	93.7 per cent.

Type of Prophylactic.

Toxoid anti toxin flocules (T.A.F.) was used entirely during the year. Owing to the difficulty which has been experienced in previous years (when using T.A.M.) in getting parents to bring these children for the *third* injection, it was decided to administer the prophylactic in two doses of 1.5 c.c. each at intervals of a fortnight. This was the procedure adopted throughout the year and on the basis of the results obtained by means of the *secondary* Schick-test it must be said to be definitely inferior to that of previous years in which alum-precipitated toxoid was used. It is necessary, however, to stress the fact that, although the full recommended amount (3 c.c.'s) of prophylactic was administered, it was given in only *two* doses instead of the usual three. It has been recognised, in connection with the administration of T.A.M., that it is the later doses (and particularly the last) which produce the maximum protective action, the previous doses sensitising the tissues to the production of anti-bodies which are then formed in large amounts when the third dose is given. It is very likely indeed that a similar effect is produced in the case of T.A.F., and undoubtedly the recommended procedure is *three* doses at intervals but I must insist on the extreme difficulty which has been experienced in overcoming the very natural reluctance of children to submit themselves to a multiplicity of subcutaneous injections. This is a very real difficulty and was the prime cause of the very large proportion of children who did not complete the full treatment in the days when these injections were considered an absolute minimum. No doubt such difficulties will not be experienced when one is dealing with institutions where the children are under effective control but in the case of extern clinics in which reliance has to be entirely reposed on voluntary co-operation on the part of parents and children the problem is an acute and ever recurring one.

For this reason one is glad to avail again of A.P.T. either in the single dose or two dose method. We have had experience of both and pending the assessment of results the latter procedure has again been adopted as the consensus of opinion at present favours this method.

Certainly an examination of the appropriate table (No. 18) which shews 98.6 per cent *negative* after this method is sufficient indication of its merit. T.A.F. will therefore be reserved for those cases in which the detector dose indicates an undue sensitivity to A.P.T. and for children of the older age-groups.

SCARLET FEVER.

There was a substantial reduction in the number of notified cases (228 as compared with 454 in 1937, *i.e.*, practically only half as many) but in view of the records for former years it must be considered to have maintained epidemic proportions. The notifications for this disease were indeed far greater than those for any of the other infectious diseases. This epidemic first made its appearance in 1936, continued unabated during 1937 and now appears to be on the wane. The prevention of scarlet-fever by active immunisation is possible, but it has not developed to the same extent as that against diphtheria. This is, no doubt, partly due to the fact that scarlatina is now a comparatively mild disease and to the fact that the large number of injections necessitated renders it impracticable on a large scale. The following table, which first appeared in last year's report is reproduced and is of interest in showing epidemics of past years with associated fatality rates. It shows well the very marked decline in virulence which has characterised the disease in the past fifty years.

Table 19.—Incidence and Case Fatality in Scarlet Fever *Epidemics* in Cork City.

Year	No. of Cases	No. of Deaths	Fatality Rate
1879	386	65	16.8 per cent
1880	616	202	32.7 ,,
1881	103	30	29.1 ,,
1884	158	27	17.2 ,,
1885	143	48	33.2 ,,
1894	304	15	4.9 ,,
1900	401	22	5.5 ,,
1901	288	17	5.9 ,,
1914	230	9	3.9 ,,
1915	245	12	4.9 ,,
1916	112	6	5.3 ,,
1926	278	6	2.1 ,,
1927	205	6	2.8 ,,
1928	208	4	1.9 ,,
1929	216	3	1.4 ,,
1930	238	8	3.3 ,,
1933	181	1	0.5 ,,
1934	118	2	1.5 ,,
1936	437	7	1.6 ,,
1937	454	10	2.2 ,,
1938	228	3	1.3 ,,

In general, practitioners have been encouraged to treat cases of scarlet fever at home whenever the circumstances justify it. This policy was

first adopted in 1936 and has fully justified itself in the intervening years. The main consideration has been whether the patient will have a room for his sole use and if one member of the household can be told off for the duty of nursing him. It can be said that the experience in regard to the occurrence of secondary cases has been such as to give every encouragement for the continuance of this arrangement. Recent advances in the knowledge of the epidemiology and, particularly, of the bacteriology of scarlet fever have made it clear that many of the measures adopted in the past were not only uncalled for but useless in the prevention of the disease. It is not the patient suffering from scarlet fever who is mostly responsible for its spread but the healthy carrier, adult or child, harbouring haemolytic streptococci in the throat or elsewhere. In consequence, it is no longer regarded as necessary to isolate every case of scarlet fever and, provided the circumstances are suitable, home treatment is regarded as being the best from every point of view. In the table which follows are analysed the cases which occurred during the year.

Table 20.—1938.—Age and sex distribution of Scarlet Fever.

Age Group	Males	Females	Total
0–5 years	47	50	97
5–10 „	33	59	92
10–15 „	11	12	23
15–20 „	—	6	6
20 and over	3	7	10
Total	94	134	228

It will be noted that there was a very marked preponderance of females over males. A similar disparity was noted in 1936, while in 1937 there was only a relatively slight excess of female cases.

TYPHOID FEVER.

Three cases were reported during the year, of which the following are brief particulars :—

(1) Male, aged 37 years. This case was reported on 1st March and investigated on the same date. It was ascertained that the patient was a salesman employed by a city firm and in the course of his occupation was accustomed to make frequent journeys into the country and particularly in the eastern portion of the county. He gave a history of having drunk raw milk and water several times daily in farmers' houses and elsewhere and it seems likely that infection was incurred in this way as there was a complete absence of typhoid in the city at this time and there had been none since the previous July.

(2) Male, aged 23 years. The patient in this instance was a seaman on board a tramp steamer which arrived in Cork on 3rd August from the Mediterranean. For three weeks prior to arrival in Cork he was definitely ill and confined to bed the whole time. During this period (it was reported) he was medically examined on three occasions, but the true nature of his illness was not recognised. He was taken ashore here and sent to a general hospital in the first instance, from which he was transferred to the Fever Hospital after three days, during which he was under observation.

(3) Male, aged 38 years. This patient was a bus driver and his route was between Cork and Waterford cities. It was not possible to definitely trace the source of his infection but the history of his movements is somewhat suggestive. He slept on alternate nights away from home and was accustomed to take meals en route. Investigations by the County Health Department were not productive of any information which would suggest infection in that area but information received from the Medical Officer of Health of Waterford City indicated that the patient was accustomed to eat raw cockles frequently while in that locality and that at least two known cases of enteric had arisen from this cause. It would seem likely therefore that this was the most probable source of infection.

The disease in this case assumed serious characteristics from the beginning and it is probable too that he was ill for a considerable time before seeking medical assistance because the Widal reaction was very pronounced when first tested and yielded positive result with a dilution as high as 1 in 50.000. This patient, unfortunately, died.

There has been a marked absence of what may be termed indigenous typhoid from this city for a number of years as compared with former periods (*vide* table following) and in practically all such cases it was impossible to trace the sources of infection. The last year in which any substantial number of cases occurred was in 1929, when six cases were reported. The subsequent history may be briefly summarised as follows.

1930—No cases.

1931—3 Cases (1 para-typhoid B.)

(a) Infection incurred in England, probably Somerset. The history and incubation period made it possible to trace the place of infection with some considerable degree of accuracy.

(b) A commercial traveller, the greater portion of his time spent travelling about the country. Infection probably incurred on one of these journeys.

(c) Resident—No history of absence from the city (para-typhoid infection).

1932—1 Case. A farm labourer was resident *outside* the city up to four days before his illness. Infection undoubtedly incurred outside.

1933—2 cases.

(a) A fireman on G.S.R. Travelled to various parts of country. Gave history of drinking water in such places, one of which was probable source of infection.

(b) A lorry driver—Occupation consisted in delivering goods in country area with a radius of 10 to 15 miles from the city.

1935—2 cases.

(a) A nurse. Arrived in city from an area in Kerry, already suffering from typhoid. Investigations in this case revealed that several members of her family had been suffering from the disease which had been mistakenly diagnosed as influenza.

(b) City resident. History of eating shell-fish while on excursion to Galway during the incubation period. No contact traced.

1935—3 cases.

(a) Girl aged 14½. No history of absences from city. Source of infection untraced.

(b) Domestic servant. Infection directly traced to an occupant of household. Latter was found to be a faecal carrier. Suffered from enteric fifteen years previously (epidemic of 1920).

(c) Girl aged 15 years. No absence from city. Source of infection untraced.

1936—2 cases.

(a) Male, aged 23, and ;

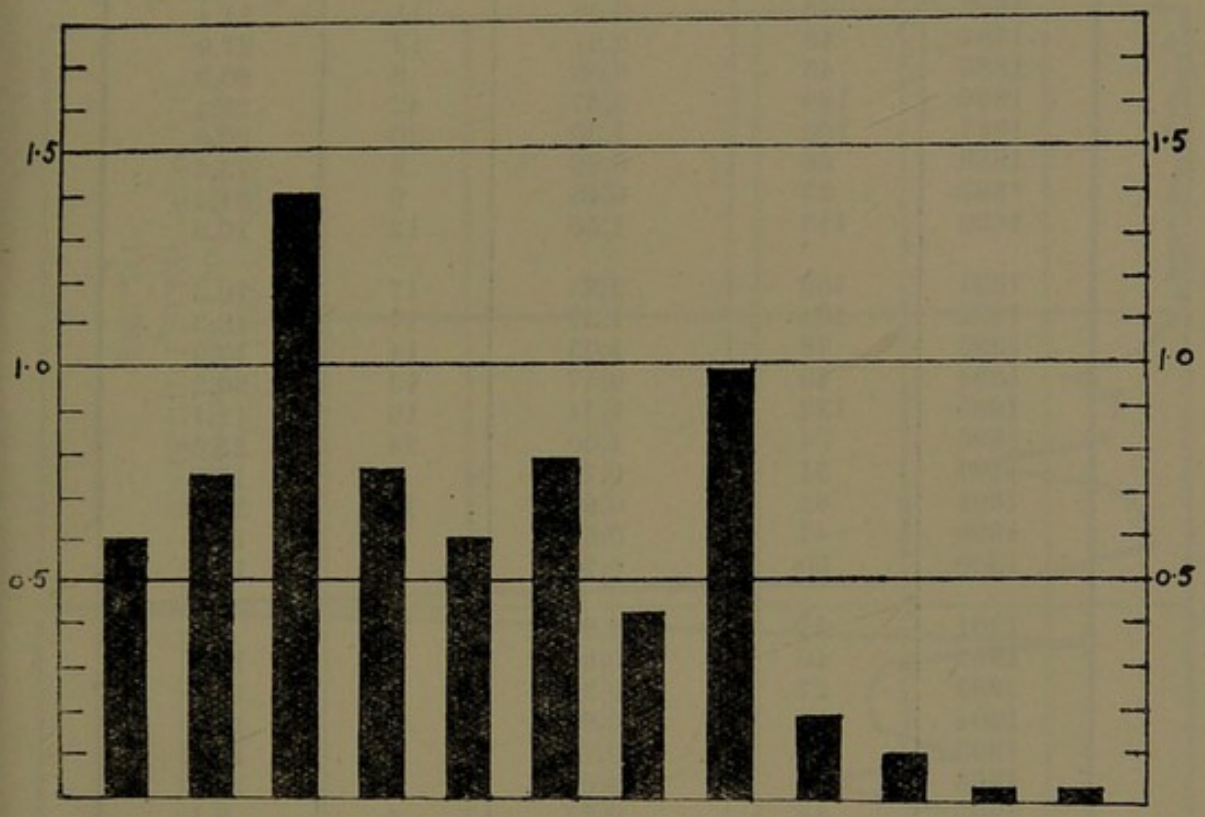
(b) Female, aged 21. There was no history of absences from the city and it was not possible to trace sources of infection.

1937—1 case. No history of absences from city. Probable source of infection was River Lee below city. Patient was accustomed to bathe at Tivoli where river is subject to sewage contamination.

Case (b) 1935 is of interest. This is the only case which has come to my notice which can be definitely traced to the epidemic which occurred in 1930. This is surprising as one would have expected to have a considerable number of carriers as a result of this outbreak and no doubt, some of the cases which occurred in the supervening years may have been due to them as well as, possibly, some of those which now occur in the City in which it is not possible to trace the source of infection.

TYPHOID FEVER—

QUINQUENNIAL AVERAGES 1881—1938.



In the next table is set out statistical information in relation to typhoid fever which shews the reduction which has been maintained over the past nine years. Our experience in this respect, in conjunction with occurrences in other areas within recent years emphasizes the prime importance of water in the spread of typhoid and the necessity for fully controlling the supply. The measures adopted in this area are set out in the section dealing with water and I think it will be agreed that every reasonable precaution has been adopted. The fact that samples are examined on five days in each week affords ample warning of any possible contamination of the supplies. The reports are received at this office from the bacteriological laboratory and copies are transmitted to the Water Engineer so that he is able to check the working of his plant at once. In turn, the Engineer also supplies reports of the daily findings in regard to the plant, based on the system worked out by him some years ago in conjunction with the bacteriological reports. There is, therefore, a threefold control over the supply with the Medical Officer of Health acting in a co-ordinating capacity. The Sanitary Officers collect the samples, deliver them at the laboratory and the reports from the latter are (as stated above) received by the Medical Officer of Health, who sends them to the Water Engineer. Any deviations from the normal can, under this system, be detected at once and dealt with immediately and in practice the results reported have shewn this to be the case. It is more than a co-incidence that since the time that steps were taken to deal fully with the water supply, typhoid has ceased to be a problem.

Table 21.—Incidence and Case Fatality of Enteric Fever in Cork City from 1881 to 1938.

Year	Cases	Incidence per 1,000	Deaths	Fatality Rate
1881	66	0.82	4	6.5
1882	37	0.46	4	10.8
1883	45	0.56	11	24.4
1884	48	0.61	13	27.0
1885	43	0.55	9	20.9
1886	180	2.57	42	23.3
1887	100	1.30	20	20.0
1888	66	0.86	9	13.6
1889	37	0.48	9	24.3
1890	113	1.50	12	10.6
1891	165	2.33	17	10.3
1892	104	1.37	17	18.3
1893	78	1.03	14	17.9
1894	43	0.57	13	30.2
1895	132	1.74	16	12.1
1896	94	1.00	24	25.5
1897	51	0.70	9	17.6
1898	62	0.81	13	20.9
1899	47	0.62	8	17.0
1900	50	0.70	5	10.0
1901	51	0.67	5	9.8
1902	49	0.64	5	10.2
1903	27	0.35	5	18.5
1904	50	0.64	8	16.0
1905	58	0.76	8	13.8
1906	48	0.66	5	10.4
1907	44	0.57	4	9.1
1908	88	1.02	16	18.2
1909	74	0.95	15	20.2
1910	54	0.70	13	24.0
1911	32	0.41	5	15.6
1912	26	0.33	6	23.0
1913	29	0.38	6	20.7
1914	50	0.64	4	8.0
1915	32	0.41	5	15.6
1916	42	0.54	6	14.3
1917	43	0.55	3	6.9
1918	42	0.54	8	19.0
1919	12	0.15	1	8.3
1920	244	3.13	13	5.3
1921	21	0.26	4	19.0
1922	6	0.07	2	33.3
1923	7	0.09	1	14.2
1924	11	0.14	2	18.1
1925	27	0.34	5	18.5
1926	11	0.14	2	18.2
1927	10	0.12	2	20.0
1928	17	0.21	2	11.7
1929	6	0.08	1	16.6
1930	0	....	....	....
1931	1 (a)	0.01	1	100.0
1932	1 (a)	0.01	1	100.0
1933	2 (a)	0.02	....	(b)
1934	1	0.01	....	....
1935	3	0.03	....	....
1936	2	0.02	....	....
1937	1	0.01	....	....
1938	3 (a)	0.03	1	33.3

(a) Infection in all these cases was incurred outside the City.
(b) Two deaths were recorded in Cork Mental Hospital (Co. Area) of inmates who formerly resided in the City.

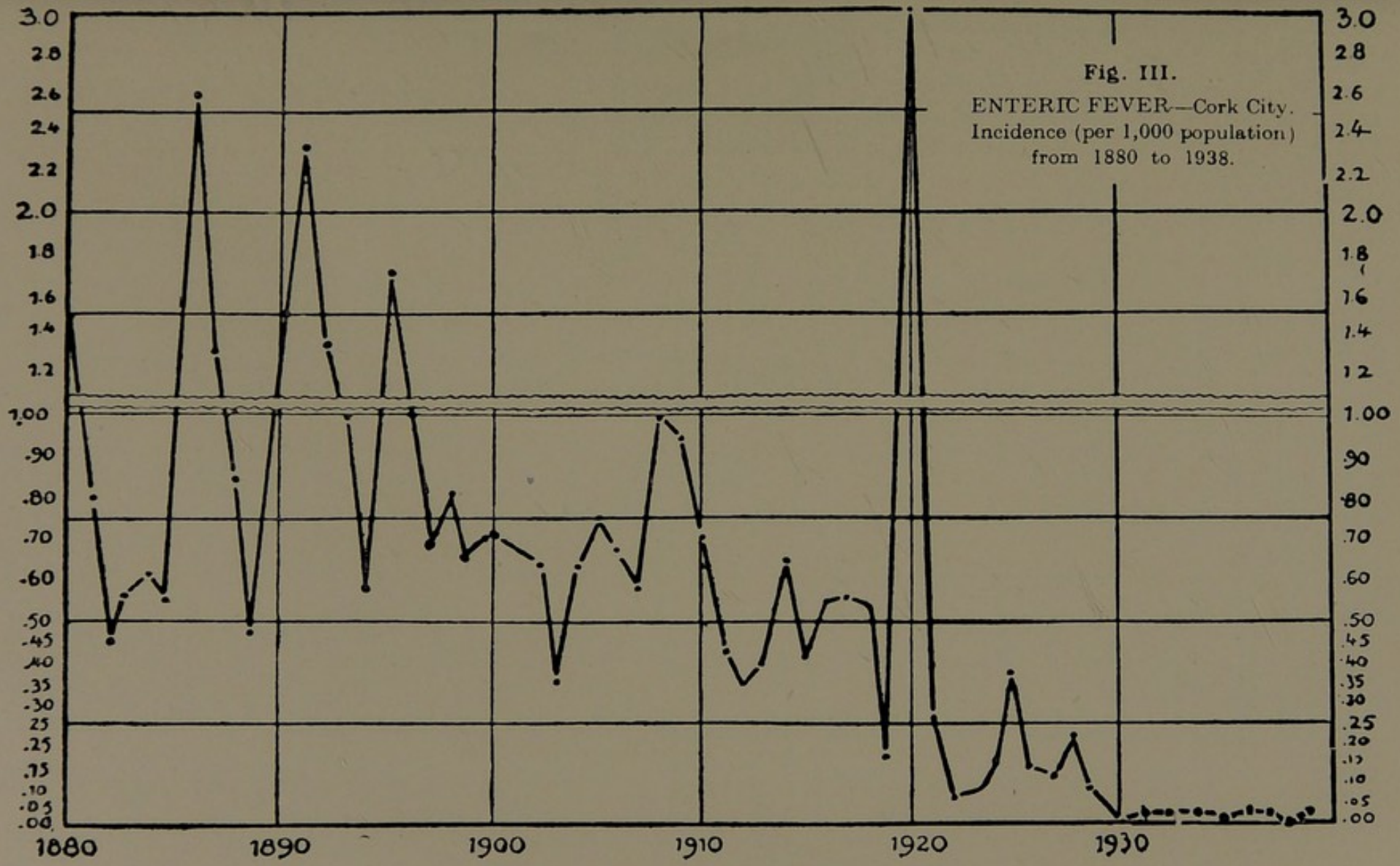


Fig. III.

ENTERIC FEVER—Cork City.
Incidence (per 1,000 population)
from 1880 to 1938.

TYPHUS.

For the ninth year in succession there has been no case. As a matter of interest the table relative to this disease, first published in 1935, is reproduced in this report.

Table 22.—Incidence and Case Fatality of Typhus Fever in Cork City from 1881 to 1938.

Year	Cases	Incidence per 1,000	Deaths	Fatality Rate
1881	1406	17.42	88	6.2
1882	683	8.57	54	7.9
1883	844	10.66	46	5.4
1884	456	5.65	37	8.1
1885	159	2.03	21	13.2
1886	83	1.06	17	18.0
1887	67	0.86	12	17.9
1888	72	0.93	21	27.7
1889	48	0.63	5	10.4
1890	54	0.71	7	12.9
1891	24	0.30	5	20.8
1892	162	2.28	23	14.1
1893	92	1.20	7	7.6
1894	25	0.33	2	8.0
1895	29	0.38	8	31.0
1896	22	0.29	7	31.8
1897	30	0.39	3	10.0
1898	61	0.80	11	18.0
1899	9	0.10	6	66.6
1900	28	0.36	4	14.3
1901	13	0.17	2	15.38
1902	6	0.07	....	....
1903	7	0.09	....	....
1904	11	0.14	1	9.1
1905	9	0.11	2	22.2
1906	6	0.07	4	66.6
1907	10	0.13	6	60.0
1908	23	0.30		26.1
1909	18	0.24	5	27.7
1910	8	0.10	3	37.5
1911	10	0.13	....	....
1912	1	0.01	....	....
1913	5	0.06	2	40.0
1914	1	0.01	1	100.0
1915	....	....	....	....
1916	1	0.01	1	100.0
1917	3	0.04	1	33.3
1918	1	0.01	1	100.0
1919	15	0.19	3	20.0
1920	2	0.03	....	....
1921	1	0.01	1	100.0
1922	....	....	....	....
1923	1	0.01	1	100.0
1924	1	0.01	....	....
1925	....	....	....	....
1926	3	0.04	1	33.3
1927	4	0.05	....	....
1928	1	0.01	....	....
1929	1	0.01	1	100.0

There has been no case since 1929.

EPIDEMIC DIARRHOEA.

142 cases were reported during the year and 33 deaths were recorded. The fatality rate was therefore 23.2 per cent. which goes to shew that this condition is one of the most serious to which our infant population is exposed. In the previous year there were 246 cases and 52 deaths, with a fatality rate equal to 21.1 per cent. This condition of epidemic diarrhoea continues to be one of the principal contributory factors to infant mortality in this area which is all the more regrettable as it is an eminently preventible condition. It is true that there has been a substantial reduction in the figures as compared with 1937, but this reduction may largely be attributed to climatic conditions (as referred to in the section on Maternity and Child Welfare). The one outstanding cause of diarrhoea and enteritis in infants continues to be the substitution of artificial feeding for breast-feeding. Every year since we commenced investigation of these cases this factor has loomed up almost to the complete exclusion of every other. The great preponderance of cases amongst bottle-fed babies is again seen this year as shewn in the following Table.

Year	Number of Cases according to Manner of Feeding			Cases Untraced	Total
	Breast	Cow's Milk	Dried Milk		
1935	18	128	6	26	178
1936	7	198	5	51	261
1937	18	204	8	16	246
1938	14	108	5	15	142
Totals	57	638	24	108	827

It will be noted, for the year 1938, that of 127 cases which were *traced and investigated*, no less than 113 were found to be artificially fed (*i.e.*, 88.9 per cent). The great majority of them were fed on cow's milk. The table shews also that this feature has been common to every year in which the conditions were examined and, no doubt, it would also have revealed itself in previous years if similar investigations had been carried out. This is a serious state of affairs. In effect it means that because artificial feeding has been substituted for natural feeding, large numbers of infants are exposed to the hazards of diarrhoea and that a very large proportion of such children die. Apart from inherited congenital defects, diarrhoea is the greatest single cause of death amongst infants and the prime cause of such diarrhoea is bottle feeding. It would seem also that babies fed on cow's milk are much more prone to diarrhoea than those fed on the preparations of dried milk. The reason for this, of course, is obvious. Dried milk is far less liable to contamination than cow's milk, chiefly because of the ease with which it can be stored and also because it is more protected during manufacture and transit. This is not to say that it is superior to natural cow's milk from the

nutritional standpoint, if the latter be properly prepared. Indeed there is plenty of evidence to the contrary, that cow's milk, suitably altered and hygienically prepared, is the best substitute for mother's milk. There is no gainsaying the fact, however, that the only completely suitable food and the only one produced under absolutely aseptic conditions is that provided by nature. Apropos of this, it is well to revert again to the remarks of Professor Bigger on this subject in his *Handbook of Hygiene.*

> Epidemic enteritis is rare in breast-fed infants even when in the same community, artificially-fed infants are being heavily attacked. Mother's milk is the most suitable and most easily digested food for the infant, it is supplied fresh and free from bacteria; it requires the minimum of intelligence, instruction and money. It is possible to rear a baby successfully by artificial feeding, but this requires money to purchase the best and cleanest milk or other food, constant care and intelligence for its preparation and suitable facilities for its protection and storage. In the absence of these, the food will be heavily contaminated by bacteria and the disease will occur.
>
> The chief requirements for the prevention of epidemic outbreaks are breast feeding of infants, delaying of weaning until after the autumn, education of mothers, good sanitation, including a water carriage system of disposal of excreta, provision of pure, clean milk, and suppression of flies and dust. The reduction in the numbers of deaths from epidemic enteritis effected chiefly by the methods mentioned is one of the most satisfactory achievements of the present century in the field of preventive medicine. *Epidemic diarrhoea is definitely a preventible disease* which has, to a considerable extent, been prevented.

The italics do not appear in the original. The importance of this subject can scarcely be exaggerated. One is often struck by the physical deterioration which takes place in infants after artificial feeding has been substituted for breast feeding. The great majority of such children are born healthy, strong and normal in every way, then for some reason or other the method of feeding is changed and sooner or later trouble begins. It may be digestive disturbance due to imbalance of the constituents of the feed, leading to more or less serious consequences for the child, or it may be a bacterial contamination of the milk with virulent organisms leading to frank gastro-enteritis more often than not, with dire results to the child. Whatever be the cause, he will scarcely ever be the same, and quite apart from the definite wastage of life reflected in the death returns, it may be said that the children who survive, start life with a definite handicap which, in many cases, is never afterwards pulled down. There is reason to believe that such children very largely constitute the ranks of those who in later life are the subjects of illness and ill-health.

Apart from absolute necessity, there is no justification whatever for substituting bottle-feeding for breast-feeding and it is only after most careful consideration of all the contingent facts that it should be resorted to.

In considering the epidemiological features of the cases recorded during the past year, it is interesting to note once again the more or less even distribution of cases throughout the year. The number of

notifications received by the end of each monthly period throughout the year was as follows :—

Jan. 29th	....	13 cases	July 30th	....	11 cases
Feb. 26th	....	10 ,,	Aug. 27th	....	8 ,,
March 26th	....	11 ,,	Sept. 24th	....	14 ,,
April 30th	....	15 ,,	Oct. 29th	....	25 ,,
May 28th	....	11 ,,	Nov. 26th	....	14 ,,
June 25th	....	4 ,,	Dec. 31st	....	6 ,,

The following figures show these notifications distributed according to quarters :—

1st Quarter	....	....	....	45 cases
2nd ,,	....	....	....	33 ,,
3rd ,,	....	....	....	30 ,,
4th ,,	....	....	....	34 ,,
		Total	....	142 ,,

These figures emphasize the remarks above as to the role of feeding in the causation of the disease. If bacterial contamination of milk were the chief cause, the great preponderance of cases would be in the *third quarter*. In fact the cases notified in this quarter would probably greatly exceed those of the rest of the year taken together. This feature has always been characteristic of milk-borne outbreaks of this disease, but it has been lacking in our records for the past four or five years and quite a large proportion of the notifications have been received at other periods of the year. Indeed so far as last year is concerned they have been distributed quite uniformly throughout the year. This feature lends considerable weight to the view that it is unsuitable artificial feeding which is mainly responsible for the occurrence of infantile diarrhoea and that, in consequence, such feeding is a major contributor to our mortality tables in relation to infant deaths.

In the following table are shewn the numbers of cases and deaths from diarrhoea which have occurred in the City since 1907, the year in which the disease was first made notifiable here. The *morbidity* rate is based on the number of cases notified in proportion to the population, the *mortality* rate on the number of deaths per 1,000 of the population while the *case fatality* rate represents the deaths registered per 100 cases notified.

Table 23.—Epidemic Diarrhoea. Return of Cases notified and Deaths registered, together with the Mortality, Morbidity and Case-fatality Rates artising therefrom.

Year	No. of Cases	Rate per 1000 Population	DEATHS		
			Number Recorded	Mortality Rate	Case Fatality Rate*
1907	413	5.42	48	0.63	11.1
1908	524	6.85	79	1.03	15.07
1909	514	6.72	54	0.71	10.31
1910	159	2.07	34	0.44	21.3
1911	352	4.56	78	1.01	22.1
1912	71	0.92	18	0.23	25.3
1913	320	4.13	114	1.48	35.6
1914	188	2.43	67	0.86	35.6
1915	177	2.29	49	0.63	27.6
1916	139	1.79	35	0.45	25.1
1917	83	1.07	34	0.43	40.9
1918	121	1.55	40	0.51	33.05
1919	85	1.09	40	0.51	47.05
1920	54	0.69	22	0.28	40.7
1921	105	1.35	1	0.01	0.94
1922	19	0.24	–	–	–
1923	35	0.44	24	0.30	68.5
1924	30	0.38	10	0.12	33.3
1925	142	1.81	45	0.58	31.6
1926	108	1.37	53	0.67	49.07
1927	76	0.96	24	0.30	31.5
1928	79	1.00	28	0.35	35.4
1929	78	0.98	25	0.31	32.05
1930	59	0.74	37	0.46	62.7
1931	85	1.06	34	0.42	40.0
1932	178	2.22	46	0.57	27.8
1933	189	2.35	45	0.56	23.8
1934	80	0.99	36	0.44	45.0
1935	178	2.21	56	0.69	31.4
1936	261	3.23	41	0.50	15.7
1937	246	3.04	52	0.64	21.1
1938	142	1.76	33	0.41	23.2

*It is obvious that the *fatality rates* in this table must be read with extreme caution. The fluctuation from year to year is so extreme that it is apparent that notification must have been very defective in the years with abnormally high rates. It is obvious, nevertheless, that this is a most fatal disease of early childhood and the figures lend point to the remarks which have been made above in regard to the prime contributory cause.

CEREBRO-SPINAL MENINGITIS.

Fourteen cases of this disease were notificd during the year. From the records this would appear to have been the largest number ever received but the figures must be interpreted with much caution. There is every reason to believe that much of the increase in reported cases is

due to increased use of lumbar puncture in the hospitals with bacteriological examination of the cerebro-spinal fluid. In former years this was the exception rather than the rule ; consequently the great majority of cases of meningitis were labelled tuberculous or just simply meningitis and appeared in the records as such. It is almost certain that an appreciable proportion of such cases must have been due to the meningoccus and would have been diagnosed as such if more extensive use had been made of lumar puncture and the valuable aids which it affords in the matter of diagnosis. In this connection I have to acknowledge the valuable assistance which I received from Dr. J. J. Martin during his tenure of office in the District Hospital. Dr. Martin supplied me with full reports of every case which came under his care and made possible the collection of a number of most useful case-histories. Information was also, of course, available from the other hospitals and from the investigations of our sanitary inspectors. The following table is a very brief summary of the information obtained from these sources.

Table 24.—Analysis of cases of Cerebro-Spinal Meningitis.

Date of Notification	Age	Sex	Examination of C.S.F.	Termination
28/1/38	8½	M	Positive	Died
26/2/38	1¼	M	,,	Died
5/3/38	8	F	,,	Recovered
23/3/38	3½	M	,,	Recovered
2/4/38	7 months	F	,,	Died
24/5/38	1 10/12	F	,,	Recovered
1/6/38	8	M	,,	Died
3/6/38	20	M	,,	Died
10/6/38	1 7/12	F	,,	Died
11/7/38	3½	M	Not Examined	Died
7/9/38	18½	M	Positive	Died
12/9/38	7½	F	,,	Recovered
10/10/38	4½	M	,,	Recovered
5/12/38	1½	M	,,	Recovered

It will be observed that the fatality rate was high (actually 57.1 per cent.). In these cases the disease assumed a very virulent form from the beginning and treatment was not of avail. All the cases were sporadic. Though a number of them might possibly be grouped together in regard to the time of occurrence (May, June, July) no inter-connection could possibly be traced between any of them. They were all from different addresses and in no instance did a secondary case occur. As in previous years, overcrowding was a definite factor. The extreme delicacy of the organism concerned fortunately makes the likelihood of an epidemic remote and it is only in wartime (when overcrowding becomes excessive and universal) that it seems to be capable of establishing itself in epidemic proportions. In one instance the patient was a child who was removed from a trans-Atlantic liner at Cobh, en route for the United States. He fortunately recovered completely and was able to resume his journey at a later date.

PUERPERAL FEVER.

Only one case was reported. The patient suffered from a malformation which necessitated much manual interference. The temperature did not reach a high degree at any time and the patient recovered.

INFLUENZA.

This disease is not notifiable in this area and reliance has to be placed on mortality returns. Six deaths occurred, compared with 56 in the previous year. Quite apart from this it was obvious that there was nothing in the nature of an epidemic during the year.

OTHER INFECTIOUS DISEASES.

Notifications in regard to other infectious diseases during the year were as follows :—

Erysipelas	18
Measles	12
Acute Primary Pneumonia	19
Acute Influenzal Pneumonia	3
Varicella	83

Table 25.—Showing the number of Articles Disinfected during the year 1938.

	Beds	Mattresses	Bedding	Articles of Wearing Apparel	Miscellaneous Articles	Total No. of Articles
January	8	58	355	105	46	572
February	9	42	354	96	100	601
March	6	40	291	22	19	378
April	2	21	188	137	18	366
May	5	23	182	17	20	247
June	5	23	153	20	1	202
July	7	37	175	17	18	254
August	7	16	150	48	49	270
September	6	34	249	15	17	321
October	12	31	279	122	5	449
November	10	52	274	56	27	419
December	6	24	163	52	28	273
	83	401	2813	707	348	4352

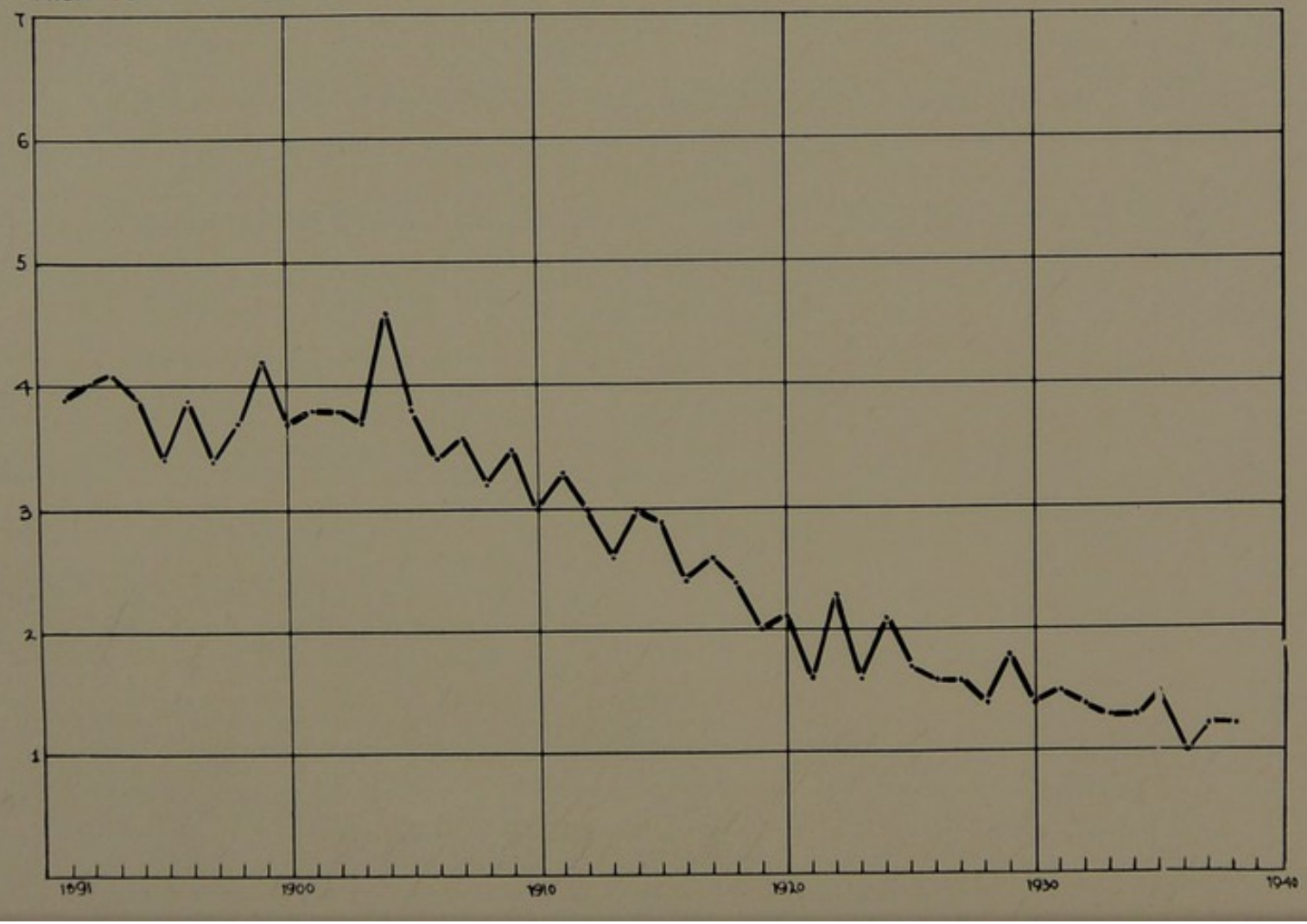
Table 26.—Yearly Summary of Infectious Diseases, 1879–1938.

Year	Small Pox	Typhus	Typhoid or Enteric Fever	Simple Continued Fever	Scarlatina	Puerperal Fever	Membraneous Croup	Diphtheria	Erysipelas	Measles	Diarrhoea	Chicken Pox	Cerebro-Spinal Meningitis	Poliomyelitis	Encephalitis Lethargica	Pneumonia: Acute Primary	Pneumonia: Acute Influenza
1879	—	337	91	335	386	—	—	2	30	269	107	—	—	—	—	—	—
1880	—	756	117	420	616	—	—	9	37	282	48	—	—	—	—	—	—
1881	—	1406	66	364	103	—	—	—	31	240	5	—	—	—	—	—	—
1882	—	683	37	239	25	—	—	3	11	146	3	—	—	—	—	—	—
1883	—	844	45	164	105	—	—	6	—	109	1	—	—	—	—	—	—
1884	—	456	48	221	158	—	—	2	14	106	3	—	—	—	—	—	—
1885	1	159	43	94	143	—	—	2	17	35	—	—	—	—	—	—	—
1886	—	83	180	70	86	—	—	1	14	24	—	—	—	—	—	—	—
1887	—	67	100	46	17	—	—	4	25	182	1	—	—	—	—	—	—
1888	—	72	66	40	55	—	—	7	25	232	—	—	—	—	—	—	—
1889	—	48	37	24	90	—	—	9	12	—	—	—	—	—	—	—	—
1890	—	54	113	36	128	5	3	20	27	3	2	—	—	—	—	—	—
1891	1	24	165	46	64	3	3	37	27	2	—	—	—	—	—	—	—
1892	1	162	104	53	19	—	3	11	45	74	1	—	—	—	—	—	—
1893	—	92	78	26	91	3	—	18	70	4	2	—	—	—	—	—	—
1894	—	25	43	29	301	5	6	14	65	11	2	—	—	—	—	—	—
1895	—	29	132	23	53	3	1	6	45	2	—	—	—	—	—	—	—
1896	—	22	94	29	69	6	—	7	54	3	2	—	—	—	—	—	—
1897	—	30	51	23	34	7	4	21	35	9	—	—	—	—	—	—	—
1898	—	61	62	30	30	6	7	18	20	2	—	—	—	—	—	—	—
1899	—	9	47	14	22	2	10	18	60	23	—	—	—	—	—	—	—
1900	—	28	50	27	401	2	2	23	36	—	—	—	8	—	—	—	—
1901	—	13	51	29	288	3	12	26	38	—	—	—	8	—	—	—	—
1902	—	6	49	16	119	4	1	8	49	8	—	7	3	—	—	—	—
1903	3	7	27	16	51	2	6	17	58	5	—	49	1	—	—	—	—
1904	1	11	50	33	29	4	3	29	43	2	—	39	4	—	—	—	—
1905	1	9	58	47	35	7	8	18	50	7	—	33	4	—	—	—	—
1906	—	6	48	31	23	10	1	37	48	8	—	49	3	—	—	—	—
1907	—	10	44	44	50	6	4	37	42	4	413	63	8	—	—	—	—
1908	—	23	88	55	114	4	6	40	26	379	524	14	1	—	—	—	—
1909	—	18	74	42	119	10	4	66	25	44	514	21	—	—	—	—	—
1910	—	8	54	24	38	4	6	51	26	14	159	16	—	—	—	—	—
1911	—	10	32	22	39	4	13	70	31	433	352	1	1	—	—	—	—
1912	—	1	26	17	93	6	5	52	29	53	71	7	—	—	—	—	—
1913	—	5	29	13	81	4	10	24	28	254	320	2	—	—	—	—	—
1914	—	1	50	12	230	11	15	54	38	161	188	8	—	—	—	—	—
1915	—	—	32	4	245	2	8	68	44	160	177	10	6	—	—	—	—
1916	—	1	42	9	112	8	11	43	41	86	139	13	6	1	—	—	—
1917	—	3	43	6	46	1	9	26	24	28	83	8	3	—	—	—	—
1918	—	1	42	10	21	2	18	34	16	750	121	19	4	—	—	—	—
1919	—	15	12	3	16	4	21	262	18	3	85	26	2	—	—	—	37
1920	—	2	244	8	70	6	3	428	18	9	54	30	—	—	—	—	—
1921	—	—	21	1	14	4	8	541	17	2	105	28	—	—	—	—	—
1922	—	—	6	—	29	1	5	379	14	324	19	29	—	—	—	—	—
1923	—	1	7	1	44	1	4	440	45	10	35	30	—	—	—	—	—
1924	—	1	12	—	41	3	3	217	30	5	30	54	—	—	—	—	—
1925	—	—	27	—	81	4	9	265	35	94	142	117	—	—	1	—	5
1926	—	4	11	2	278	4	11	469	34	534	108	59	—	—	1	—	—
1927	—	4	10	1	205	14	11	344	25	7	76	76	1	1	3	—	—
1928	—	1	17	—	208	7	15	385	24	6	79	64	1	—	—	—	12
1929	—	1	6	—	216	6	4	369	24	226	78	80	—	—	2	—	7
1930	—	—	—	1	238	6	5	588	38	241	59	72	—	—	1	—	3
1931	—	—	1	—	98	1	1	288	19	3	85	71	1	—	1	49	41
1932	—	—	1	—	80	9	1	85	13	242	178	99	—	—	2	28	7
1933	—	—	2	—	181	9	—	109	24	49	189	79	—	—	1	3	2
1934	—	—	1	—	118	10	—	109	28	126	80	158	—	—	—	2	1
1935	—	—	3	—	52	11	1	56	24	300	178	53	—	—	—	5	2
1936	—	—	2	—	437	12	1	24	18	233	261	69	3	—	—	14	14
1937	—	—	1	—	454	6	—	79	26	88	246	218	5	1	—	21	45
1938	—	—	3	—	228	1	—	54	18	12	142	83	14	—	—	19	3

Fig. IV.

PULMONARY TUBERCULOSIS. DEATH RATES PER 1.000 POPULATION

FROM 1891 TO PRESENT TIME



Section IV.—Tuberculosis

The death rate from pulmonary tuberculosis for the year was 1.21 per 1,000 of the population. The following table shows the death-rates each year from 1891 to 1938.

Table 27.—Deaths and Death Rates Pulmonary Tuberculosis.

Year	No. of Deaths	Rate per 1,000 pop.	Year	No. of Deaths	Rate per 1,000 pop.
1891	295	3.93	1915	211	2.88
1892	303	4.04	1916	189	2.46
1893	314	4.18	1917	202	2.63
1894	296	3.94	1918	187	2.43
1895	261	3.48	1919	156	2.04
1896	299	3.98	1920	159	2.07
1897	260	3.46	1921	125	1.64
1898	283	3.77	1922	176	2.30
1899	320	4.26	1923	130	1.64
1900	281	3.74	1924	164	2.09
1901	289	3.80	1925	134	1.71
1902	287	3.79	1926	126	1.60
1903	279	3.67	1927	129	1.60
1904	352	4.63	1928	109	1.39
1905	294	3.86	1929	141	1.79
1906	261	3.43	1930	114	1.45
1907	278	3.65	1931	124	1.56
1908	245	3.22	1932	111	1.40
1909	264	3.47	1933	106	1.35
1910	233	3.06	1934	104	1.34
1911	252	3.29	1935	115	1.46
1912	231	3.01	1936	85	1.06
1913	202	2.62	1937	96	1.20
1914	231	3.01	1938	99	1.21

The number of deaths and the mortality rate are practically the same as the corresponding figures for last year and shew that the general downward trend of this disease has been maintained. There was quite a considerable reduction in the number of deaths from non-pulmonary tuberculosis (13 as compared with 24 in 1938, so that there has been a reduction in the deaths from all forms of tuberculosis. The downward trend in non-pulmonary deaths has also been quite appreciable, especially in the past few years, it is shewn in Table 29 following.

The combined figures for pulmonary and non-pulmonary disease are set out in Table 30. Deaths from non-pulmonary tuberculosis are only available from 1906 onwards, whereas those from the pulmonary form of the disease are on record from the year 1878. It has been thought convenient, however, to commence the Table concerned from the year 1891. These tables are of interest in shewing the slow but steady conquest which has been made against this disease.

While the figures shewn in Table 28 are instructive in illustrating the steady decline in pulmonary tuberculosis over the past forty-seven years, they afford no information as to the age-groups at which mortality is heaviest and how it is distributed between the sexes at the various

age-groups. Such information is instructive as it helps us to visualise some of the factors which play a determining part in the mortality from tuberculosis. Through the courtesy of the Registrar-General I am able to produce the following table in which deaths have been distributed according to age and sex. Unfortunately it is not possible to go back further than 1923, in which year the deaths registered were for the first time distributed for statistical purposes to the area of residence of the deceased.

Table 28.—Cork City. Deaths from Pulmonary Tuberculosis.

Year	Sex	All Ages	Under 1 year	1–5	5–15	15–25	25–35	35–45	45–55	55–65	65 and over
1923	M	70	—	2	4	16	12	17	14	4	1
	F	66	—	2	4	13	19	14	8	4	2
1924	M	80	—	2	1	13	16	20	16	9	3
	F	73	—	—	2	17	23	16	7	5	3
1925	M	59	1	3	2	10	17	15	8	3	—
	F	77	1	2	5	23	20	13	6	4	3
1926	M	65	1	2	4	14	14	16	7	5	2
	F	60	—	—	5	11	19	12	9	2	2
1927	M	62	1	1	1	1	15	22	10	4	1
	F	72	—	4	3	16	18	16	10	4	1
1928	M	49	—	1	1	11	10	11	10	4	1
	F	67	—	1	4	15	21	12	7	7	—
1929	M	65	—	2	—	16	14	16	11	2	4
	F	80	—	—	2	24	24	17	7	2	4
1930	M	58	—	—	1	16	16	14	9	2	—
	F	46	—	1	2	9	14	10	5	3	2
1931	M	62	—	1	—	12	16	11	13	8	1
	F	61	—	1	4	15	17	14	6	3	1
1932	M	58	—	—	1	7	22	15	8	4	1
	F	54	—	1	3	14	21	5	7	3	—
1933	M	52	—	—	—	8	17	14	11	1	1
	F	53	—	—	—	18	12	10	9	3	1
1934	M	53	—	—	2	6	13	16	12	3	1
	F	50	—	—	1	14	12	16	3	3	1
1935	M	58	1	1	—	10	9	20	13	4	—
	F	54	—	—	2	11	18	9	11	3	—
1936	M	38	—	—	2	7	11	15	8	5	—
	F	34	—	1	—	6	8	7	5	6	1
1937	M	56	—	—	—	9	10	13	13	8	2
	F	40	—	—	2	10	9	10	4	5	—
1938	M	61	—	—	—	12	12	13	17	4	3
	F	38	—	—	—	4	15	10	7	2	—

In Table 29 is set out a record of the deaths due to non-pulmonary tuberculosis from 1906 to the present time, together with the rates per 1,000 of the population. It will be noted that the period covered by this table dates only from 1906, in contradistinction to Table 27 which covers deaths from pulmonary tuberculosis from the year 1891. Non-pulmonary deaths are not available for the years prior to 1906.

Table 29.—Deaths and Death Rates from Non-pulmonary Tuberculosis.

Year	No. of Deaths	Rate per 1,000 pop.	Year	No. of Deaths	Rate per 1,000 pop.
1906	81	1.06	1923	32	0.40
1907	84	1.10	1924	32	0.40
1908	93	1.08	1925	31	0.39
1909	78	1.02	1926	46	0.58
1910	75	0.97	1927	35	0.44
1911	73	0.95	1928	29	0.36
1912	71	0.92	1929	17	0.21
1913	79	1.02	1930	25	0.31
1914	79	1.02	1931	46	0.57
1915	72	0.93	1932	45	0.56
1916	69	0.89	1933	19	0.24
1917	78	1.00	1934	21	0.25
1918	75	0.96	1935	29	0.36
1919	58	0.74	1936	20	0.25
1920	46	0.59	1937	24	0.29
1921	34	0.43	1938	13	0.16
1922	39	0.50			

The reduction of mortality in respect of these diseases is even more marked than that of the pulmonary form. The number of deaths attributed to non-pulmonary forms of tuberculosis in 1938 was the smallest ever recorded. This reduction has been so marked that it would be unwise not to expect an increased number of such deaths during the next few years. In the following table the figures for pulmonary and non-pulmonary disease have been combined and the rates per 1,000 of the population worked out.

Table 30.—Combined Deaths and Death-rates from Pulmonary and Non-pulmonary Tuberculosis.

Year	Pulmonary Deaths	Non-pulmonary Deaths	Total	Rate per 1,000 pop.
1906	261	81	342	4.49
1907	278	84	362	4.74
1908	245	93	338	4.42
1909	264	78	342	4.47
1910	233	75	308	4.01
1911	252	73	325	4.23
1912	231	71	302	3.92
1913	202	79	281	3.64
1914	231	79	310	4.02
1915	211	72	283	3.66
1916	189	69	258	3.33
1917	202	78	280	3.61
1918	187	75	262	3.37
1919	156	58	214	2.75
1920	159	46	205	2.64
1921	125	34	159	2.03
1922	176	39	215	2.75
1923	130	32	162	2.05
1924	164	32	196	2.50
1925	134	31	165	2.10
1926	126	46	172	2.18
1927	129	35	164	2.08
1928	108	29	138	1.74
1929	141	17	158	2.00
1930	117	25	142	1.78
1931	124	46	170	2.13
1932	111	45	156	1.95
1933	106	19	125	1.56
1934	107	21	128	1.59
1935	115	29	144	1.78
1936	85	20	105	1.29
1937	96	24	120	1.48
1938	99	13	112	1.38

Many factors have been concerned in the reduced mortality from tuberculosis and in view of the figures shewn in these tables the following contribution (taken from *The Lancet*, 10th September, 1938, p. 628) is of considerable interest as an analysis of present knowledge on this question.

The nature of the association between the mycobacteria and the human species has attracted speculation, more or less fruitful, ever since the discovery of the tubercle bacillus fifty years ago. In a comprehensive study, begun in Berlin and continued in Baltimore, Dr. Georg Wolff has collected the basic facts and figures in the epidemiology of tuberculosis and gives his own interpretation of the aetiological factors concerned.[1] Some of his material was included in lectures given last autumn in London.[2] Dr. Wolff insists that the mortality-rate from tuberculosis for the civilised world of 200 or even 100 years ago is not really accurately known. His figures indicate, however, that during the nineteenth century up to the time of the discovery of the tubercle bacillus the mortality from tuberculosis in the European capitals may have been anything between 250 (London and Amsterdam) to 930 (Stockholm) per 100,000. Now most of the large cities can boast of mortalities

1 *Hum. Biol.* 1938, **10**, 106 and 251. 2 See *Lancet*, 1937, **2**, 914.

well under a hundred, though the actual causes of the decline are still disputable. The factors which have operated in bringing about a decline are specific, hereditary, and social. With regard to the specific factor, it is a moot question how far the fall in mortality can be attributed to a general epidemic saturation of the civilised races, or in other words to a natural protective inoculation, while the consideration of individual resistance largely centres round the term " constitution " which eludes precise definition. H. Münter's work on monovular and binovular twins may have shown that identical twins behave, in regard to the incidence of tuberculosis, more uniformly than merely fraternal pairs, but nobody is prepared to admit the existence of a specific tuberculous gene. R. Pearl's study of family histories has elicited the fact that where one or both parents are actively tuberculous virtually three-fourths of the non-tuberculous offspring have been in just as close contact with active open cases as their brothers and sisters who develop the disease. The belief that an endogenous constitution of the whole population plays a part in the epidemiology of tuberculosis is not supported as yet by figures. The third factor—viz., social environment—is more approachable. Dr. Wolff believes it is only in a limited sense correct to say that tuberculosis is a domiciliary disease. Such a statement might be correct if overcrowding were always an index of social conditions. A bad or insufficient house is only a part of the problem of poverty, and in spite of obvious housing scarcity the rate of mortality from tuberculosis continued to fall in post-war Germany. The mass effect of malnutrition in war time is all too clear and the available information on certain industrial diseases such as silicosis is equally convincing. The birth-rate is now declining almost everywhere, and where the decline is greatest, as in Holland, Denmark, and Scotland, the decline in mortality from tuberculosis is most marked. But, as Dr. Wolff sagely remarks, statistics may show correlations, they do not reveal causations. He quotes Bradford Hill's conclusion, from a statistical study, that the level of mortality from pulmonary tuberculosis among young adults in certain rural districts was directly or indirectly influenced by the movement of the population, especially internal migration. Urban districts which in the last decade attracted young people showed on the average a decrease of mortality, whereas those that had lost their population exhibited a tendency to increased mortality. On the therapeutic side it is difficult to appraise results of treatment in statistical terms ; all that can be adduced is a modest increase of cures, assessed at from 3 to 6.7 per cent. of all patients. With social insurance we are perhaps on safer ground. In parts of Germany—e.g., Baden—the insured manual workers, and still more the insured blackcoated workers, now have less risk of dying from tuberculosis than classes of more independent position. And it is, Dr. Wolff notes, precisely the black-coated worker and the civil servant of intermediate grades who seek to protect themselves by keeping their families small, whereas upon the old uninsured middle-class illness has fallen with the heaviest hand—although of course this does not imply that there is likely ever to be a lower tuberculosis mortality among the poor than among the rich. There is little evidence in the comparatively short period under observation that the virus of tuberculosis has changed sensibly or that the hereditary qualities of nations have varied, but there is a close connexion between economic well-being and tuberculosis and this social factor is gradually making itself felt. Social insurance and medical treatment are putting the working-classes in a better position than they were half a century ago. The aim, in short, of a rational anti-tuberculosis campaign is still further to improve the social environment until tuberculosis is brought almost to the vanishing point already reached in Europe by leprosy.

The number of new patients examined at the Tuberculosis Dispensary during the year amounted to 268, of whom 202 were adults and 66 children. 105 of the adults and 25 of the children were found to be suffering from tuberculosis in one form or another and appropriate treatment was afforded.

As in former years the new cases dealt with at the Tuberculosis Dispensary who presented signs of advanced disease was disproportionately high. 62 per cent. of such were found to be in Stage III. and 33 per cent. in Stage II. ; in other words, no less than 95 per cent. of the new cases were suffering from definitely established

disease recognisable by ordinary clinical methods. These figures are similar to those of former years and must be regarded with considerable dissatisfaction, as little or nothing can be done in regard to the treatment of such advanced cases apart from palliative methods. The main factor in the production of this state of affairs appears to be the failure of patients to seek treatment sufficiently early.

Table 31.—Showing the proportion of early, moderately advanced and advanced cases attending the Tuberculosis Clinic for the first time (1930 to 1938).

TYPE	1930	1931	1932	1933	1934	1935	1936	1937	1938
Stage I. (Early)	15%	8%	9%	6%	14%	13%	6%	9%	5%
Stage II. (Moderately Advanced)	36%	50%	38%	39%	28%	30%	43%	38%	33%
Stage III. (Advanced)	49%	42%	53%	55%	58%	57%	51%	53%	62%

The number of cases admitted to sanatorium during the year was as follows :—

	Males	Females	Total
Insured	23	10	33
Uninsured	3	4	7
Children	—	—	—
Total	26	14	40

The number of patients discharged from sanatorium during the year was as follows :—

	Males	Females	Total
Insured	26	9	35
Uninsured	2	6	8
Children	—	—	—
Total	28	15	43

Advanced cases who are not likely to derive benefit from sanatorium treatment who cannot receive adequate treatment in their own homes are admitted to St. Patrick's Hospital. The following cases were admitted during the year :—

	Males	Females	Total
Insured	27	2	29
Uninsured	11	15	26
Total	38	17	55

The following cases died or were discharged from the Institution :—

	Males	Females	Total
Insured	29	3	32
Uninsured	14	17	31
Total	43	20	63

One male child was admitted to Cappagh Open-air Hospital, Dublin. During the same period one male was discharged. These were all cases of joint tuberculosis requiring prolonged treatment under open-air conditions for which there are no facilities in the city at present. The need of such an institution to serve the city and the south of Ireland generally is great, and it is to be hoped that suitable premises for this purpose may be acquired in the near future. Such a hospital could also serve as a convalescent home for delicate and pre-tuberculosis children, for which there is also a great need.

For the first time since the inception of the scheme, the Cork District Hospital was officially utilised for the treatment of both pulmonary and non-pulmonary cases. Owing to the size and scope of this institution, it is possible to deal with both types of the disease as well as advanced and early cases of pulmonary disease, the latter for the induction of pneumothrax. The different types are treated in different buildings. Particulars are shown in Table 34.

SPUTUM EXAMINATIONS.

Examinations of specimens of sputum is carried out in the laboratory attached to the Tuberculosis Clinic. 336 such specimens were examined during the past year, of which 49 were found to contain tubercle bacilli while 287 were negative. Of the 336 specimens examined 47 were submitted by medical practitioners. The following table shows the number of specimens examined, and the results obtained during the past seven years.

Year	Total	Positive	Negative
1931	375	90	285
1932	440	94	346
1933	502	118	384
1934	519	121	398
1935	512	94	418
1936	467	93	374
1937	511	73	438
1938	336	49	287
Totals	3662	732	2930

In all cases attending the clinic, sputum examination is a routine procedure, and pocket flasks are issued to all those who are found to be positive. A register is kept of such cases and attention in regard to prevention is concentrated on them. Fifty-one flasks were issued during the year.

The number of notifications received during the year was 147. Prior to 1930 such notifications were for the period from the 1st April to 31st March following. Notifications for previous years were as follows :—

1925–26	110
1926–27	108
1927–28	73
1928–29	116
1929–30	179
1930 (April–Dec.)....	133
1931	196
1932	136
1933	164
1934	112
1935	154
1936	154
1937	166
1938	147

In the following table notifications, from the year 1930, have been analysed as to age and sex distribution.

Table 32.—Notifications of Tuberculosis distributed according to Sex and Age.

Year	Total	Sex	All Ages	Under 5 yrs	5–15	15–45	45–60	60 and up
1930	133	M	77	4	11	50	11	1
		F	56	5	11	37	2	1
1931	196	M	114	9	24	64	15	2
		F	82	7	19	53	3	—
1932	136	M	71	5	11	42	11	2
		F	65	1	6	48	7	3
1933	159	M	89	5	10	59	14	1
		F	70	5	8	48	8	1
1934	112	M	43	1	6	26	9	1
		F	69	4	10	41	9	5
1935	154	M	83	7	14	43	14	5
		F	71	5	15	40	7	4
1936	154	M	76	9	10	33	16	8
		F	78	3	12	55	6	2
1937	166	M	91	5	10	47	25	4
		F	75	2	10	52	5	6
1938	147	M	78	4	6	52	15	1
		F	69	4	10	49	5	1

X-RAY EXAMINATION.

Ninety-three X-Ray examinations were carried out during the year. This form of examination is utilised for the most part in connection with cases presenting doubtful diagnostic features. All cases of bone and joint disease are subjected to X-Ray examination as routine. The method is also availed of very largely in connection with artificial pneumothorax treatment not only for the purpose of estimating, in the first instance, whether cases are suitable or not but, at a later stage, to judge the progress which they are making.

The number of visits made by the Tuberculosis Nurse was 570. As was pointed out in previous reports, a great deal of importance is attached to this particular branch as very often the advice tendered may be useful in limiting the spread of infection. Hitherto these efforts were to a very great extent nullified by the conditions under which a great number of our cases have lived. As pointed out before, a great many of these families have existed under the most miserable conditions of overcrowding and sanitation which, undoubtedly, have contributed very materially to the high rate of prevalent mortality and which have nullified to a large extent the efforts which have been made to improve the figures. The present schemes for rehousing the working classes will almost certainly ameliorate these conditions and should be reflected in later tears in improved statistics as regards tuberculosis. The question of rehousing is dealt with in the appropriate section and it will suffice to mention here that large numbers of families have already been transferred from dark insanitary dwellings in narrow streets and alleys to decent new houses laid out to catch the maximum amount of sunlight and with ample provision for external and internal ventilation. Apart from the physical benefits accruing from this change the still greater mental improvement in the outlook of the people themselves should play a very important part in reducing morbidity and mortality from these diseases, and in this way prove, in the long run, an actual saving in expenditure.

Table 33.—Showing particulars of patients who received sanatorium treatment during the year.

	Under treatment on 1st Jan. 1938	New cases admitted during the year	Cases discharged during the year	Under treatment on 31st Dec., 1938	No. of Cases treated during the year
Insured Males	4	20	22	2	24
,, Females	1	10	9	2	11
Uninsured Males	1	3	2	2	4
,, Females	3	4	6	1	7
Ex-Service men	1	3	4	—	4
Male Children	—	—	—	—	—
Female children ...	—	—	—	—	—
Totals ...	10	40	43	7	50

Table 34.—Particulars of cases treated at Cork District Hospital.

	Under treatment on 1st Jan. 1938	New cases admitted during the year	Cases discharged during the year	Under treatment on 31st Dec., 1938	No. of Cases treated during the year
Male Adults	—	37	28	9	37
Female Adults	—	29	22	7	29
Male Children	—	8	7	1	8
Female Children	—	7	5	2	7
Totals	—	81	62	19	81

Table 35.—Particulars of patients treated in St. Patrick's Hospital during 1938.

	Under treatment on 1st Jan. 1938	New cases admitted during the year	Cases discharged during the year	Under treatment on 31st Dec., 1938	No. of Cases treated during the year
Insured Males	7	21	23	5	28
,, Females	1	2	3	—	3
Uninsured Males	5	10	13	2	15
,, Females	3	15	17	1	18
Ex-Servicemen	1	6	6	1	7
Male children	1	1	1	1	2
Female children	—	—	—	—	—
Totals	18	55	63	10	73

Table 36.—Particulars of cases treated in the North Infirmary during 1938.

	Under treatment on 1st Jan. 1938	New cases admitted during the year	Cases discharged during the year	Under treatment on 31st Dec., 1938	No. of Cases treated during the year
Male children	—	—	—	—	—
,, adults	—	1	1	—	1
Female children	—	3	3	—	3
,, adults	—	—	—	—	—
Totals	—	4	4	—	4

Table 37.—Particulars of cases treated in the South Infirmary during 1938.

	Under treatment on 1st Jan. 1938	New cases admitted during the year	Cases discharged during the year	Under treatment on 31st Dec., 1938	No. of Cases treated during the year
Male children	1	1	1	1	2
,, adults	1	—	1	—	1
Female children	1	1	1	1	2
,, adults	—	1	—	1	1
Totals	3	3	3	3	6

Table 38.—Particulars of cases treated in St. Mary's Open-Air Hospital Cappagh, Co. Dublin.

	Under treatment on 1st Jan. 1938	New cases admitted during the year	Cases discharged during the year	Under treatment on 31st Dec., 1938	No. of Cases treated during the year
Female children	1	—	—	1	1
Male children	3	1	1	3	4
Totals	4	1	1	4	5

Table 39.—Particulars of cases treated in Victoria Hospital during 1938.

	Under treatment on 1st Jan. 1938	New cases admitted during the year	Cases discharged during the year	Under treatment on 31st Dec., 1938	No. of Cases treated during the year
Male children	1	—	—	1	1
Female children	3	1	1	3	4
Totals	4	1	1	4	5

Table 40.—Particulars of cases treated at St. Joseph's Hospital, Mount Desert, during 1938.

	Under treatment on 1st Jan. 1938	New cases admitted during the year	Cases discharged during the year	Under treatment on 31st Dec., 1938	No. of Cases treated during the year
Insured Males	10	26	26	10	36
,, Females	4	5	8	1	9
Uninsured Males	2	5	5	2	7
,, Females	1	12	11	2	13
Male children	—	—	—	—	—
Female children	—	—	—	—	—
Totals	17	48	50	15	65

Table 41.—Particulars of cases treated at Coole Open-Air Hospital, Co. Westmeath.

	Under treatment on 1st Jan., 1938	New cases admitted during the year	Cases discharged during the year	Under treatment on 31st Dec., 1938	No. of Cases treated during the year
Male Children	4	—	1	3	4
Total	4	—	1	3	4

Table 42.—Return of number of patients treated under the Tuberculosis Scheme, during the year ended 31st December, 1938.

	Pulmonary Tuberculosis			Non-Pulmonary Tuberculosis			Total
	Children under 15 years	Other Persons		Children under 15 years	Other Persons		
		Males	Females		Males	Females	
1.—*Insured Patients* :							
(i) No. remaining under treatment							
(a) On 1st. Jan., 1938	—	89	37	—	1	2	129
(b) On 31st Dec., 1938	—	96	31	—	5	4	136
(ii) No. of new patients treated during year	—	36	9	—	3	3	51
(iii) No. of cases under observation at close of year 1938	—	10	6	—	—	—	16
2.—*Other Patients* :							
(i) No. remaining under treatment							
(a) On 1st Jan., 1938	2	38	41	66	7	11	165
(b) on 31st Dec., 1938	2	30	52	74	4	6	168
(ii) No. of new patients treated during year	1	19	31	24	2	2	79
(iii) No. of cases under observation at close of year 1938	22	11	17	5	—	—	55

ARTIFICIAL PNEUMOTHORAX.

Two new cases received artificial pneumothorax treatment during 1938. The inductions were carried out by the Tuberculosis Officer, one at the Cork District Hospital and one at St. Joseph's Hospital. The subsequent management was carried out at the Pneumothorax Clinic attached to the Tuberculosis Department. Routine X-Ray examinations are made at the North Infirmary by arrangement with Dr. Fielding, Radiologist. The number of cases treated during the year was eleven, of whom three are still undergoing treatment. 163 re-fills were given and 35 X-Ray examinations were made in connection with the treatment.

The following note, which was contributed by Dr. P. F. Fitzpatrick (Asst. M.O.H.), appeared in *The Irish Journal of Medical Science*, issue of November, 1938, and is re-published by kind permission of the Editor of that journal.

ARTIFICIAL PNEUMOTHORAX IN CHILDREN.

Clinical notes on two cases of pulmonary tuberculosis in children treated by artificial pneumothorax are presented.

In order to understand the indications for this therapeutic measure it will be necessary to consider briefly how pulmonary tuberculosis shows itself in children, and to define primary and secondary tuberculosis of the lung, for the methods of dealing with these different manifestations of attack by the same organism are not the same.

Primary tuberculosis of the lung is the name given to a reaction which the lung at times shows to what is believed to be the first successful attack by the tubercle bacillus. It is rarely possible by clinical examination to find this condition. Frequently there is no appreciable systemic disturbance and the child may not complain. The *x*-ray picture, however, is quite typical. A homogenous shadow appears in the upper one-third of the lung. This shadow has a well defined lower margin, crescentic in outline with convexity upwards. The neighbouring root glands are enlarged. There is absence of the strippling or mottling which is characteristic of secondary tuberculosis. Why primary tuberculosis or, as it is also called, epituberculosis, should appear in such a form can only be conjectured having regard to dosage of infection, virulence, a time factor and resistance of the host. It is important to know that the condition exists and it is essential in view of treatment and especially prognosis to recognise it. The treatment is conservative and the prognosis good, subsequent *x*-ray examinations showing clearing of the lung field which advances from periphery to root.

Secondary tuberculosis of the lung, also termed adult type infection, is similar in many ways to the disease as it generally appears in adult life. The physical signs, too, are somewhat the same. They are,

however, more readily discernible in children, due to the relative thinness of the chest wall and perhaps greater activity of the lesions. The *x*-ray appearances show the characteristic mottling without the clearly defined boundary line of primary tuberculosis and the sputum, absent as a rule in primary tuberculosis, is present and contains tubercle bacilli. The prognosis of secondary tuberculosis in children is bad. Little hope can be entertained of final arrest of disease. It frequently runs a very chronic course with alternating periods of quiescence and activity, when new foci are established, until the greater part of the lung tissue is affected. This process may go on for some years. When the child is well, which he is usually, he is able to be about with his playmates. One patient of ten years at present under observation has infiltration of nearly the whole of both lungs. He has been in this condition now for three years. Yet he is generally up and, apart from some cyanosis, looks, what in fact he is, a thin wiry boy. The danger of dissemination of this disease in these cases will be readily understood. Artificial pneumothorax offers a solution of many of our difficulties in dealing with this condition for it represents the only agent of proved value in the treatment of tuberculous lesions, namely physiological rest.

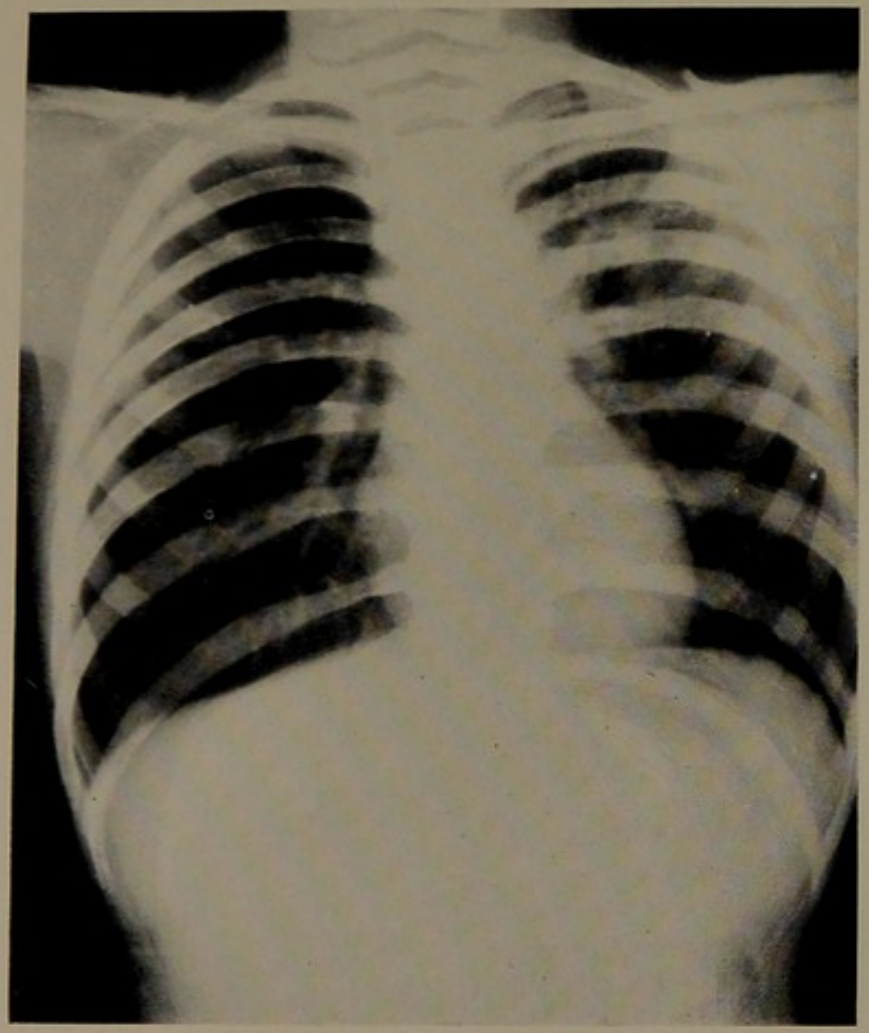
The selection of the case suitable for treatment depends on the extent of the lesion—it is essential that the disease be confined to one lung—and the temperament of the child. Temperamentally children are not the best patients for this type of procedure. If, however, a little trouble be taken to get the child's co-operation there should be no great difficulty. These two children were fairly normal samples of our child population. One of them never quite got over the excitement of the refills and these usually began with a combination of fear and hysteria. This, however, was never sufficient to prevent a refill being given.

Case No. 1. *Peggy T., aged* 12 *years.*

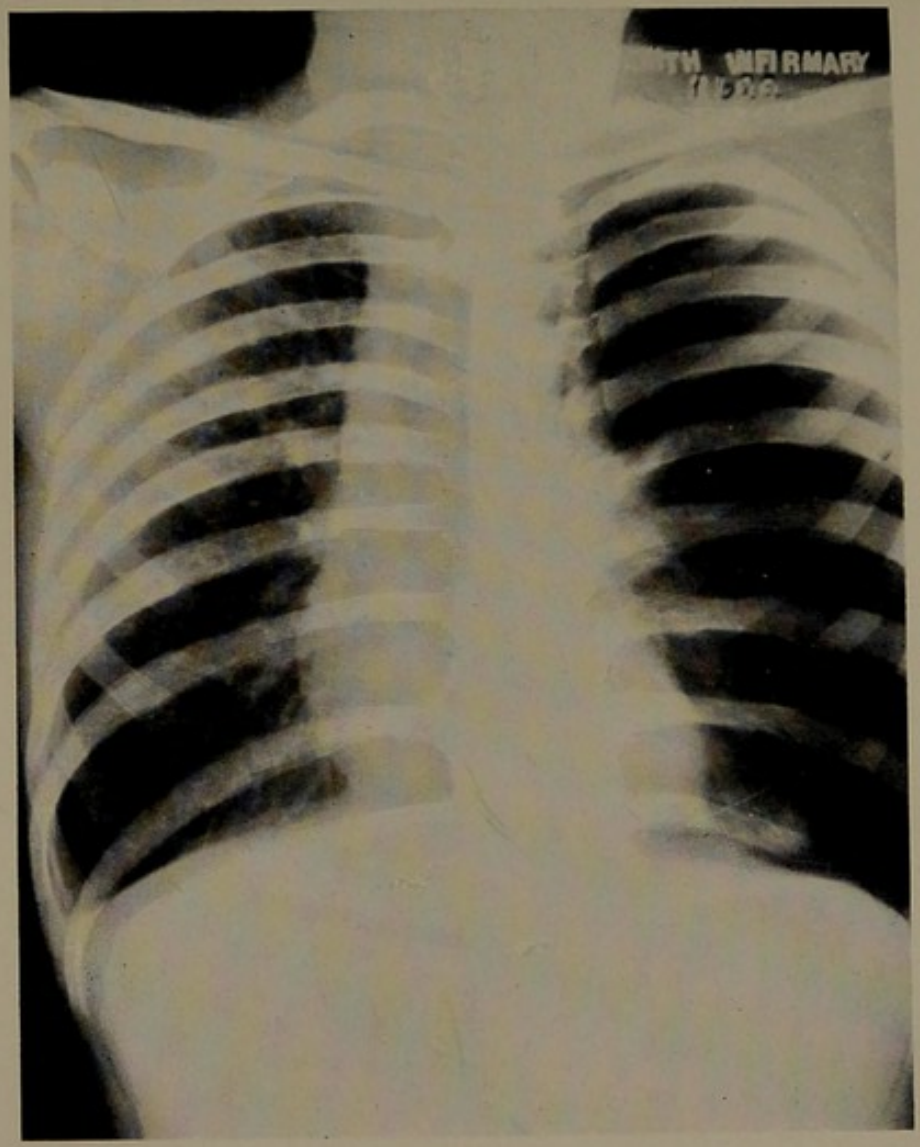
Peggy is the third child of a family of six. Her eldest sister died from acute pulmonary tuberculosis two months before Peggy came for examination. Her mother died from pulmonary tuberculosis 12 months ago. Her home was in a slum area.

She developed a cough in March, 1935, about the time her sister died. Cough continued up to the time of her examination in May of that year and was accompanied by increasing lassitude and dyspnoea. She was a fair-haired, moderately well nourished child and conformed to the sanguine type mentioned in textbooks. Her chest musculature was fair. There was no wasting. The percussion note over the upper one-third of the left lung was slightly impaired. The breath sounds over this area were diminished and accompanied by fine rales. There was slight pyrexia. The sputum, scanty in amount, was positive for tubercle bacilli. *x*-ray examination showed a small area of infiltration in the upper zone of the left lung. Right lung was normal. She was admitted to hospital under Professor J. M. O'Donovan, who undertook the induction, 17th May, 1935, and discharged six weeks later with a good collapse of the entire lung.

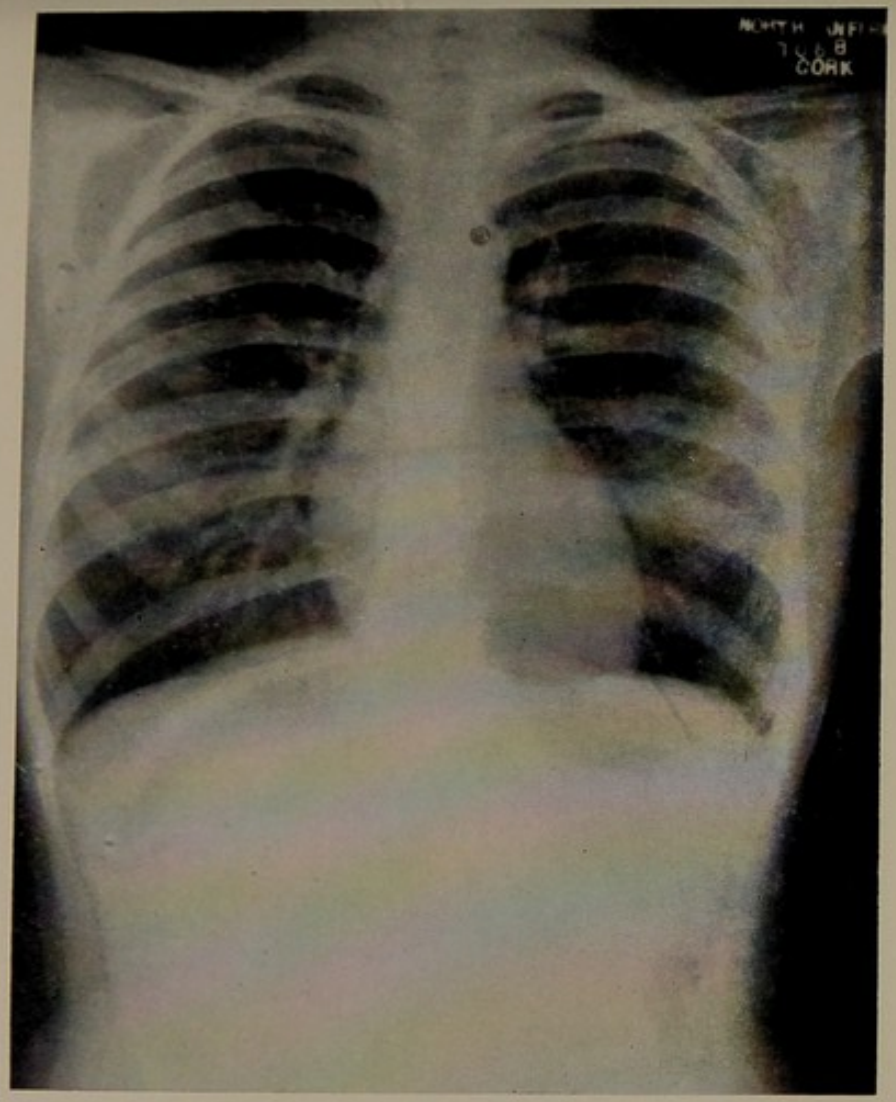
I endeavoured, owing to the unsuitability of her home conditions, to get this child to consent to go to a tuberculosis institution for further management, but she resolutely refused to go. She had no other inpatient treatment.



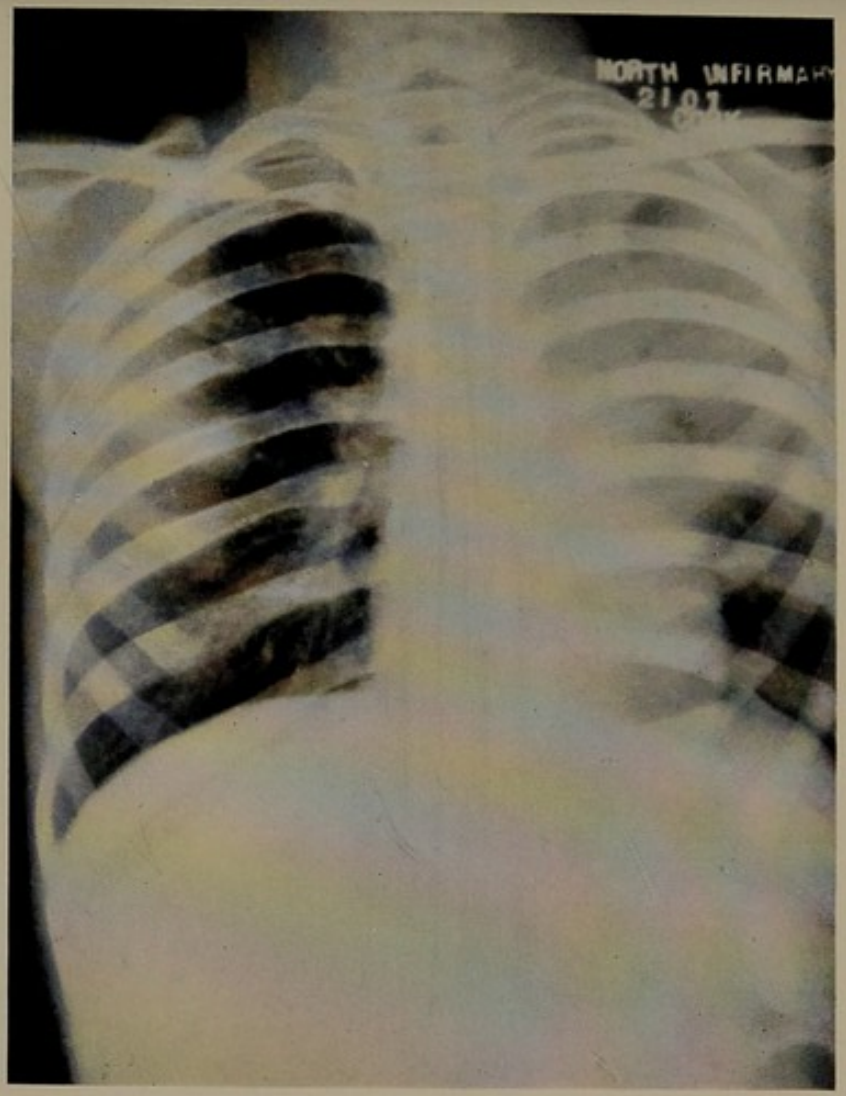
Case No. 1. Plate I. 15/5/35.
Infiltration upper zone, left lung.



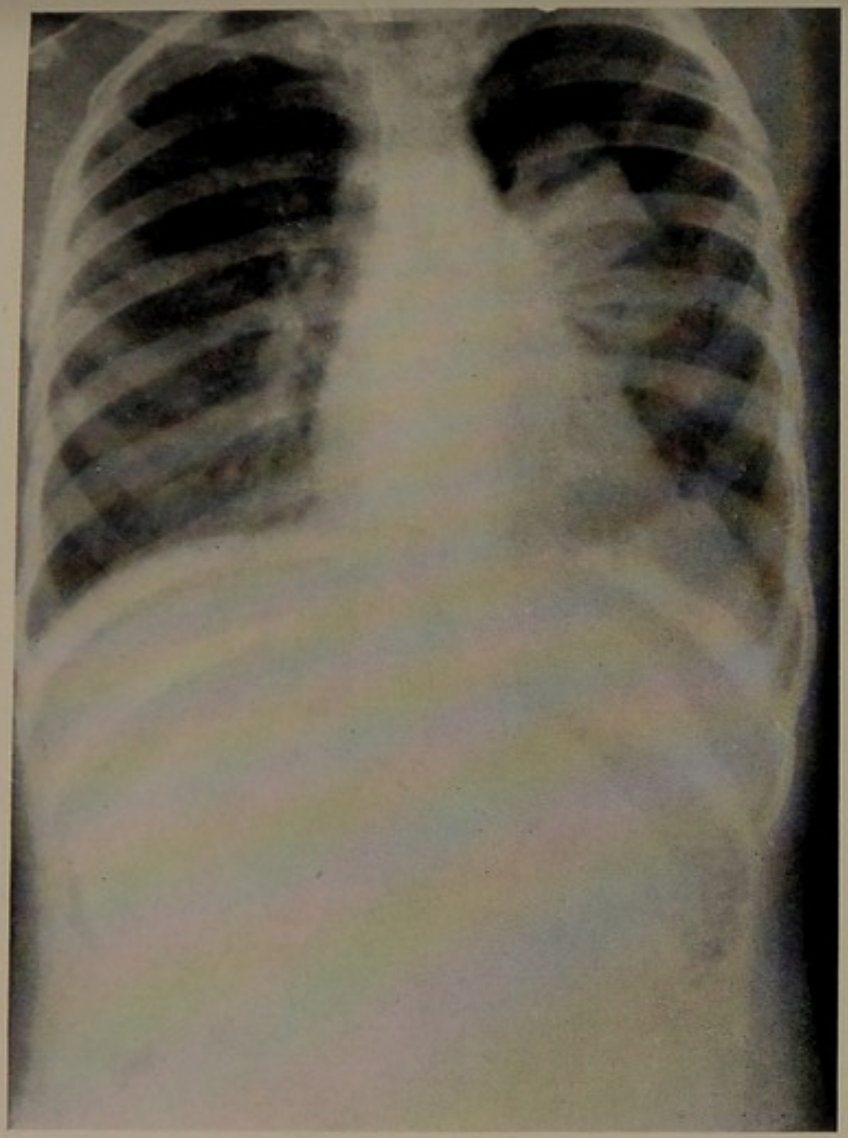
Case No. 1. Plate II. 9/9/35. Collapse—left lung.



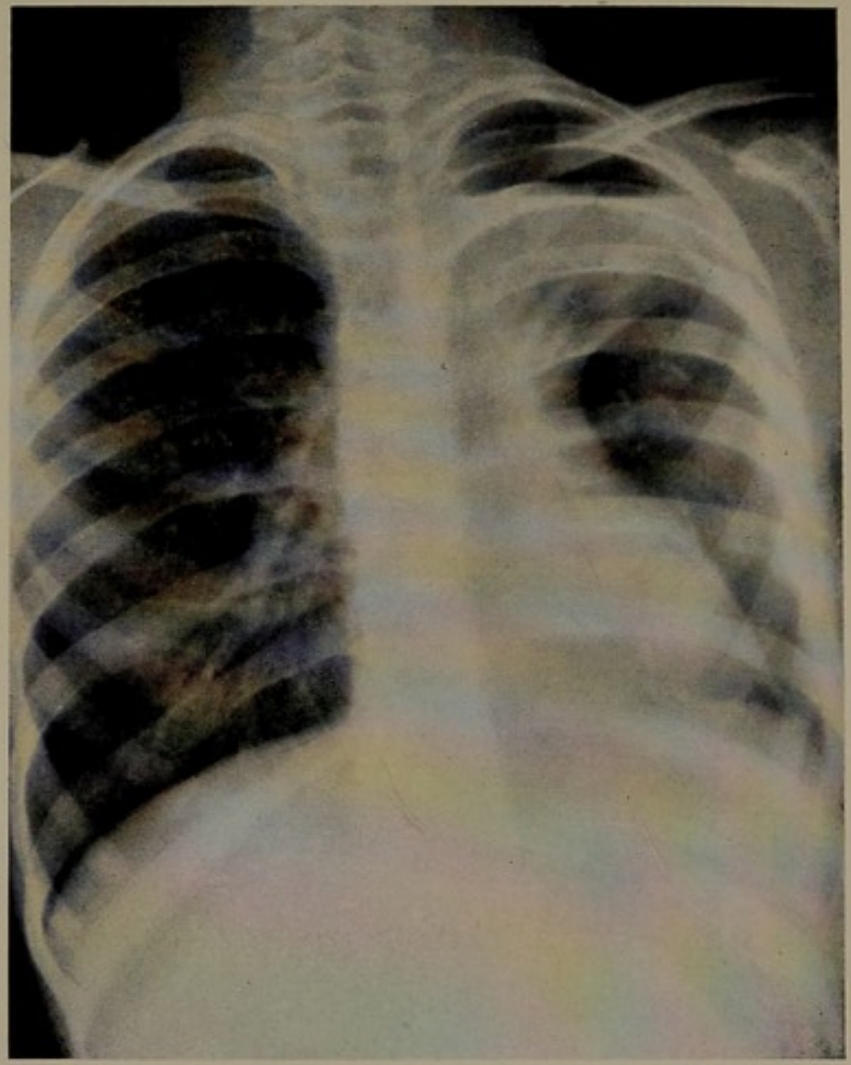
Case No. 1. Plate III. 26/4/38.
Just previous to complete expansion.
Lesions now represented by minute calcified areas.



Case No. 2. Plate I. 9/10/35. Infiltration with cavitation upper and middle zones, left lung.



Case No. 2. Plate II. 12/2/36. Selective collapse at apex. Base has expanded.



Case No. 2. Plate III. 19/9/36.
Lung almost completely expanded. Lesions fibrosed.
Fluid level below clavicle.

The subsequent behaviour of this case at no time gave rise to anxiety. Refills, as in the other case, were given at fortnightly intervals. There were no complications and no effusion occurred. A point of some interest was that the visceral pleura, even after three years of artificial pneumothorax when expansion was allowed to take place, never thickened and was seen only with difficulty in the *x*-ray examinations. The films show this. She is now, three years later, without symptoms, normal for her age and leading an unrestricted life. Her schooling was interrupted for three months at the beginning of treatment.

Case No. 2. Susan W., aged 11 years.

Susan is the eldest child of a family of eight. There was no family history of tuberculosis.

She developed a cough six weeks before coming for examination, 7th October, 1935. This had become very troublesome and was accompanied by blood-stained sputum and increasing weakness. She looked very ill. The temperature at 11 a.m. was 102.5° F. Her chest musculature was poor with wasting of the pectoral muscles at the left side. The percussion note on this side was markedly impaired over the upper half. Breath sounds were bronchial and there were numerous rales. The sputum was positive for tubercle bacilli.

The *x*-ray examination showed a moderately extensive area of infiltration in the upper and middle zones of the left lung. The appearances were suggestive of primary tuberculosis which had become secondary through extension by contiguity. This was a case of acute phthisis with severe toxaemia and little prospect of recovery without active treatment. Owing to lack of vacancy it was not possible to have her admission to hospital effected until ten days after I first saw her. During this time her condition became worse. Cough, sputum and haemoptysis increased and the toxaemia became more severe.

She was admitted to hospital, under Professor J. M. O'Donovan, 17th October, 1935, and discharged to a tuberculosis hospital under my care four weeks later. A moderately good collapse was then in evidence. The refills were continued in hospital for 11 months, when obliterating pleurisy set in and the lung gradually expanded.

She is now, three years after the onset of disease, without symptoms and leading a normal life.

The conditions primary and secondary tuberculosis in children are briefly defined and clinical notes given of two cases of secondary tuberculosis of the lung in children treated by artificial pneumothorax.

Section V.

Maternity and Child Welfare.

(A) INFANT MORTALITY.

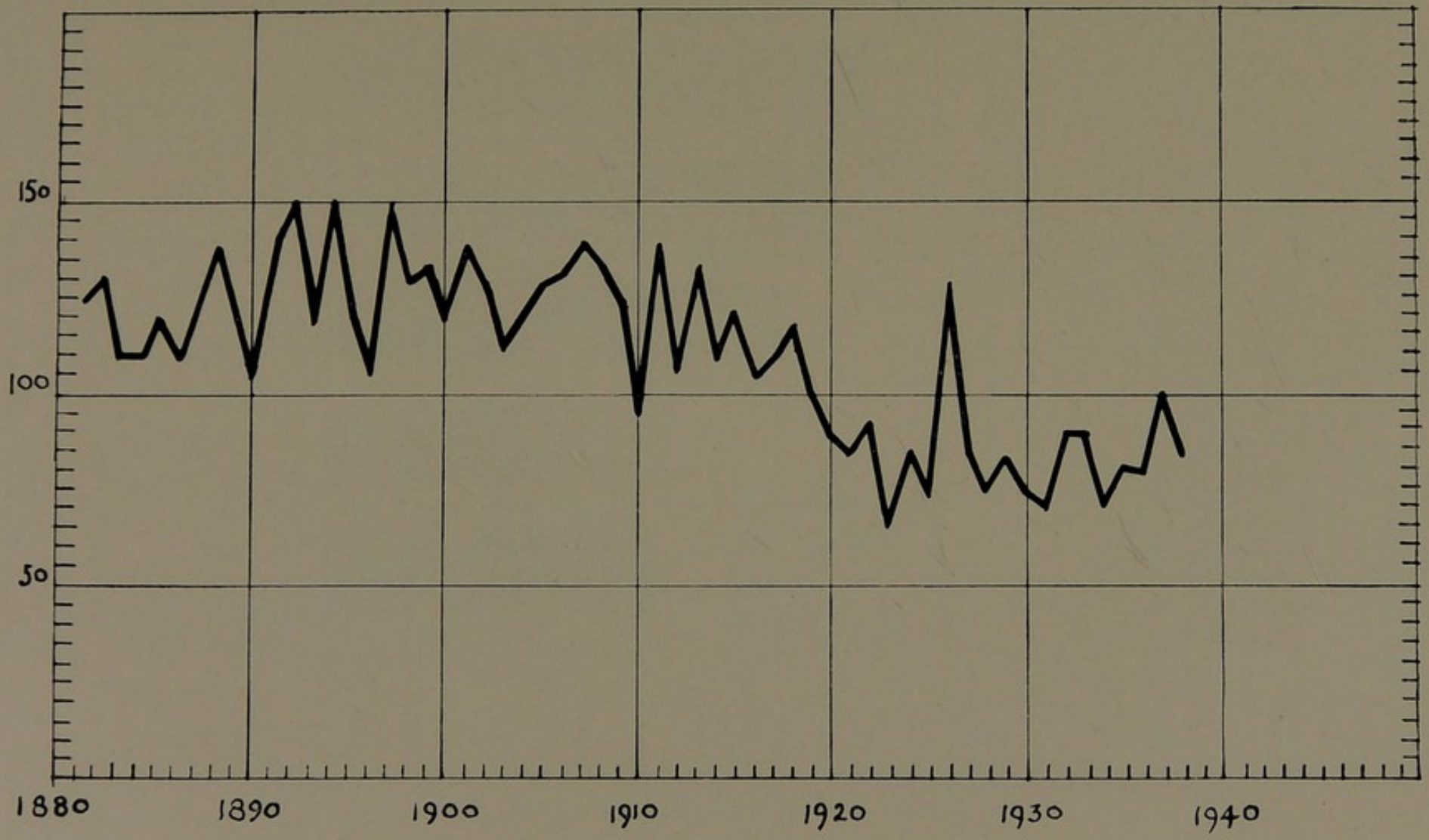
The number of deaths of infants under one year of age amounted to 129, which is equivalent to an infant mortality rate of 75.5 per 1,000 live births. The corresponding figures last year were 187 and 103 per 1,000 respectively. The principal contributory causes were as follows :—

Premature birth and congenital debility	38 (50)
Diarrhoea and enteritis	30 (45)
Broncho-pneumonia	18 (30)
Convulsions	8 (19)
Marasums	6 (10)

The figures in brackets represent the corresponding numbers in the previous year. There is a definite reduction under every heading. In addition to the deaths recorded above there were also four due to infectious disease (viz. 3 from whooping cough and 1 from cerebro-spinal meningitis). Four deaths each were also recorded from bronchitis and lobar pneumonia as well as five from simple meningitis. In comparing this year's infant deaths with those of the previous year it would be very easy to fall into the temptation of attributing the reduction to improved administrative methods and improved reception of them on the part of the public. Posibly this factor has played some part in the reduction but we cannot ignore the fact that probably the most potent element in effecting the reduction was the climatic conditions which prevailed over the greater part of the year and particularly during the late summer, autumn and right through the winter. In summer there was an excessive amount of rain accompanied by temperatures well below the average, in the later months the rain continued and temperatures (except for a cold spell just before Christmas) remained relatively high, so that for the greater part of the winter the weather may be described as having been wet but equable. The rain and low temperatures experienced during the summer must have played a definite part in the reduced mortality from enteritis, because on the one hand there was a maximum reduction of dust from the excessive rainfall and on the other, a minimum development of flies due to the low temperature and unfavourable weather conditions generally. Dust and flies are two potent elements in the production of gastro-enteritis and the reduction in infant mortality noted this year must be regarded in part at least, as due to the reduction in both this year.

Fig. V.

INFANT MORTALITY—CORK CITY FROM 1880 TO PRESENT TIME.



In previous reports I have deplored the general decline in breast feeding, which has been taking place for a number of years past and have drawn attention to the uncontrovertible facts which have come to light from our investigations as to the association of gastro-enteritis and high infant mortality with artificial feeding. It has been clearly established that in the vast majority of cases the prime cause of such conditions is artificial feeding, the secondary factors being lack of cleanliness and hygiene in the home as well as unhygienic methods of milk production. The only safe method of feeding infants and the only one independent of weather conditions and parental ignorance is that devised by nature. This question has been further dealt with in the section devoted to infectious disease under the subject of epidemic diarrhoea.

INFANT MORTALITY—

DECENNIAL AVERAGES FROM 1891

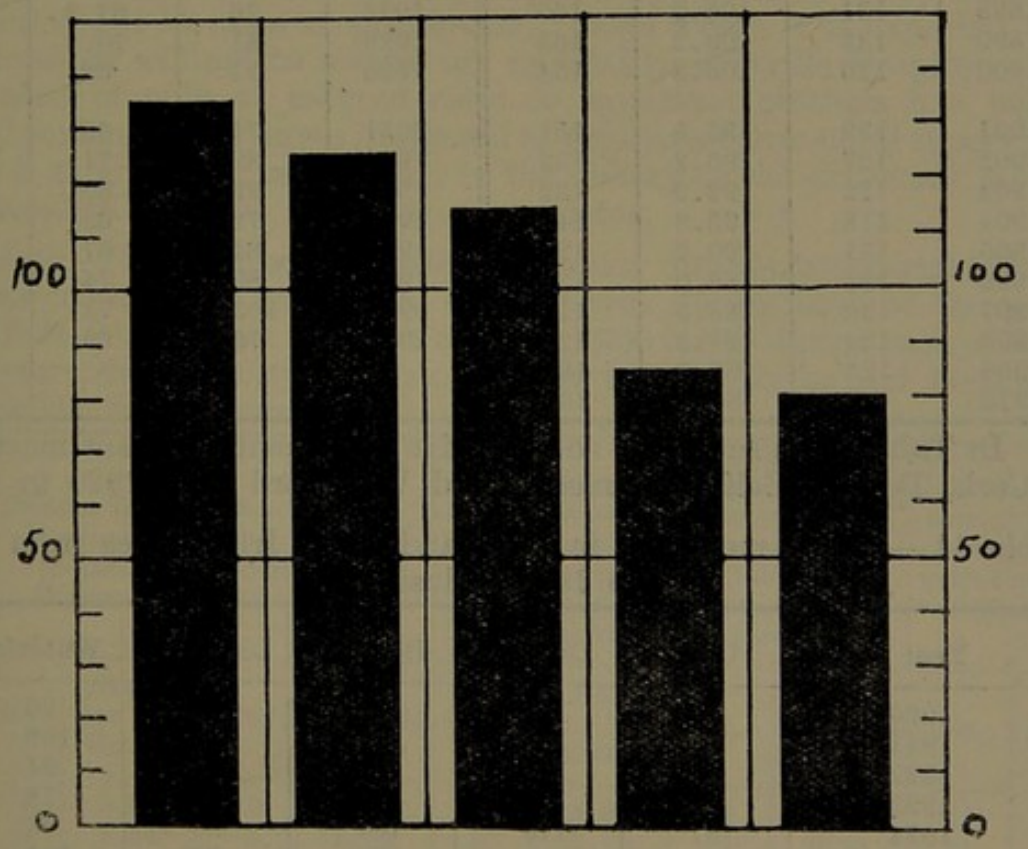


Table 43.—Infant Mortality, Cork City, Éire, and England and Wales from 1881 to 1938.

Year	Cork	Éire	E. & W.	Year	Cork	Éire	E. & W.
1881	124	89.4		1911	139	91.3	130
1882	127	94.9	139	1912	107	82.1	95
1883	109	95.0		1913	136	93.1	108
1884	110	91.9		1914	119	81.0	105
1885	120	91.3		1915	132	85.2	110
1886	110	93.9	145	1916	105	81.3	91
1887	123	93.6		1917	108	84.0	96
1888	139	96.0	136	1918	118	80.2	97
1889	125	92.0	144	1919	100	84.4	89
1890	106	91.6	151	1920	79	77.5	80
1891	138	91.4	149	1921	76	72.6	83
1892	150	99.9	148	1922	93	68.9	77
1893	132	99.8	159	1923	66	66.4	69
1894	150	97.4	137	1924	87	71.6	77
1895	131	98.0	161	1925	74	67.9	75
1896	106	91.0	148	1926	130	74.4	70
1897	152	104.0	156	1927	87	70.8	70
1898	131	105.2	160	1928	76	67.9	65
1899	133	103.2	163	1929	81	70.4	74
1900	120	105.3	154	1930	77	68	60
1901	139	95.5	151	1931	71	69	66
1902	127	95.2	133	1932	89	71	65
1903	112	92.2	132	1933	89	65	64
1904	118	95.8	145	1934	72	63	59
1905	131	90.2	128	1935	84	67	57
1906	133	88.0	132	1936	80	74	59
1907	139	88.5	118	1937	103	73	58
1908	134	91.2	120	1938	75	66	53
1909	125	87.3	109				
1910	96	89.1	105				

In Table 44 is set out a comparative statement of infant mortality in Cork, Dublin, Belfast, Limerick and Waterford from 1920 to 1938.

Table 44.—Infant mortality in Cork and other Irish Cities from 1920 to 1938 inclusive.

Year	Cork	Dublin*	Belfast†	Limerick*	Waterford*
1920	79	152	132	109	96
1921	76	143	115	113	102
1922	93	120	94	108	94
1923	66	117	101	128	78
1924 ...	87	119	107	90	93
1925	74	117	104	91	106
1926	130	118	112	146	115
1927	87	122	101	104	82
1928 ...	76	103	103	120	110
1929	81	107	112	118	108
1930	77	98	78	104	84
1931	71	94	90	120	91
1932	89	102	111	91	131
1933	89	83	102	126	103
1934	72	79	80	77	88
1935	84	93	112	109	117
1936	80	114	102	95	89
1937	102	106	94	68	97
1938	75	98	96	71	98

* Figures obtained from Annual Summary of Registrar General.
† Figures obtained from Superintendent Medical Officer of Health.

(B) NOTIFICATIONS OF BIRTHS.

The Acts bearing on this subject are the Notification of Births Acts, 1907, which was adopted by the Corporation in September, 1922, and the Notification of Births (Extension) Act, 1915. These Acts place an obligation on certain individuals to notify to the Medical Officer of Health within thirty-six hours, births which have occurred in the area, The object of the Acts is to enable the Local Authority to afford advice and assistance to parents on the care and upbringing of children.

The general procedure in connection with the notification of births was outlined in my Report for the year 1932. The total number of such notifications received in 1938 amounted to 1,696. The number of births *registered* during the same period, according to the Annual Summary of the Registrar-General was 1,769.

(C) MATERNAL MORTALITY.

There were 6 deaths recorded under this heading during the year.

The ante-natal clinic is held on Wednesday mornings. Routine urine examinations and blood-pressure readings are made and pelvimetry is carried out in cases of primiparae. Cases where it is expected that confinement will not be normal are referred to Erinville Hospital. The provision of milk at reduced rates to expectant mothers has helped the attendances and serves in general to popularise ante-natal supervision as well as providing an addition to the dietary of the expectant mother of considerable value to the growing foetus.

Table 45.—The number of deaths of women directly attributable to or associated with pregnancy or childbirth during each of the years 1924–38, together with the rate per 1,000 births during each of these years, for the City of Cork. (Corrected for Births and Deaths in public institutions).

Year	Deaths from Puerperal Septic Diseases		Deaths from accidents of Pregnancy or Childbirth		Total Deaths from Puerperal Septic Diseases and accidents of Pregnancy or Childbirth		Deaths from causes associated with Pregnancy or Childbirth (not included in foregoing)		Total Deaths caused by, or associated with Pregnancy or Childbirth	
	No.	Rate per 1000 Births	No.	Rate per 1000 Births	No.	Rate per 1000 Births	No.	Rate per 1000 Births	No.	Rate per 1000 Births
1924	5	2.55	6	3.05	11	5.60	1	0.51	12	6.11
1925	5	2.54	5	2.54	10	5.08	1	0.51	11	5.59
1926	3	1.66	8	4.42	11	6.08	—	—	11	6.08
1927	5	2.74	6	3.28	11	6.02	—	—	11	6.02
1928	3	1.64	9	4.92	12	6.56	1	0.55	13	7.11
1929	—	—	4	2.24	4	2.24	—	—	4	2.24
1930	1	0.46	3	1.37	4	1.83	—	—	4	1.83
1931	1	0.52	7	3.63	8	4.10	—	—	8	4.10
1932	1	0.55	8	4.28	9	4.95	—	—	9	4.95
1933	1	0.54	8	4.32	9	4.85	1	0.54	10	5.40
1934	5	2.60	2	0.52	7	3.60	—	—	7	3.60
1935	1	0.51	5	2.56	6	3.08	—	—	6	3.08
1936	1	0.52	4	2.08	5	2.60	—	—	5	2.60
1937	—	—	—	—	—	—	—	—	—	—
1938	—	—	6	3.51	6	3.51	—	—	6	3.51

In Table 46 (overleaf) is set out the comparative maternal mortality for Cork, Dublin, Belfast, Limerick and Waterford County Boroughs, and for the whole country.

Table 46.—Maternal Mortality in different areas from 1920 to 1938 inclusive.

Year	Whole Country		Cork City		City of Dublin		Belfast		Limerick County Borough		Waterford County Borough	
	No. of deaths	Rate per 1000 births	No. of deaths	Rate per 1000 births	No. of deaths	Rate per 1000 births	No. of deaths	Rate per 1000 births	No. of deaths	Rate per 1000 births	No. of deaths	Rate per 1000 births
1920	326	4.8	13	5.8	55	6.0	95	7.7	3	2.9	2	2.7
1921	336	5.5	8	4.0	53	6.5	53	4.7	1	1.0	3	5.1
1922	370	6.3	7	3.6	61	7.1	55	5.1	12	11.8	—	—
1923	328	5.3	4	1.9	46	5.5	58	5.3	16	5.6	3	4.9
1924	330	5.2	12	6.1	46	5.0	46	4.4	1	0.9	4	5.9
1925	312	5.0	11	5.6	42	4.9	29	2.8	3	2.8	4	6.4
1926	329	5.4	11	6.1	31	3.5	57	5.5	5	4.8	—	—
1927	291	4.8	11	6.0	23	2.8	36	3.7	5	4.8	3	4.7
1928	318	5.4	13	7.1	31	3.5	43	4.6	5	4.5	2	3.0
1929	283	4.9	4	2.2	30	3.4	43	4.8	7	6.2	1	1.6
1930	294	5.0	4	1.8	43	4.1	44	4.6	4	3.7	3	4.6
1931	272	4.7	8	4.1	29	2.1	54	5.7	4	3.5	3	4.5
1932	235	4.9	9	4.9	33	3.1	49	5.5	8	4.0	6	8.6
1933	255	4.4	10	5.4	22	2.1	42	5.2	7	7.1	2	2.8
1934	304	5.2	7	3.6	41	3.7	57	6.3	2	1.9	—	—
1935	272	4.6	6	3.0	38	3.3	54	6.0	6	5.5	4	4.0
1936	273	4.7	5	2.6	42	3.5	57	6.2	2	2.0	3	4.5
1937	204	3.39	—	—	33	2.8	56	6.1	3	2.9	4	5.8
1938	204	3.6	6	3.5	29	2.5	48	5.2	4	4.0	3	4.8

The above figures were obtained from the Annual Reports of the Registrar-General for Saorstat Eireann with the exception of those for the year 1938 (which were taken from the Annual Summary for that year) and those for Belfast, from 1922 onwards, which were kindly supplied by Dr. C. S. Thompson, Superintendent Medical Officer of Health. All figures include deaths from sepsis arising from abortion and miscarriage.

(D) SUPERVISION OF MIDWIVES.

1. Number of Midwives in Practice :—	
Certificate of C.M.B.	53
Other recognised certificates	37
Total	90
2. Number of midwives according to type of practice :—	
Attached to public institutions	6
Conducting only private maternity or nursing homes	9
Dealing with less than five cases per year	9
Monthly nurses	26
Others	40
Total	90
3. Number of visits of inspection of midwives	249
4. Disinfection of appliances	4
5. Reasons for summoning Medical help :—	
Abnormal presentation	20
Obstructed and delayed Labour	63
Post partum haemorrhage	6
Ante partum haemorrhage	5
Rise of Temperature	3
Discharge from baby's eyes	2
Thrombosis	2
Retained and adherent placenta	7
Ruptured perineum	16
6. Notification of still births	73
7. Notifications of artificial feeding	23
8. Notifications of having laid-out dead bodies	1
9. Suspensions for twenty-four hours on account of contact with cases of infectious disease	4
10. Notification of liability to be a source of infection....	2
11. Notifications of deaths	19

Six cases of puerperal fever were notified during the year. These cases are reviewed under the section for infectious diseases, and it is unnecessary to refer to them further here.

It was unnecessary to undertake any legal proceedings against midwives during the year.

(E) WORK OF THE MATERNITY AND CHILD WELFARE SCHEME.

The following is a summary of the work carried out during the year by the staff of the Centre. (The figures in brackets represent the corresponding attendances during 1937)—

Attendances of children under one year :—		
(a) New Cases	2490	(2137)
(b) Old Cases	3418	(3522)
Attendances of Mothers with Children	8662	(8412)
Cases seen by the Medical Officer :—		
(A) Under one year		
(1) New Cases	1082	(1059)
(2) Old Cases	2426	(2302)
(B) One to two years		
(1) New Cases	816	(809)
(2) Old Cases	692	(491)
(C) Two to five years		
(1) New Cases	430	(422)
(2) Old Cases	406	(327)
(D) Expectant Mothers		
(1) New Cases	481	(354)
(2) Old Cases	511	(343)
Analysis of cases dealt with by the Medical Officer :—		
Consultations on infant feeding	931	(923)
Diseases of respiratory system	272	(178)
,, new born	2	(3)
,, reproductive system	1	(—)
,, urinary system	15	(18)
,, nervous system	4	(2)
,, circulatory system	3	(5)
,, alimentary system	782	(875)
,, skin	189	(145)
,, ears	43	(56)
,, eyes	23	(28)
Exanthemata	35	(23)
Mental defects	3	(5)
Congenital defects	2	(1)
Orthopoedic defects	7	(5)
Rickets	2	(1)
Avitaminosis	14	(22)
Number of cases dealt with	2328	(2290)
Number of attendances	5852	(5410)
Ante-natal work—		
Number of cases dealt with	481	(354)
Number of attendances	992	(697)
Return of Health Visitors' work—		
(A) Under one year		
(1) Primary visits	1562	(1802)
(2) Secondary visits	3518	(3492)

(B) One to two years		
(1) Primary visits	1297	(1174)
(2) Secondary visits	1452	(1092)
(C) Two to five years		
(1) Primary visits	942	(932)
(2) Secondary visits	2798	(2867)
(D) Expectant Mothers		
(1) Primary visits	624	(591)
(2) Secondary visits	702	(610)

The attendances at the clinic continue to steadily increase and are now assuming embarassing proportions, calling for all the energy and tact of the nurses and voluntary workers to deal with them, and in this connection we will have to consider the establishment of outlying centres in the near future to deal with the growing districts now springing up on the outskirts of the City.

The following cases were dealt with at the artificial sunlight clinic during the year :—

Avitaminosis	32
Debility	9
Rickets	5
Non-Pulmonary Tuberculosis	3
Anaemia	1
Number of cases treated	50
Number of exposures	478

Section VI.—Control of Food Supplies

The following report has been contributed by Mr. S. R. J. Cussen, Chief Veterinary Officer :—

(A) SUPERVISION OF MILK.

Tne Milk and Dairies Act, 1935, came into force on the 1st of January, 1937, with the exception of certain sections dealing with the sale of milk under Special Designations, which will come into operation on the 1st of April, 1939.

As a result of the operation of the Act and Regulations during the past two years the quality of the milk, in so far as its dirt content is concerned, has shown an improvement. An examination of Table 44 will verify this. The fact that there is an improvement in this direction, goes to show that greater precautions are being taken at the source to keep the dirt out of the milk. It seems, however, that the use of the strainer is more concerned than clean methods of milking. Even though there is an improvement in this direction, yet, on the whole, the results are disappointing. This seems to be due to the fact that the Act and Regulations are not fully enforced by the producing authorities. Table 51 shows that out of 136 samples of milk examined by the authorised Bacteriologist, 22 or 16.18% contained more than 500,000 bacteria per c.c. The samples were taken within three hours of production. It is obvious that milk containing such a high bacterial content in so short a time after milking, must be produced without due observance of the provisions of the Milk and Dairies Regulations relating to the production of Milk.

Table 53 shows that 5 out of 64 samples of market milk examined by means of the Biological Test were found *positive for Tubercle Bacilli.* This is a rather serious matter, because parents of children who cannot afford to purchase safe milk, must be satisfied with the ordinary and run the risk of their children becoming infected with the Bovine Tubercle Bacillus. If dairy cows were examined at least once every six months, in accordance with the provisions of the Milk and Dairies Regulations, and herd samples subjected to the biological test, the risk of milk becoming contaminated with tubercle bacillus would be reduced to a minimum.

We are glad to be able to report that the handling of milk within the Borough, particularly in shops, is very much improved. There is installed in practically every shop a seamless churn, fitted with tap and plunger, in which milk is stored, with this receptacle the risk of contamination of the milk is reduced to a minimum.

An idea of the complexity which now characterises the administrative control of the milk supply may be obtained from an examination of the relevant legal enactments which have been brought into being within recent times. They are as follows :—

The Milk and Dairies Act, 1935.

The Milk and Dairies Regulations, 1936.

The Milk and Dairies (Milk Sampling) Regulations, 1936.
The Milk and Dairies (Bacteriological Examination) Regulations, 1936.
The Milk and Dairies (Fees for Bacteriological Examination) Regulations, 1936.
The Registration of Dairymen Regulations, 1936.
The Milk and Dairies (Prohibition Order) Regulations, 1936.
The Milk and Dairies Act, 1935 (Appeals to District Court under Section 41) Regulations, 1936.
The Milk and Dairies (Special Designations) Regulations, 1938.
The Milk and Dairies (Sale of Heated Milk) (Restriction) Regulations, 1938.

Finally there is the Bovine Tuberculosis Order, 1926 (now the father of all these enactments) to which may be added its latest progeny, The Milk and Dairies (Special Designations) (Amendment) Regulations, 1939. No doubt, some day, all these various measures of control will be incorporated in one consolidating Act. It seems a great pity that such could not be effected from the beginning. It is not difficult to see that such a measure would greatly simplify administration and control of the milk supply.

The Sale of Milk under Special Designations.

The Milk and Dairies Act, 1935 (Date of Commencement) (No. 2) Order 1938 was intended to bring into operation on the 1st of January, 1939, the undermentioned regulations :—

Milk and Dairies (Special Designations) Regulations, 1938.

Milk and Dairies (Sale of Heated Milk) (Restriction) Regulations, 1938, but the Minister decided to make an Order revoking the above, and fixing the 1st of April, 1939, as the day on which the above mentioned Regulations are to come into operation. It was thought desirable to postpone the operation of the Order, in view of the large number of applicants for licences for the sale of milk under Special Designations and the difficulty these applicants would have in effecting before the 1st of January, the improvements to premises and equipment necessary for compliance with the requirements of the Regulations.

The General Designations Regulations provide that the words "Milk" "New Milk" and "Fresh Milk" may be used in connection with the sale of ordinary milk for which there is no special designation licence required.

The Special Designations Regulations provide that milk may be sold under the designations "Highest Grade," "Standard" and "Pasteurised" in accordance with a licence granted by the Minister or with his authority.

These Special Designations Regulations only apply to the sale of whole milk, and do not effect the sale of skimmed or separated milk, cream or buttermilk.

The effect of Section 38 of the Milk and Dairies Act, and the Designations Regulations is to prohibit the use of any words other than a General or Special Designation in connection with the sale of milk. It will therefore be an offence to describe milk as "Tuberculin Tested"

or "Grade A," or "Pure Milk," etc. It will also be an offence for any person to use a Special Designation, who is not the holder of a Special Designation Licence.

With regard to the sale of heated milk. The effect of Section 32 of the Act and of the Sale of Heated Milk (Restriction) Regulations is to prohibit the sale of any heated or pasteurised milk except in accordance with a Special Designation Licence to sell pasteurised milk. There is nothing to prevent a person from selling hot milk for consumption.

The conditions under which Special Designation Licences may be granted are summarised in a memorandum (Memo. M.D.) issued by the Minister. There is also a memorandum (Memo. M.D.2) on the establishment and maintenance of a Tubercle Tested herd issued for the guidance of persons interested in the production of Highest Grade Milk.

The Licences issued by the Minister under the Special Designations Regulations are :—

Producer's Licence.
Pasteuriser's Licence.
Milk Bottler's Licence.

The only Licence issued by the Local Authority is a Dealer's Licence —A Dealer's Licence authorises the holder to sell at approved premises *milk which has not been produced or pasteurised or bottled by himself*, but which has been purchased by him under the Special Designation. The holder of a Dealer's Licence to sell Highest Grade Milk or Standard Milk which must be sold in bottles or in unventilated sealed containers will ordinarily sell milk in the bottles or other containers in which he received it. The holder of a Dealer's Licence to sell Pasteurised Milk may sell such milk loose, but if he bottles the milk for sale, he must obtain a Milk Bottler's Licence from the Minister.

The procedure to be followed in connection with an application for a Dealer's Licence is similar to that observed in connection with an application for Registration under the Act. Application Forms for Dealer's Licence can be had from the Local Authority.

The Fee for a Dealer's Licence is fixed at 5/–, which must be prepaid, where the Licence comes into force on the 2nd, 3rd or 4th quarter of the year this fee is reduced by $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ respectively. A Licence continues in force, subject to suspension or revocation, until the 31st day of December next after the date on which the Licence comes into force.

The chemical and bacteriological standards applicable to Highest Grade Milk, Standard Milk and Pasteurised Milk are set out below.

Chemical Standard.

Highest Grade	3.1% Milk Fats
Standard	3.1% Milk Fats
Pasteurised	3% Milk Fats

With regard to the bacteriological standard the tests employed to determine the bacterial standard in the case of Highest Grade and Standard Milks are :—

(a) The Methylene Blue Reduction Test.
(b) A Test for Coliform Bacillus.

Table 47.—Summary of the standards required under the terms of the Milk and Dairies (Special Designations) Regulations, 1938.

Designation	WHOLE MILK			
	HERD	BACTERIAL STANDARD		OTHER CONDITIONS
		REDUCTION TIME	Coliform Bacillus	
Highest Grade	Tuberculin Tested and Physically Examined at Regular Intervals	5 Hours (Summer Period) 6 Hours (Winter Period)	Absent in $\frac{1}{100}$ of a Cubic Centimetre	To be sold in bottles or in unventilated sealed containers. The name and address of the person by whom they were filled, the day of Production, the word morning or evening, and the Special Designation under which the milk is to be sold, must be marked on the container, or on the cap, lid or other closing device. Chemical Standard 3.1% of Milk Fats
Standard	Physically Examined at Regular Intervals	4½ Hours (Summer Period) 5½ Hours (Winter Period)		
Pasteurised	100,000 Bacteria per Cubic Centimetre			To be sold loose or in bottles or in unventilated sealed containers and marked with the name and address of the Dairyman by whom filled, day of production and the words Pasteurised Milk Chemical Standard 3% of Milk Fats.

Reference to the next table will show the standards required under the terms of the Milk and Dairies (Special Designations) Regulations, 1938.

Table 48.—Standards required under the terms of the Milk Special Designation Order, 1923, made by the English Ministry of Health.

Designation	RAW MILK			
	HERDS	BACTERIAL CONTENT		OTHER CONDITIONS
		Maximum Number of Bacteria per Cubic Centimetre	Coliform Bacillus	
Certified	Tuberculin Tested and Physically Examined at regular intervals	30,000	Absent in $\frac{1}{10}$ C.C.	Bottled on the farm, name of farm, day of production and word "Certified" on each bottle cap.
Grade A Tuberculin Tested	Tuberculin Tested and Physically Examined at regular intervals	200,000	Absent in $\frac{1}{100}$ C.C.	Delivered to Consumers in :—(*a*) the bottles or the sealed containers as received from the farm ; (*b*) suitable containers of not less than 2 gallons capacity ; (*c*) bottles with the name of the dealer by whom the milk was bottled, the address of the licenced bottling establishment, the day of production and the words "Grade A Tuberculin Tested" or "Grade A" on each bottle cap
Grade A	Physically Examined at regular intervals			
Grade A Pasteurised	PASTEURISED MILK			
	Grade A milk that after pasteurisation, as required by the Minister of Health contains not more than 30,000 bacilli per c.c. and no coliform bacillus in 1/10 c.c. All other conditions as required for Grade A milk.			
Pasteurised	Any milk that after pasteurisation, as required by the Minister of Health, contains not more than 100,000 bacteria per c.c. No Requirement for Bottling.			

For comparative purposes the following table, setting out the standards in respect of the Special Designations in use in England, is shewn.

It will be observed that the Irish Designations which number only three, as against the English five are, on the whole, much simpler and less confusing. They correspond to the English Grade A Tuberculin Tested, Grade A, and Pasteurised.

Applications for registration in the Register of Dairymen were received as follows :—

(1) From persons resident outside the Borough, using vans for the purpose of their business.

(*a*) For the sale of milk—18

(*b*) For the sale of cream only—1.

(2) From persons resident within the Borough :—

(*a*) To sell milk in shops—22.

(*b*) To sell cream only in shops—15.

The total number of *shops* now registered is 244 and the total number of *persons* registered 237.

Inspections of premises where milk is produced or sold were as follows :—

Milk Shops	2341
Milk Vans	586
Cowsheds	113

Generally these were found in a satisfactory state of cleanliness. There were a few cases where the provisions of the Milk and Dairies Regulations were not observed and it was necessary to take legal proceedings against the persons concerned. 39 persons were prosecuted, and fines to the total amount of £7 14s. 0d. were imposed. The fines varied from 1/– to a maximum of 7/6. The small fines imposed in these cases seemed to have little or no effect as a deterrent, because offenders were prosecuted for the same offence in more than one occasion.

The number of cows kept within the Borough for the production of milk is very small, being only 65. These were inspected quarterly and surprise visits were made between the ordinary routine visits. Each cow is clinically examined, particular attention being paid to the udder. A sample of milk is taken from any cow that shows the slightest induration of the gland substance, this is examined microscopically for the presence of pathogenic bacteria. In addition to the individual sample there is taken a sample representing the udder secretion of all animals constituting the herd, which is used for guinea pig inoculation.

Six notices were served on dairymen for failing to comply with the requirements of the Milk and Dairies Regulations.

The number of samples taken for examination at the Veterinary Laboratory was as follows :—

Ordinary Market Milk	174
Grade "A"	77
Total	251

The tests applied were as follows :—

1.—The Sedimentation (or dirt) Test.
2.—The Microscopic Test
3.—Determination of bacteria of faecal origin.
4.—Determination of Pathogenic Bacteria.
5.—The Reductase Test.

1.—The Sedimentation Test.

This test has been fully described in previous reports. Briefly it consists in forcing a quantity of milk under pressure through a cotton wool pad held in a metal container shaped like a bottle. Dirt suspended in the milk is separated by the pad and a rough standardisation can be made according to the appearance of the pad after the test. The results of the tests were as follows :—

	Ordinary Market Milk	Grade "A"
Very Clean	3	38
Clean	36	30
Fairly Clean	83	7
Dirty	49	2
Very Dirty	3	—
	174	77

In connection with the sale of dirty milk, it was mentioned in the last annual report that the District Justice dismissed a case brought by the Sanitary Authority under Section 59 of the Milk and Dairies Act, which reads " It shall not be lawful for any person to sell or expose or offer for sale any milk which is contaminated or dirty." The findings of the Justice were fully dealt with in the report. Subsequent to the dismissal of this case it was noted in newspaper reports that Sanitary Authorities in other parts of the country had succeeded in obtaining convictions under Section 59 on the result of the Sedimentation Test. It was therefore decided to bring a test case and in the event of an unfavourable decision to ask the Justice to state a case. In December a Dairyman was prosecuted for selling milk that was dirty, as demonstrated by the Sedimentation Test. In opening the case the City Solicitor reminded the Justice of his ruling in the previous case and asked him, in the event of his deciding against us to state a case. Judgement was deferred for one week and eventually went in our favour. In giving his decision, the Justice said " The procedure adopted in connection with the testing of the milk in this case differed somewhat from that of the previous occasion and we were entitled to succeed on the summons."

We have successfully brought a number of cases under Section 59, since the result of the test case. There has been a good deal of legal argument regarding the procedure on behalf of the defence. Some solicitors contend that when testing milk for dirt, the procedure should be in accordance with the provisions of the Milk and Dairies (Milk Sampling) Regulations. This contention does not appear to be

reasonable if our interpretation of the Section is correct. Contaminated milk is different altogether from dirty milk. *Contaminated Milk* is (a) Milk that may have an offensive taste or smell, these may be derived from certain feeding stuffs, e.g., turnips or medicines, decomposition, etc. (b) Milk that may contain visible offensive matter—such as pus, blood or pathogenic bacteria. Pus or blood may be visible to the naked eye or may be visible at the bottom of the sedimentation tube after centrifuging a quantity of the milk. The pathogenic bacteria will only be visible under the microscope. (c) Milk that contains over 500,000 bacteria per cubic centimeter. Milk may be heavily laden with bacteria and yet may be free from offensive taste or smell, pus, blood and pathogenic bacteria.

Dirty Milk—Is milk that contains any filthy substance, such as faecal matter, mud, dust, etc., which gets into the milk during milking and the subsequent handling of the milk. This dirt may be in suspension or in solution in the milk.

There appears to be no obligation on an Inspector to proceed in accordance with the provisions of the Milk and Dairies (Milk Sampling) Regulations, when making a test of milk for dirt content or when testing for offensive smell. There is no necessity to take a sample for the purpose of making the test in these circumstances.

Although there is no prescribed test for offensive taste, one could not taste milk without taking a sample of some quantity, and if a sample is taken at all, it must be taken in the prescribed manner.

If milk is to be tested for visible offensive matter, or for bacterial content, then a sample must be taken in the prescribed manner as outlined in the Milk and Dairies (Milk Sampling) Regulations.

The following is the procedure employed in testing milk for dirt :— A quantity of the milk is poured from the tap of the churn or the delivery can, through a cotton wool pad held in a metal container into a pint measure or other vessel belonging to the vendor, in this way the milk does not come into the possession of the Inspector at all and therefore it could not be held that the milk was sampled.

The test for offensive smell may also be made on the spot. If pronounced an offensive smell can easily be detected by any normal individual.

The fact of being able to bring a successful prosecution under Section 59 should be of great assistance in improving the quality of milk in so far as dirt content is concerned.

This dirt test has been applied every year since the first development of our laboratory service and the results to date are shown in the following table :—

Table 49.—Results of Dirt Test over the period 1930–38.

Year	No. of Samples	Very Clean	Clean	Fairly Clean	Dirty	Very Dirty
1930	412	8	72	118	156	58
1931	408	23	61	82	139	103
1932	630	4	27	108	265	226
1933	485	3	27	105	221	129
1934	339*	—	19	51	148	121
1935	223*	—	7	21	103	92
1936	227*	3	21	43	106	54
1937	206*	5	31	80	70	20
1938	174*	3	36	83	49	3
Totals	3104	49	301	691	1257	806

* Ordinary market milk.

There has been a reduction in the number of dirty samples since the Milk and Dairies Act came into force as reference to the next table will show :—

Table 50.—Proportion of Samples classified as "Dirty," 1930–38.

Year	No. of Samples	Dirty	Proportion of Total
1930	412	214	51.9 per cent.
1931	408	242	59.3 ,,
1932	630	491	77.9 ,,
1933	485	350	72.2 ,,
1934	339	269	79.3 ,,
1935	223	195	87.4 ,,
1936	227	160	70.9 ,,
1937	206	90	43.6 ,,
1938	174	52	29.8 ,,
Total	3,104	2,063	66.4 ,,

Even though there has been a reduction in the number of dirty samples, there is still room for further improvement. It is to be feared that no reasonable effort is being made to enforce the provisions of the Milk and Dairies Regulations relating to the production of milk.

2.—Microscopic Examination.

The main object of this examination is the detection of the so-called "Acid Fast" group of micro-organisms, of which the Tubercle Bacillus is a member. In 3 samples acid fast bacilli were detected, streptococci in 5 and pus in 1. Pus in milk indicates suppuration of the udder. In the event of positive findings in either of these directions our results are reported to the County Health Authority for action. This has been the procedure for some years past.

Table 51.—Results of Microscopic Examinations, 1930-38.

Year	No. of Samples	Acid-fasts	Streptococci	Pus Cells	Free from Suspicious Organisms
1930	412	29	7	12	364
1931	408	16	29	19	344
1932	630	40	3	2	585
1933	492	32	3	—	457
1934	520*	5	10	—	505
1935	382	—	17	10	325
1936	314	4	11	4	299
1937	303	8	9	11	275
1938	251	3	5	1	242
Totals	3712	137	94	59	3396

*This figure includes both Grade "A" and ordinary market milk. In the previous tables the corresponding figure refers to ordinary milk only. In *all* tables the figures for the four previous years refer to ordinary milk only. A distinction has to be made for 1934 as in that year examination of Grade "A" samples was instituted and the results kept separate from those for ordinary milk.

3.—Determination of Bacteria of faecal origin.

Two types of bacteria are looked for, viz., Bacillus Coli and Anaerobic Sporeforming Bacteria. These organisms are mainly associated with animal excreta. Their presence in milk may be taken to show carelessness in production. A full description of the tests for these organisms has been given in previous reports.

Table 52.—Result of Tests for the presence of organisms of faecal origin, 1938.

Quality	No. of Samples	Coli Present	Spore-formers Present	Proportion free from Coli and Spore-formers
Grade "A"	77	—	3	96.11 per cent
Ordinary	174	18	21	77.6 „
Totals	251	18	24	83.3 „

5 samples contained both Coli and Spore-formers.

4.—Determination of Presence of Pathogenic Bacteria.

This matter has been partly alluded to under the heading of microscopic examination. The presence of streptococci in milk is to be regarded as of pathogenic significance from the point of view of the liability of such milk to cause septic sore throat. They were present in five samples. In dealing with Pathogenic Bacteria our chief concern is the Tubercle Bacillus, which is transmissible to man in infected milk. The biological test is the only reliable one in detecting Tubercle in milk.

Table 53.—Biological Test for the presence of Tubercle Bacilli in Milk.

No. of G. Pig	No. of Sample	Date of Inoculation	Date of Postmortem	Result	Observations
1	H1	29/3/38	9/5/38	P	Herd Sample
2	H2	,,	,,	N	,,
3	115	25/4/38	9/6/38	P	Market Milk
4	116	,,	22/7/38	N	,,
5	117	,,	,,	N	,,
6	118	,,	,,	N	,,
7	119	,,	,,	N	,,
8	120	,,	,,	N	,,
9	121	27/4/38	12/5/38	N	,, (Pig died)
10	122	,,	22/7/38	N	,,
11	123	,,	,,	N	,,
12	C1	11/5/38	6/7/38	P	Sample from Cow
13	C2	,,	5/7/38	P	,,
14	C3	,,	22/7/38	N	,,
15	C4	,,	12/9/38	N	,,
16	C5	,,	22/7/38	N	,,
17	C6	,,	12/9/38	N	,,
18	C7	,,	,,	N	,,
19	C8	,,	,,	N	,,
21	157	7/6/38	12/9/38	N	Market Milk
22	158	,,	,,	N	,,
23	159	,,	,,	N	,,
24	160	,,	,,	N	,,
25	161	,,	,,	N	,,
26	162	,,	,,	N	,,
27	H3	5/7/38	20/9/38	N	Herd Sample
28	G1	7/7/38	,,	N	Group Sample
29	H4	15/7/38	20/9/38	N	Herd Sample
30	G2	16/7/38	,,	N	Group Sample
31	G3	22/7/38	20/9/38	N	Group Sample
32	G4	,,	,,	N	,,
33	G5	,,	,,	N	,,
34	G6	,,	,,	N	,,
35	G7	,,	,,	N	,,
36	H5	26/7/38	,,	N	Herd Sample
37	G8	28/7/38	5/10/38	N	Group Sample
38	G9	,,	,,	N	,,
39	G10	,,	,,	N	,,
40	205	12/9/38	16/11/38	N	Market Milk
41	206	,,	,,	N	,,
42	207	,,	,,	N	,,
43	208	,,	,,	N	,,
44	214	20/9/38	,,	N	,,
45	215	,,	,,	N	,,
46	216	23/9/38	,,	N	,,
47	217	,,	25/11/38	N	,,
48	218	,,	,,	N	,,
49	219	,,	,,	N	,,
50	220	,,	,,	N	,,
51	221	,,	,,	N	,,
52	H6	27/9/38	25/11/38	N	Herd Sample
53	229	28/9/38	,,	N	Market Milk
55	230	5/10/38	5/12/38	N	,,
56	231	,,	,,	N	,,
57	232	,,	,,	N	,,
58	232 (a)	26/10/38	3/1/39	N	,,
59	233	,,	,,	N	,,
60	234	,,	,,	N	,,

Table 53.—Biological Test for the presence of Tubercle Bacilli in Milk—continued

No. of G. Pig	No. of Sample	Date of Inoculation	Date of Postmortem	Result	Observations
61	235	26/10/38	3/1/39	N	Market Milk
62	236	,,	,,	P	,,
63	237	,,	,,	N	,,
64	238	,,	,,	N	,,
65	240	2/11/38	11/2/39	P	,,
66	241	2/11/38	7/11/38	N	Market Milk (Pig died)
67	242	,,	10/2/39	N	,,
68	243	,,	10/2/39	N	,,
69	244	,,	,,	P	,,
70	245	,,	,,	N	,,
71	246	9/11/38	3/3/39	N	,,
72	247	,,	,,	N	,,
73	248	,,	,,	N	,,
74	249	,,	,,	N	,,
75	250	,,	30/1/39	N	,,
76	251	16/11/38	3/3/39	N	,,
77	252	,,	,,	N	,,
78	253	,,	22/11/38	N	,, (Pig died)
79	255	,,	,,	N	,,
80	256	2/12/38	,,	N	,,
81	257	,,	,,	N	,,
82	258	,,	,,	N	,,
83	259	,,	,,	N	,,
84	260	,,	,,	N	,,
85	261	,,	,,	N	,,
86	262	,,	13/2/39	P	,,
87	263	15/12/38	3/3/39	N	,,
88	264	,,	,,	N	,,
89	265	,,	,,	N	,,
90	266	,,	,,	N	,,

Number of Samples of Milk tested Biologically :—

Market Milk	....	....	....	64
Herd	....	....	....	6
Group	....	....	....	10
Individual Cows	....	....	....	8
	Total	....	....	88

Number of Samples found to contain living Tubercle Bacilli :—

Market Milk	....	....	....	5
Herd	....	....	....	1
Group Samples	....	....	....	0
Individual Cows	....	....	....	2
	Total	....	....	8

The procedure adopted when positive milk samples are discovered, is as follows. The Secretary of the County Council and the County Medical Officer are notified and furnished with the name and address

of the Milk Vendor, as well as the names and addresses of any supplementary supplies he may have. This is done with a view to having the suspicious herds, which are located outside our jurisdiction, examined under the Bovine Tuberculosis Order, 1926.

During the period under review I reported to County Authorities four supplies that I found positive for Tubercle Bacilli, and in only one case was a tuberculous cow discovered. In another case I was informed that the Veterinary Inspector slaughtered a cow under the Bovine Tuberculosis Order about ten weeks prior to my report. This cow had been a member of the suspicious dairy herd.

It is obvious from these results that there is some weakness in the line of action adopted by the County Authorities in dealing with these cases. It is of the utmost importance that the Veterinary Inspector carrying out inspections and examinations of Dairy Herds, especially in an area, like the Cork Rural District, from which 90% of our milk supplies are derived, should have at his disposal a properly equipped laboratory where he could carry out examinations of milk samples on the spot, and even perform the Biological Test if need be.

I may mention also that there is some delay in dealing with these cases where a milk supply is found or reported to contain Tubercle Bacilli. The suspicious herd should be examined with all possible haste and no effort spared to discover and eliminate the diseased cow. Had we the power to follow up these cases to the source, then our difficulties would be obviated.

Table 54.—Detailed Results obtained in the Examination of *Grade "A" Milk*

Sample No.	Dirt Test	Reductase Test "Grade"	Coli-form Bacilli	Spore-forming Bacilli	Microscopical Test			
					Acid Fast	Strep-tococci	Pus	Blood
1	V. Clean	1	—	—	—	—	—	—
2	,,	1	—	—	—	—	—	—
3	,,	1	—	—	—	—	—	—
4	,,	1	—	—	—	—	—	—
5	Clean	1	—	—	—	—	—	—
6	,,	1	—	—	—	—	—	—
13	V. Clean	1	—	—	—	—	—	—
14	Clean	1	—	—	—	—	—	—
15	V. Clean	1	—	—	—	—	—	—
16	,,	1	—	—	—	—	—	—
17	,,	1	—	—	—	—	—	—
18	Clean	1	—	—	—	—	—	—
31	V. Clean	1	—	—	—	—	—	—
32	,,	1	—	—	—	—	—	—
33	,,	1	—	—	—	+	—	—
34	,,	1	—	—	—	—	—	—
35	,,	1	—	—	—	—	—	—
36	,,	1	—	—	—	—	—	—
37	,,	1	—	—	—	—	—	—
50	Clean	1	—	—	—	—	—	—
51	F. Clean	1	—	—	—	—	—	—
52	Clean	2	—	—	—	—	—	—
53	,,	1	—	—	—	—	—	—

Table 54—Detailed Results obtained in the Examination of *Grade "A" Milk*—continued.

Sample No.	Dirt Test	Reductase Test "Grade"	Coli-form Bacilli	Spore-forming Bacilli	Microscopical Test			
					Acid Fast	Strep-tococci	Pus	Blood
54	V. Clean	1	—	—	—	—	—	—
55	Clean	1	—	—	—	—	—	—
56	F. Clean	1	—	—	—	—	—	—
81	Clean	1	—	—	—	—	—	—
82	,,	1	—	—	—	—	—	—
81	Clean	1	—	—	—	—	—	—
82	,,	1	—	—	—	—	—	—
83	,,	1	—	—	—	—	—	—
84	,,	1	—	—	—	—	—	—
85	,,	1	—	—	—	—	—	—
104	,,	1	—	—	—	—	—	—
105	,,	1	—	—	—	—	—	—
106	,,	1	—	—	—	—	—	—
107	,,	1	—	—	—	—	—	—
108	F. Clean	2	—	—	—	—	—	—
149	V. Clean	1	—	—	—	—	—	—
150	Dirty	3	—	—	—	—	—	—
151	V. Clean	1	—	—	—	—	—	—
152	Clean	1	—	—	—	—	—	—
153	V. Clean	1	—	—	—	—	—	—
154	F. Clean	2	—	—	—	—	—	—
163	V. Clean	1	—	—	—	—	—	—
164	,,	1	—	—	—	—	—	—
165	F. Clean	3	—	—	—	—	—	—
178	Clean	1	—	—	—	—	—	—
179	Dirty	1	—	—	—	—	—	—
180	V. Clean	1	—	—	—	—	—	—
181	,,	1	—	—	—	—	—	—
182	,,	1	—	—	—	—	—	—
183	V. Clean	1	—	+	—	—	—	—
184	F. Clean	1	—	—	—	—	—	—
185	Clean	1	—	—	—	—	—	—
186	V. Clean	1	—	—	—	—	—	—
187	,,	1	—	—	—	—	—	—
196	,,	1	—	—	—	—	—	—
197	,,	1	—	—	—	—	—	—
198	,,	1	—	—	—	—	—	—
209	,,	2	—	—	—	—	—	—
210	Clean	1	—	—	—	—	—	—
211	V. Clean	2	—	—	—	—	—	—
212	Clean	1	—	—	—	—	—	—
213	F. Clean	2	—	+	—	—	—	—
222	Clean	1	—	—	—	—	—	—
223	V. Clean	1	—	—	—	—	—	—
224	,,	1	—	—	—	—	—	—
225	,,	1	—	—	—	—	—	—
226	,,	1	—	+	—	—	—	—
227	,,	1	—	—	—	—	—	—
228	,,	1	—	—	—	—	—	—
256	Clean	1	—	—	—	—	—	—
257	,,	1	—	—	—	—	—	—
258	,,	1	—	—	—	—	—	—
259	,,	1	—	—	—	—	—	—
260	,,	1	—	—	—	—	—	—
261	,,	1	—	—	—	—	—	—
262	,,	1	—	—	—	—	—	—

Table 55.—Detailed Results obtained in the Examination of *Ordinary Milk*

Sample No.	Dirt Test	Reductase Test "Grade"	Coli-form Bacilli	Spore-forming Bacilli	Microscopical Test			
					Acid Fast	Strep-tococci	Pus	Blood
7	F. Clean	1	—	—	—	—	—	—
8	,,	1	+	—	—	—	—	—
9	,,	1	—	—	—	—	—	—
10	,,	1	—	—	—	—	—	—
11	Dirty	1	—	—	—	—	—	—
12	F. Clean	1	+	+	—	—	—	—
19	,,	1	—	—	—	—	—	—
20	,,	1	—	—	—	—	—	—
21	,,	1	+	+	—	—	—	—
22	,,	1	—	—	—	—	—	—
23	Clean	1	—	—	—	—	—	—
24	F. Clean	1	—	—	—	—	—	—
25	,,	1	—	—	—	—	—	—
26	,,	2	—	—	—	—	—	—
27	Clean	1	—	+	—	—	—	—
28	F. Clean	1	—	—	—	—	—	—
29	,,	2	—	—	—	—	—	—
30	,,	2	—	—	—	—	—	—
38	Dirty	1	—	+	—	—	—	—
39	F. Clean	1	—	+	—	—	—	—
40	Dirty	1	—	+	—	—	—	—
41	,,	1	—	—	—	—	—	—
42	Clean	2	—	+	—	+	—	—
43	F. Clean	2	—	+	—	—	—	—
44	,,	2	—	—	—	—	—	—
45	F. Clean	2	—	—	—	—	—	—
46	,,	2	—	—	—	—	—	—
47	Dirty	1	—	—	—	—	—	—
48	Clean	1	—	—	—	—	—	—
49	Dirty	1	—	—	—	—	—	—
57	,,	2	—	—	—	+	—	—
58	,,	1	—	—	—	—	—	—
59	F. Clean	1	—	—	—	—	—	—
60	V. Dirty	2	—	—	—	—	—	—
61	Dirty	2	—	—	—	—	—	—
62	F. Clean	2	—	—	—	—	—	—
63	,,	1	+	—	—	—	—	—
64	,,	2	+	—	—	—	—	—
65	Dirty	2	—	—	—	—	—	—
66	,,	1	+	—	—	—	—	—
67	,,	1	+	—	—	—	—	—
68	Clean	2	+	—	—	—	—	—
69	F. Clean	1	—	—	—	—	—	—
70	Dirty	1	—	—	—	—	—	—
71	F. Clean	1	—	—	—	—	—	—
72	Dirty	2	—	—	—	—	—	—
73	,,	3	—	—	—	+	—	—
74	F. Clean	2	—	—	—	—	—	—
75	Dirty	1	—	—	—	—	—	—
76	Clean	1	—	—	—	—	—	—
77	Dirty	1	—	—	—	+	—	—
78	,,	2	—	—	—	—	—	—
79	,,	2	—	—	—	—	—	+
80	,,	2	—	—	—	—	—	—
88	Clean	1	—	—	—	—	—	+
89	,,	2	—	—	—	—	—	—

Table 55—Detailed Results obtained in the Examination of *Ordinary Milk*—continued

Sample No.	Dirt Test	Reductase Test "Grade"	Coli-form Bacilli	Spore-forming Bacilli	Microscopical Test			
					Acid Fast	Strep-tococci	Pus	Blood
90	F. Clean	1	—	—	—	—	—	—
91	Clean	1	—	—	—	—	—	—
92	F. Clean	1	—	—	—	—	—	—
93	,,	2	—	—	—	—	—	—
94	Clean	1	—	—	—	—	—	—
95	,,	2	+	—	—	—	—	—
96	F. Clean	1	—	—	—	—	—	—
97	Clean	1	—	—	—	—	—	—
98	Dirty	1	—	—	—	—	—	—
99	,,	1	—	—	—	—	—	—
100	F. Clean	1	—	—	—	—	—	—
101	Dirty	1	—	—	—	—	—	—
102	Clean	1	—	—	—	—	—	—
103	F. Clean	1	—	—	—	—	—	—
109	,,	2	—	—	—	—	—	—
110	Dirty	1	—	—	—	—	—	—
111	Clean	1	—	—	—	—	—	—
112	Dirty	1	—	—	—	—	—	+
113	F. Clean	2	—	—	—	—	—	—
114	Clean	1	—	—	—	—	—	—
115	F. Clean	1	—	—	—	—	—	—
116	,,	1	—	—	—	—	—	—
117	,,	1	—	—	—	—	—	—
118	,,	1	—	—	—	—	—	—
119	,,	1	—	—	—	—	—	—
120	,,	2	—	—	—	—	—	—
121	Dirty	1	+	—	—	—	—	—
122	F. Clean	1	+	—	—	—	—	—
123	Dirty	1	—	—	—	—	—	—
124	,,	1	—	+	—	—	—	—
125	Clean	2	—	+	—	—	—	—
126	F. Clean	1	—	—	—	—	—	—
130	,,	1	—	—	—	—	—	—
131	,,	1	—	—	—	—	—	—
132	Clean	1	—	—	—	—	—	—
133	,,	1	—	—	—	—	—	—
134	,,	1	—	—	—	—	—	—
135	,,	1	—	—	—	—	—	—
136	F. Clean	1	—	+	—	—	—	—
137	Dirty	1	—	—	—	—	—	—
138	F. Clean	2	—	—	—	—	—	—
139	,,	1	—	—	—	—	—	—
140	Clean	1	—	—	—	—	—	—
141	Dirty	1	—	—	—	—	—	—
142	F. Clean	1	+	—	—	—	—	—
143	,,	2	—	—	—	—	—	—
144	Clean	1	—	—	—	—	—	—
145	Dirty	1	—	—	—	—	—	—
146	F. Clean	2	—	—	—	—	—	—
147	Clean	1	—	—	—	—	—	—
148	F. Clean	2	—	—	—	—	—	—
155	,,	1	—	+	—	—	—	—
156	Dirty	2	—	—	—	—	—	—
157	,,	2	—	—	—	—	—	—
158	F. Clean	1	—	—	—	—	—	—
159	Dirty	1	—	—	—	—	—	—
160	,,	1	—	—	—	—	—	—
161	F. Clean	1	—	—	—	—	—	—
162	,,	1	—	—	—	—	—	—

Table 55.—Detailed Results obtained in the Examination of *Ordinary Milk*—continued

Sample No.	Dirt Test	Reductase Test "Grade"	Coli-form Bacilli	Spore-forming Bacilli	Microscopical Test			
					Acid Fast	Strep-tococci	Pus	Blood
166	Dirty	2	—	—	—	—	—	—
167	V. Clean	2	—	—	—	—	—	—
168	,,	1	—	—	—	—	—	—
169	Clean	2	—	+	—	—	—	—
170	,,	1	—	—	—	—	—	—
171	V. Clean	2	—	—	—	—	—	—
172	F. Clean	1	—	—	—	—	—	—
173	,,	1	—	—	—	—	—	—
174	,,	1	+	+	—	—	—	—
175	Dirty	2	—	—	—	—	—	—
176	F. Clean	1	—	—	—	—	—	—
177	,,	1	—	—	—	—	—	—
188	Clean	2	+	+	—	—	—	—
189	,,	2	—	—	—	—	—	+
190	,,	2	—	—	—	—	—	—
191	,,	2	—	—	—	—	—	+
192	F. Clean	2	—	—	—	—	—	—
193	Clean	2	—	—	—	—	—	—
194	,,	1	—	—	—	—	—	—
195	,,	1	—	—	—	—	—	—
199	Dirty	2	—	+	—	—	—	—
200	F. Clean	1	—	—	—	—	—	—
201	,,	1	—	+	—	—	—	—
202	,,	1	—	—	—	—	—	—
203	Clean	1	+	—	—	—	—	—
204	Dirty	2	—	—	—	—	—	—
205	F. Clean	2	+	+	—	—	—	—
206	,,	2	—	—	—	—	—	—
207	Clean	1	—	—	—	—	—	—
208	F. Clean	2	—	—	—	—	—	—
216	V. Dirty	2	—	—	—	—	—	—
217	Dirty	3	—	—	—	—	—	+
218	F. Clean	2	—	—	—	—	—	—
219	,,	2	—	—	—	—	—	—
220	,,	1	—	—	—	—	—	—
221	Clean	1	—	—	—	—	—	—
214	F. Clean	3	—	+	—	—	—	—
215	,,	1	—	—	—	—	—	—
233	Dirty	1	—	—	+	—	—	—
234	,,	2	—	—	—	—	—	—
235	V. Dirty	2	—	+	—	—	—	—
236	Dirty	2	—	—	—	—	—	—
237	,,	1	+	—	—	—	+	—
238	F. Clean	1	+	—	—	—	—	—
245	,,	1	—	—	—	—	—	—
246	Dirty	2	—	—	—	—	—	—
247	,,	1	—	—	—	—	—	—
248	F. Clean	2	—	—	+	—	—	—
249	Dirty	1	—	—	—	—	—	—
250	,,	2	—	—	+	—	—	—
251	F. Clean	2	—	—	—	—	—	—
252	,,	1	—	—	—	—	—	—
253	Clean	2	—	—	—	—	—	—
254	Dirty	1	—	+	—	—	—	—
255	F. Clean	1	—	—	—	—	—	—
263	F. Clean	2	—	—	—	—	—	—
264	,,	1	—	—	—	—	—	—
265	,,	1	—	—	—	—	—	—
	,,	2	—	—	—	—	—	—

5.—The Reductase Test.

As in previous years, the modified method of Wilson was used. The main modification consists in inverting the tubes at half-hourly intervals during the course of the test in order to keep the cream (in which a reducing enzyme is concentrated) and the micro-organisms in a homogeneous suspension.

The test is carried out by adding 1 c.c. of standard solution of methylene blue to 10 c.c's of milk. A marked blue colour develops at once in the milk. The tubes are then placed in a water bath and maintained at a temperature of between 100° F and 104° F. The tubes are examined at half-hourly intervals. Complete decolorization of the whole column of milk or complete decolorization up to within five m.m. of the surface is regarded as the end point. Any tube which at the time of examination shows obvious signs of reduction is not inverted, but left until the end point is reached. As the result of the action of bacteria present in the milk the mixture gradually loses its colour, and the speed at which this takes place serves as an index of the bacterial contamination of the milk.

In order that the results could be more readily understood by the ordinary individual, the standards as suggested by O. Jensen and Barthel in connection with the old method are adopted. These are :—

Grade I.—When no change of colour takes place in 5½ hours in Summer, and 6½ hours in Winter—Bacteria less than 500,000 per c.c.

Grade II.—No change in two hours, but a change in 5½ or 6½ as the case may be—500,000 to 4,000,000 per c.c.

Grade III.—No change in 20 minutes but a change in 2 hours—4,000,000 to 20,000,000 per c.c.

Grade IV.—Change of colour in 20 minutes or less—Over 20,000,000.

The results of the tests carried out are shown in the foregoing tables (column 3).

Bacteriological Examinations.

136 samples of milk, including five samples of Grade "A" milk were taken for bacteriological examination and submitted to the Authorised Bacteriologist, to determine the number of bacteria in one c.c. of the milk in accordance with the provisions of Section 52 of the Milk and Dairies Act, 1935.

Table 56.—Results of Bacteriological Examinations carried out at the Pathological Department, University College, Cork, on Samples of Milk submitted by Corporation Sampling Officers.

No. of Sample	Number of Bacteria per C.C.	No. of Sample	Number of Bacteria per C.C.	No. of Sample	Number of Bacteria per C.C.
1	Over 1,000,000	46	150,000	92	1,872,000
2	390,000	47	58,000	93	530,000
3	220,000	48	70,000	94	314,000
4	130,000	49	115,000	95	832,000
5	7,000	50	405,000	96	377,000
6	9,000	51	205,000	97	147,000
7	470,000	52	150,000	98	49,000
8	400,000	53	100,000	99	43,000
9	93,000	54	165,000	100	25,000
10	52,000	55	241,000	101	135,000
11	60,000	56	1,700,000	102	370,000
12	16,000	57	196,000	103	736,000
13	4,500	58	18,000	104	290,000
14	92,000	59	460,000	105	20,000
15	136,000	60	900,000	106	800,000
16	49,000	61	3,000	107	9,000
17	28,000	62	250,000	108	4,000
18	100,000	63	160,000	109	2,000
19	300,000	64	100,000	110	11,000
20	90,000	65	30,000	111	170,000
21	11,000	66	420,000	112	113,000
22	10,000	67	Exceeds 4,000,000	113	70,000
23	90,000	68	Exceeds 2,800,000	114	90,000
24	60,000	69	25,000	115	100,000
25	200,000	70	2,000,000	116	350,000
26	190,000	71	390,000	117	25,000
27	22,000	72	380,000	118	155,000
28	1,200,000	73	115,000	119	34,000
29	175,000	74	130,000	120	90,000
30	410,000	75	870,000	121	135,000
31	14,000	76	4,000,000	122	45,000
32	49,000	77	160,000	123	5,000
33	48,000	78	550,000	124	1,040,000
34	75,000	79	180,000	125	350,000
35	40,000	80	52,000	126	420,000
36	97,000	81	134,000	127	258,000
37	Over 1,000,000	82	8,500	128	1,200,000
38	424,000	83	95,000	129	260,000
39	103,000	84	10,500	130	280,000
40	91,000	85	128,000	131	248,000
41	6,000	86	Exceeds 2,000,000	132	274,000
42	7,000	87	208,000	133	188,000
43	300,000	88	335,000	134	79,000
44	190,000	89	52,000	135	405,000
45	Over 1,500,000	90	790,000	136	254,000
		91	1,046,000		

22 out of 136, or 16.18% of the samples failed to comply with the provisions of Article 3 of the Milk and Dairies (Bacteriological Examination) Regulations, 1936, which prescribes that the number of Bacteria per unit volume shall be 500,000 per cubic centimetre.

The cost of examining 136 samples amounted to £57 16s. 0d., which includes fee for examination, cost of bottle, cork and packing. It is proposed to reduce this cost in future by submitting only samples that have failed to comply with the provisions of the Milk and Dairies Act, when examined by me at our own laboratory. Samples numbered 107, 108 and 109 were from producers registered under our voluntary scheme (*vide* previous reports) for the production of high grade milk.

B. MEAT INSPECTION.

On 30th September, 1938, the Corporation ceased to administer the Agricultural Produce (Fresh Meat) Act, and the Pigs and Bacon Act. The administration of these having been taken over by the Department of Agriculture as from that date. The effect of this change was the loss of the entire Veterinary Staff, which consisted of six Veterinary Inspectors, some of whom were on the staff since the Agricultural Produce (Fresh Meat) Act came into force in September, 1930. The staff was originally appointed by the Local Appointments Commission for the purpose of exercising and performing the duties of Veterinary Examiners under the above Act. The Corporation made a contribution of £400 towards the salaries. The officers when not engaged in department work carried out other duties such as Shop Inspection, Dairy Inspection, etc.

We, therefore, were relieved of the inspection of Fresh Meat intended for export, in slaughterhouses registered under the Agricultural Produce (Fresh Meat) Act, as well as the examination and inspection of Pigs in bacon factories, intended for manufacture into bacon. We retain, however, power to inspect and examine all meat intended for home consumption, no matter where it is slaughtered within the Co. Borough.

Now that the change has been effected, I am pleased, because I feel that the Corporation will be better served by having one wholetime Assistant Veterinary Inspector of their own instead of six on whose services the Department of Agriculture had first claim.

The Municipal Inspection Depot, reference to which has been made in Annual Reports for the past ten or twelve years, has at last been erected on the site of the Hay and Straw Shelter in the Corporation yard, at the rear of the Veterinary Department. The Depot is adequately equipped for the expeditious examination of Meat and Offals.

The Meat Inspection Bye-Laws are framed and ready for despatch to the Local Government Department for sanction. Under these Bye-laws it is proposed that no meat shall be exposed, or offered for sale or sold within the County Borough for human consumption unless the same shall have been previously inspected, passed and stamped as fit for human consumption at the Inspection Depot. The stamp in use is of the ribbon type and has been found very satisfactory. It does not make an objectionable mark, and at the same time all the principal joints are marked. A number of Victuallers are already availing of the

Depot for having their meat inspected and stamped before it is brought into their shops for sale. These victuallers are :—

Messrs. Cork Farmers' Union Abattoir.
Messrs. Delicacies Ltd.
Daniel O'Callaghan, MacCurtain Street.
M. V. Barrett, 64 and 65 Grand Parade Market.
John V. Barrett, 59 and 60 Grand Parade Market.
Wm. O'Hare, 79 Oliver Plunkett Street.
Daniel Dineen, 90 Oliver Plunkett Street.
J. O'Reilly, Dillon's Cross.
Stephen Coughlan, Gillabbey Street.
Messrs. Walsh Bros., Shandon Street.
Messrs. Whitley's (Sheehan) Douglas Street.
John O'Flynn, Bleasby Street.

The Slaughter of Animals Act, 1935.

The provisions of this Act were outlined in last year's annual report, it is not proposed to make further reference to them here.

Thirty slaughtermen were licenced by the Sanitary Authority for the period under review.

The number of premises within the Cork Urban Sanitary District where meat and meat products are prepared for human consumption is as follows :—

Slaughter Houses :—

Licenced (under Public Health Act, 1878)	19
Registered (being in use before the 1878 Act)	1
Registered (under the Fresh Meat Act)	2

Bacon Factories :—

Where pigs only are slaughtered for production of Bacon	2
Where pigs are slaughtered for Bacon and Pork	1
Where Cattle and Sheep are slaughtered in addition to Pigs for Bacon and Pork	1

Sausage Factories	12
Triperies	7

Number of Inspections made of premises where meat is prepared and sold :—

Slaughter Houses	5,070
Sausage Factories	1,831
Triperies	1,891
Meat Markets	785
Butcher Shops	3,926
Pork Shops	578

In addition to the above, the following inspections were made of provision shops, fish shops, fruit shops and hawkers' stands :—

Provision Shops	5,347
Fish Shops	533
Fruit Shops	4,105
Hawkers' Stands	1,035

The number of Notices served to abate nuisances and remedy defects in Slaughter Houses and Triperies—19.

The following Tables show the results of inspection of meat in Slaughter Houses and Bacon Factories, and also the amount of meat surrendered by owners, and seized by the Inspectors :—

Table 57.—Carcases condemned for *Tuberculosis* in Slaughter Houses and Bacon Factories.

Species of Animal	Number slaughtered	Affected		Totally Condemned		Partially Condemned	
		Number	Per-centage	Number	Per-centage	Number	Per-centage
SLAUGHTER HOUSES							
Cattle	624	132	21.15	8	1.28	124	19.87
Calves	999	14	1.40	4	.40	10	1.00
Sheep	4,444	—	—	—	—	—	—
Pigs	18,892	3,386	17.92	52	.27	3,334	17.64
BACON FACTORIES							
Pigs	123,027	21,087	17.14	227	.19	20,860	16.95

Table 58.—Carcases condemned for *diseases other than Tuberculosis* in Slaughter Houses and Bacon Factories.

Species of Animal	Number slaughtered	Affected		Totally Condemned		Partially Condemned	
		Number	Per-centage	Number	Per-centage	Number	Per-centage
SLAUGHTER HOUSES							
Cattle	624	1	.16	—	—	1	.16
Calves	999	2	.20	2	.20	—	—
Sheep	4,444	1	.02	—	—	1	.02
Pigs	18,892	294	1.55	12	.05	282	1.49
BACON FACTORIES							
Pigs	123,027	2,237	1.81	73	.06	2,159	1.75

Table 59.—Quantity of Meat condemned for *Tuberculosis and other diseases* in Slaughter Houses and Bacon Factories.

Variety	Quantity Examined	Tuberculosis Quantity Condemned	Percentage	Other Diseases Quantity Condemned	Percentage
	SLAUGHTER HOUSES				
	lbs.	lbs.		lbs.	
Beef	312,000	6,788	2	4	.001
Veal	79,920	244	.30	77	.09
Mutton	266,640	—	—	4	.001
Pork	1,511,360	35,405	2	1,745	.1
	BACON FACTORIES.				
Pork	19,684,320	194,823	.9	14,844	.07

Table 60a.—Quantities of Offals Condemned for *Tuberculosis and other diseases* in Slaughter Houses and Bacon Factories.

Offals	TUBERCULOSIS									
	Slaughter Houses								Bacon Factories	
	Beef		Veal		Mutton		Pork		Pork	
	No.	Wt. lbs.	No.	Wt. lbs.	No.	Wt. lbs.	No.	Wt. lbs.	No.	Wt. lbs.
Heads	79	1738	5	55	—	—	2120	25440	11923	142076
Lungs	172	860	18	45	—	—	2838	2838	16774	16774
Hearts	86	430	9	22½	—	—	1419	709½	8387	4193½
Stomachs	3	90	2	30	—	—	1353	1353	7561	7561
Intestines	2	60	1	15	—	—	1431	11448	12848	102784
Spleens	1	3	1	1½	—	—	172	43	1156	289
Livers	30	360	2	12	—	—	1353	4059	7561	22683
Kidneys	—	—	2	1	—	—	22	11	153	76½
Udders	—	—	—	—	—	—	—	—	—	—
Other Organs	—	—	—	—	—	—	—	—	—	—
	OTHER DISEASES									
		lbs.		lbs.		lbs.		lbs.		lbs.
Heads	—	—	—	—	—	—	—	—	—	—
Lungs —	3	15	6	15	4	4	2733	2733	26175	26175
Hearts	1	5	2	5	—	—	232	116	1625	812½
Stomachs	—	—	—	—	—	—	1	1	—	—
Intestines	1	30	—	—	—	—	1	8	2	16
Spleens	—	—	—	—	—	—	—	—	—	—
Livers	74	888	—	—	225	450	1057	3171	9564	28692
Kidneys	—	—	—	—	—	—	11	5½	186	93
Udders	—	—	—	—	—	—	—	—	—	—
Other Organs	—	—	—	—	—	—	—	—	—	—

Table 60b.—Showing number of carcases inspected and the quantity of meat including Offals condemned in Slaughter Houses.

Class of Animal	Number of Carcases Examined	Condemned		
		Wholly	Partially	Quantity of Meat and Offals
				lbs.
Cattle	1,641	14	269	19,827
Calves	235	—	4	71
Sheep	7,427	1	—	50
Pigs	1,632	22	413	10,627¼

The amount of meat seized and surrendered during the year was as follows :—

Variety of Meat	AMOUNT SEIZED IN SHOPS		AMOUNT SURRENDERED	
	Tb.	Non Tb.	Tb.	Non Tb.
	lbs.	lbs.	lbs.	lbs.
Beef	844¼	45½	15,928½	4,504
Pork	166	—	9,227¼	1,399
Poultry	2	24	—	—
Rabbits	—	—	—	—
Fruit	—	2½	—	—

PROSECUTIONS.

For offences against the Public Health Acts :—

For the sale of unsound meat—10 prosecutions. Fines amounting to £3 11s. 6d. were imposed.

For offences against the Corporation Bye-Laws—5 prosecutions, and fines amounting to £1 11s. 0d. were imposed.

For offences against the Slaughter of Animals Act, 1935—2 prosecutions. Fines amounting to 10/- were imposed.

(C) FOOD AND DRUGS ACTS.

MILK.

Appended herewith is the Report of the City Analyst (Mr. D. J. O'Sullivan, M.Sc., F.I.C.)

Table 60c.—Showing the number of samples of Milk submitted for Analysis during the year 1938 and the results thereof.

Quarter ended	No. of Samples	Genuine	Adulterated
March 31st, 1938	180	163	7
June 30th, 1938	160	133	37
Sept. 30th, 1938	130	125	5
Dec. 31st, 1938	139	139	—
Totals	609	560	49

Table 61.—Showing results of proceedings against vendors of adulterated samples and fines imposed.

Extent and form of Adulteration	Fines Imposed	
	Fines	Costs
Deficient in Milk Fat 11%	3/6	15/8½
,, ,, 6%	2/6	15/8
,, ,, 8%	3/6	15/8
,, ,, 10%	5/–	15/8
,, ,, 16%	7/6	15/8
,, ,, 25%	7/6	15/8
,, ,, 11%	3/6	15/8
,, ,, 6%	3/6	15/8
,, ,, 10%	5/–	15/8
,, ,, 8%	5/–	15/8
,, ,, 11%	3/6	15/8
,, ,, 8%	5/–	15/8
,, ,, 10%	2/6	17/8
,, ,, 16%	3/6	15/8
,, ,, 6%	5/–	17/8
,, ,, 10%	2/6	17/8
,, ,, 10%	3/6	15/8
,, ,, 11%	2/6	15/8
,, ,, 11%	1/–	15/8
,, ,, 11%	5/–	15/8
,, ,, 11%	5/–	15/8
,, ,, 6%	3/6	15/8
,, ,, 11%	5/–	15/6
,, ,, 11%	5/–	17/8
,, ,, 8%	3/6	15/8
,, ,, 6%	—	—
,, ,, 8%	—	—
,, ,, 10%	5/–	14/6
,, ,, 11%	7/6	15/8
,, ,, 11%	5/–	15/8

BUTTER.

Table 62.—Showing number of Samples of Butter submitted for analysis during the year and the results thereof.

Quarter ended	No. of Samples	Genuine	Adulterated
March 31st, 1938	42	42	—
June 30th, 1938	27	27	—
Sept. 30th, 1938	33	31	2
Dec. 31st, 1938	37	37	—
Totals	139	137	2

Table 63.—Showing results of proceedings against vendors of adulterated samples and fines imposed.

Extent and form of Adulteration	Fines	Costs
Butter + 3.2% excess water	5/–	16/8
Butter + 2.2% excess water	5/–	16/8
Camphorated Oil	7/6	17/–
Camphorated Oil	7/6	17/–
Camphorated Oil	7/6	17/–
Olive Oil	7/3	16/10
Cream	3/6	17/2
Cake	Dismissed	—
Camphorated Oil	5/–	16/3
Olive Oil	5/–	16/6

MARGARINE.

Table 64.—Showing the number of samples of Margarine submitted for analysis during the year and the results thereof.

Quarter ended	No. of Samples	Genuine	Adulterated
March 31st	12	12	—
June 30th	15	15	—
Sept. 30th	9	9	—
Dec. 31st	12	12	—
Totals	48	48	—

SPIRITS.

Table 65.—Showing the number of samples of Spirits submitted for analysis during the year and the results thereof.

Quarter ended	No. of Samples	Genuine	Adulterated
March 31st	5	5	—
June 30th	5	5	—
Sept. 30th	4	4	—
Dec. 31st	8	8	—
Totals	22	22	—

Table 66.—Showing the number of miscellaneous samples submitted for analysis during the year and the results thereof.

Quarter ended	No. of Samples	Genuine	Adulterated
March 31st	98	91	7
June 30th	110	108	2
Sept. 30th	83	82	—
Dec. 31st	123	122	1
Totals ..	414	403	10

Table 67.—Showing details in regard to miscellaneous samples examined during the year.

Miscellaneous	Mar. 31st	June 30th	Sept. 30th	Dec. 31st
Drugs	17	30	2	13
Sugar	16	12	9	12
Rice	10	7	7	6
Flour	10	5	5	7
Beer	10	9	7	10
Jam	6	5	10	6
Cheese	5	5	6	5
Confectionery	4	3	4	20
Salt	4	1	1	3
Oatmeal	2	—	—	—
Tea	2	2	3	2
Bread	2	1	—	2
Wine	2	3	2	3
Sausages	1	1	—	1
BlackPudding	1	1	—	—
Drisheen	—	—	—	1
Suet	—	—	—	1
Sardines	—	—	—	1
White Pudding	1	—	—	—
Mineral Water	1	7	5	3
Cider	1	1	10	3
Camphor	1	—	—	—
Pickles	1	—	—	—
Sweets	1	—	—	3
Cocoa	—	8	4	6
Dripping	—	2	—	2
Cream	—	2	1	7
Lard	—	1	—	—
Raspberry Wine	—	1	—	—
Sauce	—	1	—	1
Bisto	—	1	—	—
Vinegar	—	1	4	5
Dates	—	—	1	1
Treacle	—	—	1	—
Peas	—	—	—	1
Sago	—	—	—	1
Coffee	—	—	—	1
Total	98	110	82	127

The figures in the tables have, from the point of view of adulteration, little real significance as they disclose only a routine ; and, in this sense, they might, with advantage, be " taken as read." But they do express, in the variety of the samples, the wide choice of foodstuffs available to the public. It is in this choice and its wise use that the modern interest in food lies and that constitutes the problem of nutrition.

The adulteration detected during the year evokes the following comments :—

Milk. The proportion of unsatisfactory samples was smaller than preceding years. More to be noted with satisfaction, the practice of stretching short supplies during the winter months by the addition of water seems to have disappeared.

These happy results must be credited not only to the vigilance of the Food and Drugs Inspectors but also to the greater efforts of producers in co-operation with the general scheme of public health and administration.

Olive Oil and its Products. Adulteration of olive oil provided a real feature. In form and extent it varied from substitution by mineral oil suitably dyed to stimulate the genuine article to mere dilution with cheaper vegetable oils. Because the sale of debased olive oil has not been confined to any particular area but widespread throughout the country, it may be as well, for the purpose of record, to state the facts that emerged in the investigation of these cases.

Of the vegetable oils olive is the most difficult to produce and the most expensive, but is the most esteemed for culinary and pharmaceutical uses. Difficulties in obtaining supplies from the usual Continental sources (more especially Spain and Italy, whose internal conditions have not been normal) and the operation of a home controlled monopoly seem to have widened considerably its price margin in comparison with the other vegetable oils.

Substitution was availed of principally in the cheaper end of the trade, *e.g.*, the " twopenny bottle " stocked by the general dealer.

Samples taken at the premises of pharmacists were generally of good merchantable quality.

In the preceedings instituted in the cases the Court generally took the view that the shopkeepers were relatively innocent of the fraud and only light fines were imposed. The wholesalers were effectively screened.

Cider. A home-produced brand, helped by an Excise Duty advantage, achieved an unenviable reputation for potency at a small price. Examination of samples showed the presence of about 9% of alcohol (which is double the amount in beer) and of acetaldehyde ; they also seemed to have been newly fermented. The high alcohol content, acetaldehyde and newness probably accounted for the extra exhilirating properties.

Cream Buns and Cream. Boric acid was found in cream and the creamy part of confectionery. This is a recrudesence of an old practice.

The liability of cream to lose its attractions through souring must always provide the temptation to use preservatives.

Section VII.—Water Supply

GENERAL LAYOUT.

The Cork Waterworks is situated on the river Lee a half mile west of the city boundary. It consists of the following :—

(1) Pumping plant for lifting purified water to service reservoirs on the adjacent hillside. From these reservoirs the city is supplied by gravitation.

(2) The purification plant in which raw river water is filtered and in which both filtered river water and auxiliary supply from gravel beds are subjected to Chloramine treatment.

Pumping Plant.

The pumping plant which has been developed over a period of nearly 100 years consists of :—

(*a*) Five water turbine-driven pumping units, utilising a head of six feet, having a total capacity of 5¼ million gallons per day under favourable conditions.

(*b*) Three sets of three-throw ram pumps driven by triple expansion steam engines, installed in 1904, having a total capacity of 4½ million gallons per day.

(*c*) Two sets of three-throw ram pumps driven by Diesel engine, installed in 1927, having a total capacity of a million gallons per day.

(*d*) Three electrically driven centrifugal pumps installed in 1936, having a total capacity of 6 million gallons per day.

Formerly the main supply was drawn from a tunnel in gravel beds close to the river. This tunnel discharged, and still discharges, into what is now called the filtered water tank and is really the sump from which all the pumps draw. Up to 1928 the supply from the tunnel was supplemented when necessary by admitting raw water from the river, through an intake which is now out of commission.

Filtration Plant.

The filtration plant, constructed in 1928 and extended in 1934, is situated to the west of the filtered water sump and its intake for drawing water from the river is 137 yards up stream from the old raw water intake.

Purification is divided into four stages :—

(*a*) Coarse screening at the river intake. The screen has an area of 27.7 sq. ft. and is constructed of 1″ iron bars placed at 3″ centres in a concrete setting.

(*b*) Fine screening at the filter house through box screens, which are constructed of ⅛″ mesh, each having a cubic capacity of 29 cu. ft. and surface area of 29.8 sq. ft. As they are arranged in duplicate, one can be withdrawn for cleaning by placing the other in commission.

(*c*) Filtration through Candy rapid gravity sand filters.

(*d*) Sterilisation of both the filtered and tunnel waters by the chloramine process.

Sources of Supply.

(*a*) Gravel beds which yield a pure water. A horizontal tunnel is driven through gravel beds for a length of 600 yards. Its distance from the river bank varies from about 3 feet at its commencement to about 12 feet at its centre. At the extreme end away from the works is situated a well which is about 16 feet deep ; and the tunnel starts in the wall of this well at a depth of 14 feet. From this point the tunnel is laid at a fall of 1/300 to discharge into the main Filtered Water suction tank. The tunnel is circular in section, and is formed for the first 100 yards of its course of earthenware pipes 2 feet in diameter with numerous perforations around its circumference. The remaining 500 yards consist of a circular tunnel 3 feet in diameter built of bricks laid dry. With the exception of the invert the entire tunnel is pervious. At intervals of 100 yards the tunnel is intersected by wells, each about 12 feet in diameter and about 20 feet deep. They were constructed to augment the flow, but they also serve as settlement tanks. The water taken from this tunnel is first quality water ; it is chlorinated and is delivered into the filtered water suction tank. Its pH value is usually about 6.8 and its colour has a reading of 3 to 5 on the Hazen scale, which means that it is really colourless.

This source of supply has been frequently analysed and results have been satisfactory. In wet weather the yield is about 3½ million gallons per day, while in dry weather it is about 2¼ million gallons per day, which is less than half the total maximum demand.

(*b*) *The River Lee :* This gives a polluted water. The remainder of the supply is drawn direct from the river Lee, which can always supply considerably more than the requirements.

The probable extreme dry weather flow has been estimated to be in the region of 20 million gallons per day. Under the conditions of a low flow which obtained in the Autumn of 1937, when 3 million gallons per day was being drawn from the river, there was still sufficient water to operate two turbines giving a useful pumping power of 80 H.P., which is equivalent to a flow of 90 million gallons per day. The amount of water obtainable is therefore limited solely by the capacity of the filter plant.

When in good condition the river varies from a clear to a light brown colour, and has a pH value of 7.2, temporary hardness of 5 parts per million, and the amount of oxygen absorbed in parts per 100,000 is only 0.1. This water is in good condition for treatment. When it is in bad condition the water varies from a yellow to a brown colour. The pH value varies between 6.6 and 6.9. The temporary hardness is 1.2 parts per 100,000. The oxygen absorbed is any figure up to 0.7 parts per 100,000. Water in this condition is difficult to treat.

Treatment.

All the river water is treated in Candy rapid gravity filters. Briefly the treatment is as follows :—

(*a*) Removal of large floating masses by fine and coarse screens.

(*b*) Removal of fine suspended impurities and colouring matter by filters.

The water is drawn from the river intake (18.0 O.D.) through a 24" concrete main, whence it flows through the fine screens situated at the entrance to the filter house into the crude water suction sump. From there it is pumped to an overhead tank (which commands the filter beds), from which it flows over a rectangular weir, through a channel on the filter beds. The weir measures the quantity of water and also serves as a control on the proportion of alumina added. The channel between the weir and filters is fitted with baffles to give a turbulent flow, and acts as a mixing race to ensure a thorough and uniform distribution of the coagulant with the water. Having passed through the filters the water gravitates to the filtered water sump where it mixes with the water from the tunnel as described above. The total supply is treated with chloramine. This process consists of adding ammonia and chlorine in the order in which they are named. The ammonia is added in the form of ammonium sulphate solution at the main filtered water outlet in the Candy plant, and the chlorine gas at the entrance to the filtered water tank.

BACTERIOLOGICAL EXAMINATIONS.

In the report for 1931 I outlined the procedure adopted in connection with the examination of the supply at the bacteriological laboratories of University College, Cork, by Dr. W. J. O'Donovan. In the year 1928 Dr. O'Donovan undertook a detailed and systematic examination in which a very large number of samples were studied. Our subsequent procedure has been based on his findings of that year and his recommendations have resulted in a supply of a consistently high degree of purity. In 1938, as in former years, samples were collected and examined on five days during each week. The procedure included an estimate of the number of bacteria growing at 37° C. in 24 hours. The total number of samples examined amounted to 254. The average number of bacteria in 1 c.c. was 1.84 and the number of samples sterile in 1 c.c. was 80.

Such routine examination of water supplies is of the utmost importance as it affords an adequate check on the efficacy of purification methods and directs attention at once to any possibility of danger arising. The results achieved are not, perhaps, dramatic, but none the less they take their place in the ranks of achievement in the field of preventive medicine. A glance at our statistical tables for typhoid fever reveals at once the enormous improvement which has taken place since the installation of adequate plant for dealing with purification of our supply. Water-borne diseases have entirely disappeared and such cases of typhoid as have arisen have been definitely proved not to be attributable to the water. Considering the vital importance of water to the existence of the community, the sense of security arising from a supply of known purity is very great indeed, and in this respect it may truthfully be said that the funds invested in the erection of the new plant are not only a very sane form of insurance but also a valuable investment.

The routine procedure in connection with these examinations is that samples are collected by the staff of the Public Health Department in special sterilised bottles. These samples are transmitted to the Laboratory for examination. A report is sent daily to the Medical Officer of Health

who, in turn, sends a copy to the Water Engineer. In the event of an unsatisfactory sample coming to light in the laboratory the subsequent cycle of events is speeded up by telephonic communications between the various departments pending receipt of a subsequent formal report. In this manner there is exercised a triple check in the purification and distribution of the supply.

In the following tables are summarised the results of the various examinations carried out during the year (and previous years) at the Bacteriological Laboratories, U.C.C., by Dr. W. J. O'Donovan.

Table 68.—Summary of results of routine examinations of water during 1938.

Total Routine Samples of Tap Water	Bacillus Coli Test					Average daily No. of Bacteria per c.c.	No. of Samples sterile in 1 c.c.
	100 c.c's —ive	100 c.c's +ive	50 c.c's +ive	10 c.c's +ive	1 c.c. +ive		
254	251	1	0	1	1	1.84	80

As stated above, the examinations carried out during the year included an estimation of the numbers of bacteria growing at 37° C. in 24 hours. The findings are set out in the following table and compared with those of 1932 (in which year the figures were first computed) and following years.

Table 69.—Average number of bacteria per cubic centimetre growing at 37° C. from daily sample for each month.

Month	1932	1933	1934	1935	1936	1937	1938
January	14.00	1.82	1.17	2.91	1.23	4.09	1.8
February	0.81	1.04	1.65	2.70	1.25	2.80	2.2
March	1.66	1.18	1.28	1.65	0.95	1.45	1.9
April	4.66	1.50	1.45	1.05	1.60	1.18	1.5
May	4.57	1.82	3.47	2.73	1.90	0.70	0.9
June	5.41	4.15	21.21	2.10	1.95	0.23	1.4
July	44.09	19.27	18.47	2.95	5.00	3.68	2.0
August	20.31	14.62	7.41	5.23	1.85	1.00	1.4
September	2.18	2.77	1.70	8.95	3.43	2.78	2.2
October	4.66	2.14	4.00	7.94	1.41	6.43	2.0
November	4.72	1.36	4.18	4.42	2.75	2.81	2.6
December	2.24	3.89	4.00	1.22	3.90	5.40	2.2

Table 70.—Comparative results of examinations of tap water made during each of the years from 1928 to 1938.

Year	Total number of samples examined	BACILLUS COLI TEST.				
		100 c.c's −ive	100 c.c's +ive	50 c.c's +ive	10 c.c's +ive	1 c.c. +ive
1928	245	187 (76.3%)	10 (4.0%)	32 (13.1%)	14 (5.7%)	2 (0.8%)
1929	251	153 (60.9%)	44 (17.5%)	40 (15.9%)	9 (3.6%)	5 (2.0%)
1930	268	216 (80.6%)	15 (5.6%)	14 (5.6%)	13 (4.5%)	10 (3.7%)
1931	260	242 (93.0%)	9 (3.5%)	9 (3.5%)	— —	— —
1932	260	245 (94.2%)	3 (1.2%)	12 (4.6%)	— —	— —
1933	253	244 (96.4%)	4 (1.6%)	4 (1.6%)	1 (0.4%)	— —
1934	261	249 (95.4%)	4 (1.5%)	6 (2.3%)	2 (0.8%)	— —
1935	252	235 (93.2%)	3 (1.2%)	7 (2.8%)	5 (2%)	2 (0.8%)
1936	252	244 (96.8%)	2 (0.8%)	5 (2%)	1 (0.4%)	— —
1937	253	235 (92.9%)	11 (4.3%)	6 (2.4%)	0 —	1 (0.4%)
1938	254	251 (98.8%)	1 (0.4%)	0 —	1 (0.4%)	1 (0.4%)

As indicated by the bacteriological results, which are the best obtained so far, an extremely high degree of purity was maintained throughout the year, indicating a corresponding degree of efficiency in the working of the filtration plant. The fact that no less than 98.8 per cent. of the samples examined were free from coliform bacilli in amounts of 100 c.c.'s is sufficient testimony in this respect. Dr. O'Donovan's comments on this aspect of his examinations are as follows :—

"On three occasions only were lactose fermenting organisms encountered in the primary tests. First in April, when faecal type I B. Coli were found in a sample from Pordham's Lane, secondly in July, in which an atypical citrate negative organism was isolated and third in October, when an intermediate type I was found in a hydrant sample.

Excluding four high plate counts, which were certainly due to local conditions, the average daily bacterial content of the water was 1.84.

These two factors are very striking evidence of the high standard of purity which is consistently maintained in the City water supply."

The reference in the second last paragraph of Dr. O'Donovan's report is to a sample taken from Pordham's Lane on the 31st March, which yielded an agar count of 325 organisms per c.c., while fractions put up in McConkey's broth were negative. In view of the high agar count an additional sample was taken from the same source on 2nd April, from which, as stated, B. Coli were forthcoming, This result was immediately communicated to me by telephone and was transmitted at once to the Water Engineer for his observations. Mr. Riordan investigated the matter and reported to me as follows :—

"With reference to your note of the 3rd instant, stating that an unsatisfactory sample of tap water was taken the previous day from a house in Pordham's Lane during routine tests.

I investigated this matter immediately and found that our Service Staff had carried out some repairs on 31st ult at Corbett's Lane which is in the immediate vicinity and above Pordham's Lane. To effect the necessary repairs the valves controlling the two lanes had to be shut down for a few hours and when they were opened up they evidently caused a disturbance of a deposit which had previously remained dormant in the pipe line ; also due to the fact that Pordham's Lane is on a dead-end this disturbance was aggravated, thus giving an unsatisfactory sample. I was glad to note that the sample taken by your Staff on the 5th inst. was found to be satisfactory and that the trouble was isolated and temporary.

To avoid any similar recurrence, instructions have been issued to the effect that when repairs of this nature are being carried out all dead ends in the immediate vicinity must be thoroughly flushed before putting the supply back into operation."

In connection with this matter it is satisfactory to note that not only was the disturbance not of any importance in itself from the public health point of view but that it was detected at once by the procedure created for the purpose of protecting the supply. The other two samples referred to specifically by Dr. O'Donovan were not of any practical significance so that it may be stated that the measures adopted for the purification of the water supply functioned with full efficiency throughout the year.

Table 71.—Detailed Results of Bacteriological Examinations of Water Samples, 1938.

Explanation of Abbreviations:—AG = Acid and Gas; A = Acid only. A?G = Acid with a trace of gas. O = No reaction. F = Flourescence; Pos = Positive Colonies; + = Indol reduced; L = Lactose peptone water. G = Glucose peptone water; S = Saccharose peptone water. I = Indol; Mld = Mould.

Date	SOURCE	McCONKEY'S BROTH				Presumptive B. Coli per 100 c.c.	Agar Count per c.c. 370 c.	COLON GROUP CONFIRMATIONS								REMARKS
		50 c.c.	10 c.c.	1 c.c.	0.1 c.c.			Milk	Sacch.	Dulcite	Indol.	V.P.	M.R.	Citrate	Gelatin	
Jan. 3...	22 Hanover Street ...	0	0/5	0/5	—	0	0									
„ 4...	4 Blarney Street ...	0	0/5	0/5	—	0	1									
„ 5...	4 Queen's Place ...	0	0/5	0/5	—	0	0									First Quality Water
„ 6...	5 Nicholas Church Place ...	0	0/5	0/5	—	0	1									
„ 7...	24 Dominick Street ...	0	0/5	0/5	—	0	0									
„ 10...	Hydrant, Anderson's Quay ...	0	0/5	0/5	—	0	0									
„ 11...	364 Blarney Street ...	0	0/5	0/5	—	0	1									
„ 12...	2 Broad Street ...	0	0/5	0/5	—	0	2									First Quality Water
„ 13...	21 St. Finbarr's Place ...	0	0/5	0/5	—	0	0									
„ 14...	12 Pope's Quay ...	0	0/5	0/5	—	0	4									
„ 17...	25 Grattan Street ...	0	0/5	0/5	—	0	2									
„ 18...	94 Shandon Street ...	0	0/5	0/5	—	0	13									
„ 19...	Honan Hostel, College Road ...	0	0/5	0/5	—	0	3									First Quality Water
„ 20...	105 Barrack Street ...	0	0/5	0/5	—	0	0									
„ 21...	4 Church Street ...	0	0/5	0/5	—	0	1									
„ 24...	2 Sheares Street ...	0	0/5	0/5	—	0	1									
„ 25...	Hydrant, Patrick's Quay ...	0	0/5	0/5	—	0	3									
„ 26...	4 Sunnyside ...	0	0/5	0/5	—	0	1									First Quality Water
„ 27...	25 Lavitt's Quay ...	0	0/5	0/5	—	0	0									
„ 28...	27 Barrack Street ...	0	0/5	0/5	—	0	1									
„ 31...	24 Dominick Street ...	0	0/5	0/5	—	0	3									
Feb. 1...	163 Blarney Street ...	0	0/5	0/5	—	0	6									
„ 2...	10 Tuckey Street ...	0	0/5	0/5	—	0	1									First Quality Water
„ 3...	Laboratory Tap ...	0	0/5	0/5	—	0	2									
„ 4...	22 '98 Street ...	0	0/5	0/5	—	0	7									

Table 71.—Detailed Results of Bacteriological Examinations of Water Samples, 1938—continued.

Date	SOURCE	McCONKEY'S BROTH				Presumptive B. Coli per 100 c.c.	Agar Count per c.c. 370 c.	COLON GROUP CONFIRMATIONS								REMARKS
		50 c.c.	10 c.c.	1 c.c.	0.1 c.c.			Milk	Sacch.	Dulcite	Indol.	V.P.	M.R.	Citrate	Gelatin	
Feb. 7...	Albert Quay (Hydrant) ...	0	0/5	0/5	—	0	4									First Quality Water
,, 8...	50 Shandon Street ...	0	0/5	0/5	—	0	2									
,, 9...	58 Evergreen Street ...	0	0/5	0/5	—	0	0									
,, 10...	2 St. Patrick's Avenue ...	0	0/5	0/5	—	0	2									
,, 11...	165 Sunday's Well Road ...	0	0/5	0/5	—	0	0									
,, 14...	4 James' Street ...	0	0/5	0/5	—	0	8									First Quality Water
,, 15...	4 Church Street ...	0	0/5	0/5	—	0	0									
,, 16...	10 Industrial Place ...	0	0/5	0/5	—	0	2									
,, 17...	7 Emmet Place ...	0	0/5	0/5	—	0	0									
,, 18...	20 Winter's Hill ...	0	0/5	0/5	—	0	1									
,, 21...	Hydrant, Albert Quay ...	0	0/5	0/5	—	0	1									First Quality Water
,, 22...	1 Moore Street ...	0	0/5	0/5	—	0	1									
,, 23...	12 Pope's Quay ...	0	0/5	0/5	—	0	1									
,, 24...	23 Gillabbey Street ...	0	0/5	0/5	—	0	0									
,, 25...	13 Cook Street ...	0	0/5	0/5	—	0	1									
,, 28...	6 St. Vincent's Place ...	0	0/5	0/5	—	0	5									First Quality Water
March 1...	4 Albert Street ...	0	0/5	0/5	—	0	5									
,, 2...	50 Shandon Street ...	0	0/5	0/5	—	0	2									
,, 3...	2 Copley Place ...	0	0/5	0/5	—	0	2									
,, 4...	2 St. Paul's Avenue ...	0	0/5	0/5	—	0	4									
,, 7...	Hydrant, Anderson's Quay ...	0	0/5	0/5	—	0	0									First Quality Water
,, 8...	3 Cattle Market Avenue ...	0	0/5	0/5	—	0	2									
,, 9...	18 St. Patrick's Hill ...	0	0/5	0/5	—	0	1									
,, 10...	Hill Lane, Pope's Quay ...	0	0/5	0/5	—	0	0									
,, 11...	23 Tower Street ...	0	0/5	0/5	—	0	2									

Table 71.—Detailed Results of Bacteriological Examinations of Water Samples, 1938—continued.

Date	SOURCE	McCONKEY'S BROTH				Presumptive B. Coli per 100 c.c.	Agar Count per c.c. 370 c.	COLON GROUP CONFIRMATIONS								REMARKS
		50 c.c.	10 c.c.	1 c.c.	0.1 c.c.			Milk	Sacch.	Dulcite	Indol.	V.P.	M.R.	Citrate	Gelatin	
March 14...	8 Liberty Street ...	0	0/5	0/5	—	0	3									First Quality Water
,, 15...	74 Shandon Street ...	0	0/5	0/5	—	0	0									
,, 16...	1 Rathmore Road ...	0	0/5	0/5	—	0	12									
,, 18...	12 Pope's Quay ...	0	0/5	0/5	—	0	2									
,, 21...	Hydrant, Albert Quay ...	0	0/5	0/5	—	0	2									First Quality Water
,, 22...	1 Crosses Green ...	0	0/5	0/5	—	0	0									
,, 23...	105 North Main Street ...	0	0/5	0/5	—	0	0									
,, 24...	5 Upper Rope Walk ...	0	0/5	0/5	—	0	0									
,, 25...	15 Glankittane Square ...	0	0/5	0/5	—	0	0									
,, 28...	24 Dominick Street ...	0	0/5	0/5	—	0	2									2/4/38. Faecal Type I. Pordham's Lane sample shows high presumptive B. Coli figure. Local investigation advised. Faecal type B. Coli isolated later.
,, 29...	110 Barrack Street ...	0	0/5	0/5	—	0	1									
,, 30...	4 Paul's Avenue ...	0	0/5	0/5	—	0	1									
,, 31...	11 Pordham's Lane ...	0	0/5	0/5	—	0	325									
April 1...	20 Denroche's Cross ...	0	0/5	0/5	—	0	11									
,, 2...	11 Pordham's Lane ...	AG	5/5	5/5	—	0	57	—	0	—	+	0	+	0		
,, 4...	Hydrant, Victoria Quay ...	0	0/5	0/5	—	0	0									First quality water. Condition of samples from Pordham's Lane was transitory
,, 5...	Pordham's Lane ...	0	0/5	0/5	—	0	3									
,, 5...	Laboratory Tap ...	0	0/5	0/5	—	0	0									
,, 6...	13 Caroline Street ...	0	0/5	0/5	—	0	2									
,, 7...	6 St. Finbarr's Place ...	0	0/5	0/5	—	0	0									
,, 8...	18 Oliver Plunkett Street ...	0	0/5	0/5	—	0	1									
,, 11...	Tap—North Dispensary ...	0	0/5	0/5	—	0	0									Fjrst Quality Water
,, 12...	3 St. Nicholas Place ...	0	0/5	0/5	—	0	2									
,, 13...	42a MacCurtain Street ...	0	0/5	0/5	—	0	0									
,, 14...	29 Friar Street ...	0	0/5	0/5	—	0	0									

Table 71.—Detailed Results of Bacteriological Examinations of Water Samples, 1938—continued.

Date	SOURCE	McCONKEY'S BROTH				Presumptive B. Coli per 100 c.c.	Agar Count per c.c. 370 c.	COLON GROUP CONFIRMATIONS								REMARKS
		50 c.c.	10 c.c.	1 c.c.	0.1 c.c.			Milk	Sacch.	Dulcite	Indol.	V.P.	M.R.	Citrate	Gelatin	
April 19...	Hydrant, Albert Quay ...	0	0/5	0/5	—	0	2									First Quality Water
„ 20...	62 Kearney's Avenue ...	0	0/5	0/5	—	0	0									
„ 21...	3 Sheares' Street ...	0	0/5	0/5	—	0	0									
„ 22...	4 Church Street ...	0	0/5	0/5	—	0	1									
„ 25...	14 Sullivan's Quay ...	0	0/5	0/5	—	0	4									First Quality Water
„ 26...	87 Liberty Street ...	0	0/5	0/5	—	0	1									
„ 27...	12 Millerd Street ...	0	0/5	0/5	—	0	1									
„ 28...	26 Eason's Hill ...	0	0/5	0/5	—	0	2									
„ 29...	9 Cook's Lane ...	0	0/5	0/5	—	0	2									
May 2...	Hydrant, Albert Quay ...	0	0/5	0/5	—	0	2									First Quality Water
„ 3...	11 Fort Street ...	0	0/5	0/5	—	0	1									
„ 4...	2 Cross Street ...	0	0/5	0/5	—	0	0									
„ 5...	2 Little William Street ...	0	0/5	0/5	—	0	1									
„ 6...	Drummy's Lawn ...	0	0/5	0/5	—	0	0									
„ 9...	6 Vicar Street ...	0	0/5	0/5	—	0	0									First Quality Water
„ 10...	88 Shandon Street ...	0	0/5	0/5	—	0	0									
„ 11...	5 Prospect Row ...	0	0/5	0/5	—	0	1									
„ 12...	12 Pope's Quay ...	0	0/5	0/5	—	0	1									
„ 13...	10 Barrack Street ...	0	0/5	0/5	—	0	2									
„ 16...	Hydrant, Anderson's Quay ...	0	0/5	0/5	—	0	1									First Quality Water
„ 17...	27 Grattan Street ...	0	0/5	0/5	—	0	1									
„ 18...	24 Dominick Street ...	0	0/5	0/5	—	0	2									
„ 19...	105 North Main Street ...	0	0/5	0/5	—	0	0									
„ 20...	25 Evergreen Buildings ...	0	0/5	0/5	—	0	1									
„ 23...	11 North Main Street ...	0	0/5	0/5	—	0	1									First Quality Water
„ 24...	50 Shandon Street ...	0	0/5	0/5	—	0	0									
„ 25...	7 Father Matthew Quay ...	0	0/5	0/5	—	0	2									
„ 26...	3 Crosses Green ...	0	0/5	0/5	—	0	1									
„ 27...	9 Sunday's Well Avenue ...	0	0/5	0/5	—	0	1									

Table 71.—Detailed Results of Bacteriological Examinations of Water Samples, 1938—continued.

Date	SOURCE	McCONKEY'S BROTH				Presumptive B. Coli per 100 c.c.	Agar Count per c.c. 370 c.	COLON GROUP CONFIRMATIONS								REMARKS
		50 c.c.	10 c.c.	1 c.c.	0.1 c.c.			Milk	Sacch.	Dulcite	Indol.	V.P.	M.R.	Citrate	Gelatin	
May 30...	Hydrant, Victoria Quay ...	0	0/5	0/5	—	0	0									
,, 31...	24 Dominick Street ...	0	0/5	0/5	—	0	2									
June 1...	17 Cockpit Lane ...	0	0/5	0/5	—	0	0									First Quality Water
,, 2...	11 Desmond's Square ...	0	0/5	0/5	—	0	0									
,, 3...	11 Emmett Place ...	0	0/5	0/5	—	0	1									
,, 7...	15 Rock Buildings ...	0	0/5	0/5	—	0	2									
,, 8...	7 Tuckey Street ...	0	0/5	0/5	—	0	2									
,, 9...	4 Bishop Street ...	0	0/5	0/5	—	0	3									First Quality Water
,, 10...	4 Alfred Street ...	0	0/5	0/5	—	0	1									
,, 13...	Penrose Quay (Hydrant) ...	0	0/5	0/5	—	0	0									
,, 14...	66 Barrett's Buildings ...	0	0/5	0/5	—	0	1									
,, 15...	Drummy's Lawn ...	0	0/5	0/5	—	0	0									First Quality Water
,, 16...	2 Keyser's Hill ...	0	0/5	0/5	—	0	0									
,, 17...	45 South Main Street ...	0	0/5	0/5	—	0	2									
,, 20...	6 Bachelor's Quay ...	0	0/5	0/5	—	0	0									
,, 21...	12 Pope's Quay ...	0	0/5	0/5	—	0	6									
,, 22...	21 Cove Street ...	0	0/5	0/5	—	0	2									First Quality Water
,, 23...	19 Drawbridge Street ...	0	0/5	0/5	—	0	6									
,, 24...	12 Cattle Market Avenue ...	0	0/5	0/5	—	0	3									
,, 27...	2 Deane Street ...	0	0/5	0/5	—	0	0									
,, 28...	13 Caroline Street ...	0	0/5	0/5	—	0	1									
,, 29...	Lapp's Quay (Hydrant) ...	0	0/5	0/5	—	0	0									First Quality Water
,, 30...	60 Cornmarket Street ...	0	0/5	0/5	—	0	0									
July 1...	86 Blarney Street ...	0	0/5	0/5	—	0	2									
,, 4...	41 Barrack Street ...	0	0/5	0/5	—	0	1									First Quality Water
,, 5...	50 Shandon Street ...	0	0/5	0/5	—	0	1									
,, 6...	63 Thomas Davis Street ...	0	0/5	0/5	—	0	0									
,, 7...	Hydrant, St. Patrick's Quay...	0	0/5	0/5	—	0	Unco	untab	le							Satisfactory. Probably contaminated by disturbance of dead water.
,, 8...	3 O'Brien's Place ...	0	0/5	0/5	—	0	2									

Table 71.—Detailed Results of Bacteriological Examinations of Water Samples, 1938—continued

Date	SOURCE	McCONKEY'S BROTH				Presumptive B. Coli per 100 c.c.	Agar Count per c.c. 370 c.c.	COLON GROUP CONFIRMATIONS								REMARKS
		50 c.c.	10 c.c.	1 c.c.	0.1 c.c.			Milk	Sacch.	Dulcite	Indol.	V.P.	M.R.	Citrate	Gelatin	
July 11...	2 Clarke's Bridge ...	0	0/5	0/5	—	0	0									
,, 12...	8 Liberty Street ...	0	0/5	0/5	—	0	0									
,, 13...	22 Peter Street ...	—	3/5AG	1/5AG	—	0	Mould	AC	AG	—	0	0	I+	0		First Quality Water
,, 14...	63 North Main Street ...	—	0/5	0/5	—	0	1									
,, 15...	3 Nicholas Church Place ...	0	0/5	0/5	—	0	30									
,, 18...	Hydrant, Albert Quay ...	0	0/5	0/5	—	0	0									
,, 19...	45 South Main Street ...	0	0/5	0/5	—	0	0									
,, 20...	27 Boyces Street ...	0	0/5	0/5	—	0	0									First Quality Water
,, 21...	20 Fort Street ...	0	0/5	0/5	—	0	0									
,, 22...	19 Drawbridge Street ...	0	0/5	0/5	—	0	0									
,, 25...	N. Jetties (Hydrant nr. Cranes)	0	0/5	0/5	—	0	0									
,, 26...	12 Bachelor's Quay ...	0	0/5	0/5	—	0	2									
,, 27...	25 Old Market Place ...	0	0/5	0/5	—	0	0									First Quality Water
,, 28...	22 Sullivan's Quay ...	0	0/5	0/5	—	0	0									
,, 29...	99 South Main Street ...	0	0/5	0/5	—	0	3									
Aug. 2...	10 Anne Street ...	0	0/5	0/5	—	0	750									Taken in connection with other results, B. Coli test is obviously an external effect.
,, 3...	11 Maylor Street ...	0	0/5	0/5	—	0	0									First Quality Water
,, 4...	N. Abbey (C. Guard Barracks)	0	0/5	0/5	—	0	1									
,, 5...	14 Thomond Square ...	0	0/5	0/5	—	0	2									
,, 8...	Hydrant Penrose Quay ...	0	0/5	0/5	—	0	1									
,, 9...	Laboratory Tap ...	0	0/5	0/5	—	0	2									
,, 10...	8 Wandesford Street ...	0	0/5	0/5	—	0	1									First Quality Water
,, 11...	27 Grattan Street ...	0	0/5	0/5	—	0	0									
,, 12...	22 Hanover Street ...	0	0/5	0/5	—	0	4									

Table 71.—Detailed Results of Bacteriological Examinations of Water Samples, 1938—continued

Date	SOURCE	McCONKEY'S BROTH				Presumptive B. Coli per 100 c.c.	Agar Count per c.c. 370 c.c.	COLON GROUP CONFIRMATIONS								REMARKS
		50 c.c.	10 c.c.	1 c.c.	0.1 c.c.			Milk	Sacch.	Dulcite	Indol.	V.P.	M.R.	Citrate	Gelatin	
Aug. 15...	4 Little Cross Street ...	0	0/5	0/5	—	0	1									First Quality Water
,, 16...	31 Boyces Street ...	0	0/5	0/5	—	0	0									
,, 17...	54 Grattan Street ...	0	0/5	0/5	—	0	3									
,, 18...	City Hall ...	0	0/5	0/5	—	0	1									
,, 19...	12 Pope's Quay ...	0	0/5	0/5	—	0	0									
,, 22...	25 Gillabbey Street ...	0	0/5	0/5	—	0	0									First Quality Water
,, 23...	Hydrant, Victoria Quay ...	0	0/5	0/5	—	0	0									
,, 24...	4 Portney's Lane ...	0	0/5	0/5	—	0	3									
,, 25...	Laboratory Tap ...	0	0/5	0/5	—	0	0									
,, 26...	13 Batchelor's Quay ...	0	0/5	0/5	—	0	3									
,, 29...	19 Sives Lane ...	0	0/5	0/5	—	0	2									First Quality Water
,, 30...	8 Barrack Street ...	0	0/5	0/5	—	0	1									
,, 31...	7 Tuckey Street ...	0	0/5	0/5	—	0	5									
Sept. 1...	23 Grattan Street ...	0	0/5	0/5	—	0	1									
,, 2...	182 Old Youghal Road ...	0	0/5	0/5	—	0	0									
,, 5...	88 Lower Glanmire Road ...	0	0/5	0/5	—	0	8									First Quality Water
,, 6...	Hydrant, Lapp's Quay ...	0	0/5	0/5	—	0	0									
,, 7...	39 Douglas Street ...	0	0/5	0/5	—	0	4									
,, 8...	1 Moore Street ...	0	0/5	0/5	—	0	0									
,, 9...	Batchelor's Quay ...	0	0/5	0/5	—	0	1									
,, 12...	142 Evergreen Road ...	0	0/5	0/5	—	0	17									First Quality Water
,, 13...	54 Grattan Street ...	0	0/5	0/5	—	0	1									
,, 14...	4 Brogue Market Hill ...	0	0/5	0/5	—	0	1									
,, 15...	12 Sheares Street ...	0	0/5	0/5	—	0	1									
,, 16...	50 Shandon Street ...	0	0/5	0/5	—	0	2									

Table 71.—Detailed Results of Bacteriological Examinations of Water Samples, 1938—continued

Date	SOURCE	McCONKEY'S BROTH				Presumptive B. Coli per 100 c.c.	Agar Count per c.c. 370 c.c.	COLON GROUP CONFIRMATIONS								REMARKS
		50 c.c.	10 c.c.	1 c.c.	0.1 c.c.			Milk	Sacch.	Dulcite	Indol.	V.P.	M.R.	Citrate	Gelatin	
Sept. 19...	4 Grattan Hill ...	0	0/5	0/5	—	0	0									
,, 20...	Hydrant, Penrose Quay ...	0	0/5	0/5	—	0	3									
,, 21...	8 Sunnyside, Gaol Cross ...	0	0/5	0/5	—	0	0									First Quality Water
,, 22...	17 Grattan Street ...	0	0/5	0/5	—	0	1									
,, 23...	10 Vincent's View ...	0	0/5	0/5	—	0	260									
,, 26...	12 North Abbey Street ...	0	0/5	0/5	—	0	6									
,, 27...	49 Wolfe Tone Street ...	0	0/5	0/5	—	0	0									
,, 28...	14 Charlemont Terrace ...	0	0/5	0/5	—	0	1									First Quality Water
,, 29...	Riordan's Court ...	0	0/5	0/5	—	0	0									
,, 30...	28 St. Finbarr's Place ...	0	0/5	0/5	—	0	2									
Oct. 3...	5 Greenmount Place ...	0	0/5	0/5	—	0	3									
,, 4...	8 Abbey Street ...	0	0/5	0/5	—	0	1									
,, 5...	12 Pope's Quay ...	0	0/5	0/5	—	0	4									First Quality Water
,, 6...	40 Wellington Road ...	0	0/5	0/5	—	0	2									
,, 7...	23 Grattan Street ...	0	0/5	0/5	—	0	4									
,, 10...	Laboratory Tap ...	0	0/5	0/5	—	0	1									
,, 11...	3 Keyser's Hill ...	0	0/5	0/5	—	0	1									
,, 12...	5 Sheares' Street ...	0	0/5	0/5	—	0	2									First Quality Water
,, 13...	Hollymount, Sunday's Well ...	0	0/5	0/5	—	0	2									
,, 14...	50 Shandon Street ...	0	0/5	0/5	—	0	3									
,, 17...	1 Melville Place ...	0	0/5	0/5	—	0	1									
,, 18...	22 Hanover Street ...	0	0/5	0/5	—	0	0									
,, 19...	21 Cove Street ...	0	0/5	0/5	—	0	1									First Quality Water
,, 20...	27 Francis Street ...	0	0/5	0/5	—	0	0									
,, 21...	1 Cattle Market Avenue ...	0	0/5	0/5	—	0	3									

Table 71.—Detailed Results of Bacteriological Examinations of Water Samples, 1938—continued

Date	SOURCE	McCONKEY'S BROTH				Presumptive B. Coli per 100 c.c.	Agar Count per c.c. 370 c.c.	COLON GROUP CONFIRMATIONS								REMARKS
		50 c.c.	10 c.c.	1 c.c.	0.1 c.c.			Milk	Sacch.	Dulcite	Indol.	V.P.	M.R.	Citrate	Gelatin	
Oct. *24...	Hydrant, Penrose Quay ...	AG	0/5	0/5	—	1	8									*Further examination of this sample resulted in the isolation of Intermediate Type I Coliform bacilli. The finding is of no practical significance. Original sample was taken from hose pipe supplying vessel and presence of organism was no doubt due to chance contamination
,, 25...	24 Dominick Street ...	0	0/5	0/5	—	1	8									
,, 26...	48 Ballyhooley Road ...	0	0/5	0/5	—	0	1									
,, 27...	4 Little Cross Street ...	0	0/5	0/5	—	0	1									
,, 28...	32 Sullivan's Quay ...	0	0/5	0/5	—	0	1									
,, 31...	22 Hanover Street ...	0	0/5	0/5	—	0	0									
Nov. 1...	3 Upper Cattle Street ...	0	0/5	0/5	—	0	1									
,, 2...	85 Gardiner's Hill ...	0	0/5	0/5	—	0	1									First Quality Water
,, 3...	Dyke Parade ...	0	0/5	0/5	—	0	1									
,, 4...	24 Dominick Street ...	0	0/5	0/5	—	0	5									
,, 7...	Fishguard Shed ...	0	0/5	0/5	—	0	0									
,, 8...	11 Brown Street ...	0	0/5	0/5	—	0	4									
,, 9...	21 Cove Street ...	0	0/5	0/5	—	0	0									First Quality Water
,, 10...	4 Anne Street ...	0	0/5	0/5	—	0	1									
,, 11...	10 Riordan's Square ...	0	0/5	0/5	—	0	12									
,, 14...	12 Smith Street ...	0	0/5	0/5	—	0	5									
,, 15...	50 Shandon Street ...	0	0/5	0/5	—	0	1									
,, 16...	44 College Road ...	0	0/5	0/5	—	0	0									First Quality Water
,, 17...	7 St. Dominick's Square ...	0	0/5	0/5	—	0	0									
,, 18...	20 Mahony's Avenue ...	0	0/5	0/5	—	0	2									
,, 21...	Hydrant, Lapp's Quay ...	0	0/5	0/5	—	0	2									
,, 22...	2 Wandesford Street ...	0	0/5	0/5	—	0	3									
,, 23...	24 Dominick Street ...	0	0/5	0/5	—	0	3									First Quality Water
,, 24...	Marlboro Lodge, Sidney Place...	0	0/5	0/5	—	0	9									
,, 25...	20 Winter's Hill ...	0	0/5	0/5	—	0	5									

Table 71.—Detailed Results of Bacteriological Examinations of Water Samples, 1938—continued

Date	SOURCE	McCONKEY'S BROTH				Presumptive B. Coli per 100 c.c.	Agar Count per c.c. 370 c.c.	COLON GROUP CONFIRMATIONS								REMARKS
		50 c.c.	10 c.c.	1 c.c.	0.1 c.c.			Milk	Sacch.	Dulcite	Indol.	V.P.	M.R.	Citrate	Gelatin	
Nov. 28...	5 Pope's Road ...	0	0/5	0/5	—	0	2									First Quality Water
,, 29...	1 Gillahugh Cottages ...	0	0/5	0/5	—	0	1									
,, 30...	60 Cornmarket Street ...	0	0/5	0/5	—	0	0									
Dec. 1...	12 Pope's Quay ...	0	0/5	0/5	—	0	1									
,, 2...	Rly. Chambers, MacCurtain St.	0	0/5	0/5	—	0	2									
,, 5...	Hydrant, Albert Quay ...	0	0/5	0/5	—	0	1									First Quality Water
,, 6...	41 Boyces Street ...	0	0/5	0/5	—	0	2									
,, 7...	15 Bandon Road ...	0	0/5	0/5	—	0	6									
,, 8...	13 Dyke Parade ...	0	0/5	0/5	—	0	1									
,, 9...	3 Grattan Street ...	0	0/5	0/5	—	0	2									
,, 12...	50 Shandon Street ...	0	0/5	0/5	—	0	5									First Quality Water
,, 13...	1 Military Road ...	0	0/5	0/5	—	0	0									
,, 14...	11 Upper Cattle Street ...	0	0/5	0/5	—	0	4									
,, 15...	20 Abbey Street ...	0	0/5	0/5	—	0	2									
,, 16...	7 Malachy's Lane ...	0	0/5	0/5	—	0	8									
,, 19...	Fishguard Shed ...	0	0/5	0/5	—	0	5									First Quality Water
,, 20...	18 Kyle Street ...	0	0/5	0/5	—	0	1									
,, 21...	16 Cathedral Street ...	0	0/5	0/5	—	0	1									
,, 22...	3 Gibraltar Terrace ...	0	0/5	0/5	—	0	0									
,, 23...	280 Blarney Street ...	0	0/5	0/5	—	0	0									
,, 29...	4 Frenches Quay ...	0	0/5	0/5	—	0	0									First Quality Water
,, 30...	133 Oliver Plunkett Street ...	0	0/5	0/5	—	0	1									

Table 72—Waterworks Department—Particulars and Results of Water Treatment, 1938

DATE	Gallons Pumped (Millions)	CHEMICALS USED				ANALYTICAL DATA									REMARKS
						Raw Water			Filtered Water						
		Alumina (Grs. per Gallon)	Soda Aluminate (Grs. per Gallon)	Chlorine (Parts per Million)	Ammonium Sulphate (Parts per Million)	pH	Colour	Turbidity	pH	Colour	Turbidity	Residual Alumina	Residual Chlorine		
													Low Level Reservoir	High Level Reservoir	
1/1/38 ...	4.4	1.33	—	0.4	0.1	7.0	18	1.2	6.5	4	0.7	0.05	0.07	0.07	
2/1/38 ...	4.2	1.33	—	0.4	0.1	7.0	18	1.2	6.5	5	0.7	0.05	0.08	0.1	
3/1/38 ...	5.1	1.33	—	0.4	0.1	7.0	18	1.2	6.5	5	0.7	0.05	0.1	0.01	
4/1/38 ...	4.9	1.12	—	0.4	0.1	7.0	17	1.2	6.5	4	0.6	0.05	0.08	0.1	
5/1/38 ...	5.0	1.02	—	0.4	0.1	7.0	15	1.2	6.5	4	0.6	0.05	0.1	0.1	
6/1/38 ...	4.9	1.02	—	0.4	0.1	7.2	15	1.2	6.8	5	.7	0.05	0.08	0.15	
7/1/38 ...	5.0	1.54	—	0.4	0.1	7.2	18	1.2	7.0	5	0.7	0.05	0.1	0.1	
8/1/38 ...	4.6	1.67	—	0.4	0.1	7.2	30	2.0	7.0	5	1.2	0.05	0.08	0.08	
9/1/38 ...	4.0	2.25	—	0.4	0.1	7.0	60	18.0	6.4	4	0.6	0.05	0.07	0.08	
10/1/38 ...	4.9	2.25	—	0.4	0.1	7.0	45	2.2	6.4	4	0.7	0.05	0.08	0.08	
11/1/38 ...	4.9	2.07	—	0.4	0.1	7.0	40	2.0	6.4	5	1.0	0.05	0.07	0.08	
12/1/38 ...	4.9	1.9	—	0.4	0.1	7.0	50	6.0	6.4	4	1.0	0.05	0.08	0.08	
13/1/38 ...	4.8	1.7	—	0.4	0.1	7.0	70	11.0	6.4	4	1.0	0.05	0.06	0.07	
14/1/38 ...	4.4	1.6	—	0.4	0.1	7.0	50	6.0	6.4	4	0.8	0.05	0.07	0.08	
15/1/38 ...	4.2	1.6	—	0.4	0.1	7.0	70	15.0	6.4	4	1.2	0.05	0.07	0.08	
16/1/38 ...	4.3	1.27	—	0.4	0.1	7.0	38	4.0	6.4	4	0.8	0.05	0.08	0.08	
17/1/38 ...	4.7	1.27	—	0.4	0.1	7.0	38	5.0	6.4	4	0.8	0.05	0.08	0.1	
18/1/38 ...	4.6	1.27	—	0.4	0.1	7.0	30	1.4	6.4	4	0.8	0.05	0.07	0.07	
19/1/38 ...	5.1	1.7	—	0.4	0.1	7.2	30	1.6	6.8	5	0.8	0.05	0.08	0.08	
20/1/38 ...	5.0	1.6	—	0.4	0.1	7.2	25	1.4	6.8	5	0.8	0.05	0.08	0.1	
21/1/38 ...	4.7	1.7	—	0.4	0.1	7.2	30	2.6	6.8	5	0.8	—	0.1	0.12	
22/1/38 ...	4.5	1.61	—	0.4	0.1	7.2	30	1.6	6.8	4	0.8	—	0.07	0.08	
23/1/38 ...	4.2	1.5	—	0.4	0.1	7.2	25	1.2	6.8	5	0.7	—	0.08	0.1	
24/1/38 ...	4.8	1.5	—	0.4	0.1	7.2	30	1.4	6.8	5	0.8	—	0.08	0.08	
25/1/38 ...	4.9	1.6	—	0.4	0.1	7.2	35	2.0	6.8	4	0.8	0.05	0.08	0.1	
26/1/38 ...	4.9	1.6	—	0.4	0.1	7.2	35	1.8	6.8	4	0.8	—	0.08	0.08	
27/1/38 ...	4.8	1.45	—	0.4	0.1	7.2	33	2.0	6.8	4	0.8	—	0.07	0.07	
28/1/38 ...	4.7	1.45	—	0.4	0.1	7.2	30	1.7	6.8	4	1.0	—	0.08	0.08	
29/1/38 ...	4.6	1.7	—	0.4	0.1	7.4	37	2.0	6.8	5	1.0	—	0.06	0.07	
30/1/38 ...	4.1	1.45	—	0.4	0.1	7.4	30	1.8	6.8	4	0.7	—	0.06	0.07	
31/1/38 ...	4.6	1.45	—	0.4	0.1	7.2	25	1.4	6.8	4	0.7	—	0.07	0.08	
1/2/38 ...	4.8	1.6	—	0.4	0.1	7.2	30	1.7	6.8	4	1.0	—	0.08	0.08	
2/2/38 ...	4.9	1.45	—	0.4	0.1	7.0	25	1.7	6.8	4	0.7	—	0.08	0.08	
3/2/38 ...	4.8	1.33	—	0.4	0.1	7.0	20	1.4	6.8	4	0.5	—	0.1	0.1	
4/2/38 ...	4.7	1.33	—	0.4	0.1	7.0	20	1.4	6.6	4	0.5	—	0.1	0.1	

Table 72—Waterworks Department—Particulars and Results of Water Treatment, 1938—continued

DATE	Gallons Pumped (Millions)	CHEMICALS USED				ANALYTICAL DATA									REMARKS
						Raw Water			Filtered Water						
		Alumina (Grs. per Gallon)	Soda Aluminate (Grs. per Gallon)	Chlorine (Parts per Million)	Ammonium Sulphate (Parts per Million)	pH	Colour	Turbidity	pH	Colour	Turbidity	Residual Alumina	Residual Chlorine		
													Low Level Reservoir	High Level Reservoir	
5/2/38 ...	4.6	1.45	—	0.4	0.1	7.0	23	1.2	6.8	4	0.6	—	0.08	0.08	
6/2/38 ...	4.1	1.28	—	0.4	0.1	6.8	20	1.4	6.6	4	0.5	—	0.1	0.1	
7/2/38 ...	4.8	1.33	—	0.4	0.1	7.0	23	1.2	6.5	4	0.5	—	0.1	0.1	
8/2/38 ...	5.0	1.45	—	0.4	0.1	7.0	20	1.2	6.4	4	0.5	—	0.1	0.1	
9/2/38 ...	4.9	1.45	—	0.4	0.1	7.0	20	1.0	6.4	4	0.5	—	0.1	0.1	
10/2/38 ...	4.9	1.45	—	0.4	0.1	7.0	20	1.2	6.4	4	0.4	—	0.1	0.1	
11/2/38 ...	4.8	1.45	—	0.4	0.1	7.0	20	1.0	6.4	4	0.3	—	0.1	0.1	
12/2/38 ...	4.5	1.45	—	0.4	0.1	7.0	20	1.2	6.4	4	0.3	—	0.1	0.1	
13/2/38 ...	4.0	1.33	—	0.4	0.1	7.0	15	1.0	6.4	4	0.3	—	0.12	0.1	
14/2/38 ...	4.8	1.33	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.12	0.1	
15/2/38 ...	5.0	1.33	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.12	0.1	
16/2/38 ...	4.9	1.12	—	0.4	0.1	7.0	12	1.0	6.8	4	0.3	—	0.1	0.1	
17/2/38 ...	4.7	0.96	—	0.4	0.1	7.0	10	1.1	6.8	4	0.3	—	0.1	0.1	
18/2/38 ...	4.9	0.96	—	0.4	0.1	7.0	12	1.1	6.8	4	0.3	—	0.12	0.1	
19/2/38 ...	4.6	0.96	—	0.4	0.1	7.0	12	1.0	6.8	4	0.3	—	0.1	0.1	
20/2/38 ...	4.1	0.96	—	0.4	0.1	7.0	12	1.0	6.8	4	0.5	—	0.1	0.1	
21/2/38 ...	4.6	0.96	—	0.4	0.1	7.0	10	1.0	6.8	4	0.4	—	0.1	0.12	
22/2/38 ...	4.8	0.96	—	0.4	0.1	7.0	10	1.0	6.8	4	0.3	—	0.1	0.12	
23/2/38 ...	4.7	0.80	—	0.4	0.1	7.0	10	1.0	6.8	4	0.3	—	0.1	0.12	
24/2/38 ...	4.6	0.80	—	0.4	0.1	7.2	10	1.0	6.8	4	0.3	—	0.1	0.1	
25/2/38 ...	4.4	2.07	—	0.4	0.1	7.0	70	19.0	6.4	4	0.4	—	0.1	0.1	
26/2/38 ...	4.3	1.28	—	0.4	0.1	6.8	60	19.0	6.4	4	0.3	—	0.1	0.1	
27/2/38 ...	4.0	1.27	—	0.4	0.1	6.8	60	12.0	6.4	4	0.3	—	0.08	0.1	
28/2/38 ...	4.6	1.28	—	0.4	0.1	6.8	37	3.0	6.4	4	0.3	—	0.08	0.1	
1/3/38 ...	5.0	1.28	—	0.4	0.1	6.8	30	1.4	6.4	4	0.3	—	0.1	0.1	
2/3/38 ...	4.6	1.33	—	0.4	0.1	7.0	25	1.2	6.4	4	0.3	—	0.1	0.1	
3/3/38 ...	4.8	1.33	—	0.4	0.1	7.0	20	1.0	6.7	4	0.3	—	0.08	0.08	
4/3/38 ...	4.8	1.33	—	0.4	0.1	7.0	20	1.0	6.8	4	0.3	—	0.08	0.08	
5/3/38 ...	4.3	1.33	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.08	0.08	
6/3/38 ...	3.9	1.12	—	0.4	0.1	7.0	15	1.0	6.8	4	0.2	—	0.08	0.08	
7/3/38 ...	4.7	1.12	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.1	0.12	
8/3/38 ...	4.7	1.12	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.1	0.1	
9/3/38 ...	4.8	1.12	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.1	0.1	
10/3/38 ...	4.8	1.12	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.1	0.1	
11/3/38 ...	4.6	1.12	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.1	0.1	

Table 72—Waterworks Department—Particulars and Results of Water Treatment, 1938—continued

DATE	Gallons Pumped (Millions)	CHEMICALS USED				ANALYTICAL DATA									REMARKS
						Raw Water			Filtered Water						
													Residual Chlorine		
		Alumina (Grs. per Gallon)	Soda Aluminate (Grs. per Gallon)	Chlorine (Parts per Million)	Ammonium Sulphate (Parts per Million)	pH	Colour	Turbidity	pH	Colour	Turbidity	Residual Alumina	Low Level Reservoir	High Level Reservoir	
12/3/38 ...	4.4	1.12	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.1	0.1	
13/3/38 ...	4.0	1.12	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.1	0.12	
14/3/38 ...	4.7	1.12	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.1	0,1	
15/3/38 ...	4.6	1.12	—	0.4	0.1	7.0	15	1.0	6.8	4	0.3	—	0.1	0.1	
16/3/38 ...	5.3	1.9	—	0.4	0.1	7.0	25	2.0	6.4	4	0.3	—	0.1	0.1	
17/3/38 ...	3.9	1.7	—	0.4	0.1	6.8	40	4.0	6.4	4	0.3	—	0.08	0.1	
18/3/38 ...	4.5	1.6	—	0.4	0.1	6.8	30	1.6	6.4	4	0.3	—	0.1	0.1	
19/3/38 ...	4.4	1.7	—	0.4	0.1	6.8	30	1.4	6.4	4	0.3	—	0.06	0.07	
20/3/38 ...	4.0	1.9	0.1	0.4	0.1	6.8	60	5.0	6.2	5	1.0	0.05	0.06	0.07	
21/3/38 ...	4.8	1.7	0.1	0.4	0.1	6.8	50	2.0	6.2	4	0.3	—	0.08	0.1	
22/3/38 ...	4.8	1.6	0.1	0.4	0.1	6.8	40	1.8	6.4	4	0.3	—	0.08	0.1	
23/3/38 ...	4.8	1.7	—	0.4	0.1	7.0	30	1.2	6.4	4	0.3	—	0.07	0.08	
24/3/38 ...	4.8	1.6	—	0.4	0.1	7.0	30	1.4	6.4	4	0.3	—	0.08	0.1	
25/3/38 ...	4.7	1.45	—	0.4	0.1	7.0	25	1.2	6.6	4	0.3	—	0.08	0.08	
26/3/38 ...	4.4	1.45	—	0.4	0.1	7.0	25	1.2	6.8	4	0.3	—	0.08	0.08	
27/3/38 ...	4.0	1.45	—	0.4	0.1	7.0	25	1.2	6.8	4	0.3	—	0.08	0.08	
28/3/38 ...	4.6	1.45	—	0.4	0.1	7.0	25	1.2	6.8	5	0.4	0.05	0.08	0.08	
29/3/38 ...	4.8	1.33	—	0.4	0.1	7.0	20	1.2	6.8	4	0.3	—	0.08	0.08	
30/3/38 ...	4.8	1.45	—	0.4	0.1	7.2	20	1.2	6.8	4	0.3	—	0.08	0.08	
31/3/38 ...	4.6	1.45	—	0.4	0.1	7.2	20	1.3	6.8	4	0.3	—	0.08	0.08	
1/4/38 ...	4.7	1.45	—	0.4	0.1	7.2	20	1.2	6.8	4	0.3	—	0.08	0.08	
2/4/38 ...	4.4	1.45	—	0.4	0.1	7.2	20	1.3	6.8	4	0.3	—	0.08	0.08	
3/4/38 ...	4.1	1.33	—	0.4	0.1	7.2	17	1.2	6.8	4	0.3	—	0.08	0.08	
4/4/38 ...	4.3	1.33	—	0.4	0.1	7.2	17	1.0	6.8	4	0.2	—	0.08	0.08	
5/4/38 ...	4.3	1.45	—	0.4	0.1	7.2	17	1.2	6.8	4	0.2	—	0.08	0.08	
6/4/38 ...	4.8	1.45	—	0.4	0.1	7.2	15	1.0	7.0	4	0.2	—	0.08	0.08	
7/4/38 ...	5.6	1.33	—	0.4	0.1	7.2	15	1.0	7.0	4	0.3	—	0.1	0.12	
8/4/38 ...	4.8	1.33	—	0.4	0.1	7.2	15	1.0	7.0	4	0.3	—	0.12	0.12	
9/4/38 ...	4.4	1.33	—	0.4	0.1	7.2	12	1.0	7.0	5	0.4	—	0.1	0.1	
10/4/38 ...	3.9	1.33	—	0.4	0.1	7.2	12	1.0	7.0	4	0.3	—	0.12	0.15	
11/4/38 ...	4.7	1.28	—	0.4	0.1	7.2	12	1.0	7.0	4	0.3	—	0.15	0.2	
12/4/38 ...	5.0	1.28	—	0.4	0.1	7.2	12	1.0	7.0	4	0.3	—	0.15	0.15	
13/4/38 ...	4.6	1.28	—	0.4	0.1	7.2	12	1.0	7.0	4	0.3	—	0.12	0.2	
14/4/38 ...	4.7	1.28	—	0.4	0.1	7.2	12	1.0	7.0	4	0.3	—	0.15	0.15	
15/4/38 ...	4.5	1.28	—	0.4	0.1	7.2	12	1.0	7.0	5	0.4	0.05	0.15	0.15	

Table 72—Waterworks Department—Particulars and Results of Water Treatment, 1938—continued

DATE	Gallons Pumped (Millions)	CHEMICALS USED				ANALYTICAL DATA								REMARKS
						Raw Water			Filtered Water					
												Residual Chlorin		
		Alumina (Grs. per Gallon)	Soda Aluminate (Grs. per Gallon)	Chlorine (Parts per Million)	Ammonium Sulphate (Parts per Million)	pH	Colour	Turbidity	pH	Colour	Turbidity	Residual Alumina	Low Level Reservoir	High Level Reservoir	
16/4/38 ...	4.2	1.28	—	0.4	0.1	7.2	12	1.0	7.0	4	0.3	—	0.15	0.15	
17/4/38 ...	4.0	1.28	—	0.4	0.1	7.2	12	1.0	7.0	4	0.3	—	0.1	0.15	
18/4/38 ...	4.0	1.28	—	0.4	0.1	7.2	12	1.0	7.0	5	0.4	0.05	0.1	0.15	
19/4/38 ...	4.1	1.28	—	0.4	0.1	7.2	12	1.0	7.0	5	0.4	0.05	0.1	0.15	
20/4/38 ...	5.8	1.28	—	0.4	0.1	7.4	12	1.0	7.2	5	0.4	.05	0.1	0.15	
21/4/38 ...	4.7	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
22/4/38 ...	4.6	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
23/4/38 ...	4.4	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.1	0.15	
24/4/38 ...	4.2	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.1	0.15	
25/4/38 ...	4.2	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.1	0.12	
26/4/38 ...	5.7	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.1	0.12	
27/4/38 ...	4.7	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.1	0.12	
28/4/38 ...	4.8	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.1	0.12	
29/4/38 ...	4.7	1.28	—	0.4	0.1	7.4	10	1.0	7.2	5	0.4	0.05	0.1	0.12	
30/4/38 ...	4.5	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	.1	0.12	
1/5/38 ...	3.9	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
2/5/38 ...	4.5	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
3/5/38 ...	4.6	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
4/5/38 ...	4.7	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
5/5/28 ...	4.8	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
6/5/38 ...	4.6	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.12	
7/5/38 ...	4.4	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.1	0.12	
8/5/38 ...	3.8	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
9/5/38 ...	4.6	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
10/5/38 ...	5.0	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
11/5/38 ...	4.6	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
12/5/38 ...	4.3	1.28	—	0.4	0.1	7.4	10	1.0	7.2	4	0.3	—	0.12	0.15	
13/5/38 ...	4.5	1.5	—	0.4	0.1	7.4	15	1.4	7.2	5	1.0	0.05	0.12	0.15	
14/5/38 ...	4.5	2.34	—	0.4	0.1	7.2	40	4.0	6.8	4	0.3	—	0.1	0.12	
15/5/38 ...	4.0	2.56	0.1	0.4	0.1	6.8	70	5.0	6.2	4	0.3	—	0.1	0.1	
16/5/38 ...	4.8	2.13	0.1	0.4	0.1	6.8	40	4.0	6.2	4	0.3	—	0.1	0.1	
17/5/38 ...	4.8	2.07	0.1	0.4	0.1	6.8	37	2.0	6.2	4	0.3	—	0.1	0.1	
18/5/38 ...	4.7	2.07	0.1	0.4	0.1	7.0	35	1.2	6.4	4	0.3	—	0.1	0.1	
19/5/38 ...	4.9	1.9	—	0.4	0.1	7.0	27	1.2	6.4	5	0.4	0.05	0.1	0.1	
20/5/38 ...	4.6	1.7	—	0.4	0.1	7.0	25	1.0	6.8	5	0.4	0.05	0.08	0.1	

Table 72—Waterworks Department—Particulars and Results of Water Treatment, 1938—continued

DATE	Gallons Pumped (Millions)	CHEMICALS USED				ANALYTICAL DATA								REMARKS
						Raw Water			Filtered Water					
		Alumina (Grs. per Gallon)	Soda Aluminate (Grs. per Gallon)	Chlorine (Parts per Million)	Ammonium Sulphate (Parts per Million)	pH	Colour	Turbidity	pH	Colour	Turbidity	Residual Alumina	Residual Chlorine	
													Low Level Reservoir / High Level Reservoir	
21/5/38 ...	4.4	1.9	—	0.4	0.1	7.0	27	1.4	6.8	5	0.4	0.05	0.08 / 0.1	
22/5/38 ...	3.8	2.37	0.1	0.4	0.1	6.8	50	2.0	6.4	6	0.8	0.05	0.08 / 0.1	
23/5/38 ...	4.9	2.37	—	0.4	0.1	7.0	40	2.0	6.4	4	0.4	—	0.08 / 0.1	
24/5/38 ...	4.7	2.37	—	0.4	0.1	7.2	35	1.2	6.6	5	0.4	—	0.08 / 0.08	
25/5/38 ...	4.7	2.37	—	0.4	0.1	7.2	30	1.2	6.6	4	0.4	—	0.1 / 0.12	
26/5/38 ...	4.7	2.37	—	0.4	0.1	7.2	25	1.2	6.6	4	0.3	—	0.1 / 0.1	
27/5/38 ...	4.7	2.5	0.1	0.4	0.1	7.0	50	6.0	6.4	4	0.3	—	0.1 / 0.12	
28/5/38 ...	4.3	3.86	0.075	0.4	0.1	7.0	70	2.0	6.0	3	0.3	—	0.1 / 0.12	
29/5/38 ...	3.7	2.56	0.075	0.4	0.1	7.0	50	1.8	6.0	3	0.3	—	0.1 / 0.12	
30/5/38 ...	4.8	2.25	—	0.4	0.1	7.0	35	1.6	6.4	4	0.3	—	0.1 / 0.12	
31/5/38 ...	4.6	2.34	—	0.4	0.1	7.0	37	2.0	6.4	4	0.3	—	0.1 / 0.12	
1/6/38 ...	4.7	2.9	—	0.4	0.1	7.0	60	4.0	6.4	4	0.4	—	0.1 / 0.1	
2/6/38 ...	4.9	2.34	—	0.4	0.1	7.0	50	2.0	6.4	4	0.4	—	0.1 / 0.1	
3/6/38 ...	4.9	2.25	—	0.4	0.1	7.0	40	1.8	6.4	4	0.4	—	0.1 / 0.1	
4/6/38 ...	4.2	2.07	—	0.4	0.1	7.0	30	1.4	6.4	5	0.5	—	0.1 / 0.1	
5/6/38 ...	3.8	2.34	—	0.4	0.1	6.8	70	4.0	6.2	4	0.4	—	0.1 / 0.1	
6/6/38 ...	4.0	2.13	—	0.4	0.1	7.0	50	2.0	6.2	4	0.4	—	0.1 / 0.1	
7/6/38 ...	4.7	2.13	0.075	0.4	0.1	6.8	80	4.0	6.2	4	0.4	—	0.1 / 0.1	
8/6/38 ...	4.7	1.91	0.075	0.4	0.1	6.8	50	2.0	6.2	4	0.4	—	0.08 / 0.1	
9/6/38 ...	5.0	2.34	—	0.4	0.1	6.8	38	1.8	6.2	5	0.6	—	0.08 / 0.1	
10/6/38 ...	4.7	2.13	—	0.4	0.1	7.0	35	1.4	6.4	4	0.4	—	0.1 / 0.1	
11/6/38 ...	4.2	2.13	—	0.4	0.1	7.0	30	1.2	6.4	4	0.4	—	0.1 / 0.1	
12/6/38 ...	3.9	1.91	—	0.4	0.1	7.0	30	1.2	6.4	5	0.5	0.05	0.1 / 0.12	
13/6/38 ...	4.8	1.91	—	0.4	0.1	7.0	30	1.0	6.5	5	0.4	0.05	0.1 / 0.12	
14/6/38 ...	4.8	2.1	—	0.4	0.1	7.1	30	1.0	6.7	5	0.4	0.05	0.1 / 0.1	
15/6/38 ...	4.8	2.1	—	0.4	0.1	7.3	25	1.0	6.8	7	0.6	0.05	0.1 / 0.1	
16/6/38 ...	4.9	2.1	—	0.4	0.1	7.2	25	1.0	6.8	7	0.6	0.05	0.1 / 0.1	
17/6/38 ...	4.6	2.1	—	0.4	0.1	7.2	25	1.0	6.8	5	0.5	—	0.1 / 0.1	
18/6/38 ...	4.9	2.1	—	0.4	0.1	7.1	25	1.4	6.8	4	0.4	—	0.1 / 0.1	
19/6/38 ...	3.9	1.91	—	0.4	0.1	7.2	25	1.4	6.8	4	0.4	—	0.1 / 0.12	
20/6/38 ...	4.9	1.7	—	0.4	0.1	7.2	20	1.4	6.8	4	0.4	—	0.12 / 0.12	
21/6/38 ...	4.8	1.91	—	0.4	0.1	7.0	20	1.4	6.8	5	0.6	—	0.12 / 0.12	
22/6/38 ...	4.7	1.91	—	0.4	0.1	7.2	20	1.4	6.8	4	0.4	—	0.1 / 0.12	
23/6/38 ...	4.8	1.91	—	0.4	0.1	7.2	20	1.6	6.8	4	0.4	—	0.1 / 0.12	
24/6/38 ...	4.6	2.13	—	0.4	0.1	7.0	22	1.4	6.8	5	0.5	0.05	0.12 / 0.12	

Table 72—Waterworks Department—Particulars and Results of Water Treatment, 1938—continued

DATE	Gallons Pumped (Millions)	CHEMICALS USED				ANALYTICAL DATA									REMARKS
						Raw Water			Filtered Water						
													Residual Chlorine		
		Alumina (Grs. per Gallon)	Soda Aluminate (Grs. per Gallon)	Chlorine (Parts per Million)	Ammonium Sulphate (Parts per Million)	pH	Colour	Turbidity	pH	Colour	Turbidity	Residual Alumina	Low Level Reservoir	High Level Reservoir	
25/6/38 ...	4.3	2.13	—	0.4	0.1	7.2	20	1.4	6.8	6	1.0	0.05	0.12	0.12	
26/6/38 ...	3.7	2.13	—	0.4	0.1	7.2	20	1.4	6.8	4	0.4	—	0.12	0.12	
27/6/38 ...	4.9	1.91	—	0.4	0.1	7.4	23	2.0	6.8	4	0.4	—	0.1	0.12	
28/6/38 ...	4.5	1.91	—	0.4	0.1	7.2	20	1.2	6.8	4	0.4	—	0.1	0.12	
29/6/38 ...	4.7	2.06	—	0.4	0.1	7.2	30	2.6	6.8	4	0.4	—	0.1	0.12	
30/6/38 ...	4.9	2.37	—	0.4	0.1	6.8	40	3.0	6.0	4	0.4	—	0.1	0.12	
1/7/38 ...	4.6	2.19	—	0.4	0.1	7.0	37	2.0	6.2	4	0.5	—	0.1	0.12	
2/7/38 ...	4.3	2.19	—	0.4	0.1	7.0	35	2.0	6.4	4	0.4	—	0.1	0.12	
3/7/38 ...	3.8	2.07	—	0.4	0.1	7.0	30	1.4	6.4	4	0.4	—	0.1	0.12	
4/7/38 ...	4.5	1.9	—	0.4	0.1	7.2	20	1.4	6.6	4	0.4	—	0.1	0.12	
5/7/38 ...	4.6	1.67	—	0.4	0.1	7.2	18	1.2	6.8	4	0.4	—	0.1	0.12	
6/7/38 ...	4.8	1.54	—	0.4	0.1	7.2	18	1.4	6.8	4	0.4	—	0.1	0.12	
7/7/38 ...	4.5	2.32	—	0.4	0.1	7.0	38	2.0	6.4	4	0.4	—	0.1	0.12	
8/7/38 ...	4.4	2.25	0.075	0.4	0.1	6.8	40	4.0	6.4	4	0.4	—	0.1	0.12	
9/7/38 ...	4.4	2.37	0.1	0.4	0.1	6.7	75	5.0	6.0	4	0.4	—	0.1	0.12	
10/7/38 ...	3.9	2.37	0.1	0.4	0.1	6.8	70	3.0	6.2	4	0.4	—	0.1	0.12	
11/7/38 ...	4.5	2.25	—	0.4	0.1	7.0	40	2.2	6.2	4	0.4	—	0.1	0.12	
12/7/38 ...	4.7	1.93	—	0.4	0.1	7.0	35	1.4	6.4	4	0.4	—	0.1	0.12	
13/7/38 ...	4.3	1.93	—	0.4	0.1	7.0	30	1.4	6.4	4	0.4	—	0.1	0.12	
14/7/38 ...	4.9	1.93	—	0.4	0.1	7.0	27	1.2	6.4	4	0.4	—	0.1	0.12	
15/7/38 ...	4.7	1.8	—	0.4	0.1	7.2	25	1.4	6.8	4	0.5	—	0.1	0.12	
16/7/38 ...	4.2	1.8	—	0.4	0.1	7.0	25	1.4	6.8	4	0.5	—	0.1	0.12	
17/7/38 ...	3.4	2.07	—	0.4	0.1	7.0	23	1.4	6.7	4	0.4	—	0.1	0.12	
18/7/38 ...	4.8	2.07	—	0.4	0.1	7.1	20	1.4	6.8	4	0.4	—	0.1	0.12	
19/7/38 ...	4.7	1.93	—	0.4	0.1	7.0	20	1.2	6.8	4	0.5	—	0.1	0.12	
20/7/38 ...	4.6	1.93	—	0.4	0.1	7.2	20	1.4	6.8	5	0.5	0.05	0.1	0.12	
21/7/38 ...	4.7	2.06	—	0.4	0.1	7.0	20	1.4	6.8	4	0.5	—	0.1	0.12	
22/7/38 ...	4.4	2.06	—	0.4	0.1	7.0	20	1.2	6.8	5	0.6	0.05	0.1	0.12	
23/7/38 ...	4.4	2.06	—	0.4	0.1	7.2	20	1.2	6.8	4	0.4	—	0.1	0.12	
24/7/38 ...	3.5	1.9	—	0.4	0.1	7.3	18	1.4	6.8	4	0.4	—	0.1	0.12	
25/7/38 ...	4.7	1.8	—	0.4	0.1	7.2	18	1.2	6.8	5	0.6	0.05	0.1	0.12	
26/7/38 ...	4.8	1.8	—	0.4	0.1	7.6	17	1.2	6.8	4	0.4	—	0.1	0.12	
27/7/38 ...	4.0	1.8	—	0.4	0.1	7.3	17	1.2	6.8	4	0.4	—	0.1	0.12	
28/7/38 ...	4.5	2.56	0.1	0.4	0.1	6.8	80	48.0	6.8	4	0.4	—	0.1	0.12	
29/7/38 ...	4.8	2.49	0.1	0.4	0.1	6.8	75	10.0	6.8	5	0.8	0.5	0.1	0.12	

Table 72—Waterworks Department—Particulars and Results of Water Treatment, 1938—continued

DATE	Gallons Pumped (Millions)	CHEMICALS USED				ANALYTICAL DATA									REMARKS
						Raw Water			Filtered Water						
													Residual Chlorine		
		Alumina (Grs. per Gallon)	Soda Aluminate (Grs. per Gallon)	Chlorine (Parts per Million)	Ammonium Sulphate (Parts per Million)	pH	Colour	Turbidity	pH	Colour	Turbidity	Residual Alumina	Low Level Reservoir	High Level Reservoir	
30/7/38 ...	4.2	2.56	0.1	0.4	0.1	6.4	90	25.0	6.0	5	1.0	0.05	0.08	0.1	
31/7/38 ...	4.1	2.55	0.1	0.4	0.1	6.4	80	5.0	6.0	4	0.4	—	0.1	0.1	
1/8/38 ...	4.1	2.24	0.1	0.4	0.1	6.4	50	2.2	6.0	5	0.8	0.05	0.1	0.1	
2/8/38 ...	4.7	2.25	0.1	0.4	0.1	6.8	50	1.8	6.0	4	0.6	—	0.1	0.1	
3/8/38 ...	4.4	1.9	0.075	0.4	0.1	6.8	35	1.8	6.2	4	0.6	—	0.1	0.1	
4/8/38 ...	4.8	2.07	0.075	0.4	0.1	6.8	40	1.8	6.2	4	0.6	—	0.1	0.1	
5/8/38 ...	4.7	2.25	0.075	0.4	0.1	6.7	50	2.2	6.2	4	0.6	—	0.1	0.1	
6/8/38 ...	4.5	2.25	0.075	0.4	0.1	6.7	50	1.8	6.2	5	0.7	0.5	0.1	0.1	
7/8/38 ...	4.1	2.07	0.1	0.4	0.1	6.7	40	1.8	6.2	4	0.5	—	0.1	0.1	
8/8/38 ...	4.6	2.07	0.1	0.4	0.1	6.8	37	1.4	6.2	4	0.4	—	0.1	0.1	
9/8/38 ...	5.2	2.25	0.1	0.4	0.1	6.8	40	1.6	6.2	4	0.5	—	0.08	0.1	
10/8/38 ...	5.1	2.32	0.1	0.4	0.1	6.8	45	2.2	6.2	4	0.5	—	0.1	0.1	
11/8/38 ...	5.0	2.32	0.1	0.4	0.1	6.8	40	2.0	6.2	4	0.4	—	0.08	0.1	
12/8/38 ...	4.9	2.19	0.1	0.4	0.1	7.0	38	2.0	6.4	4	0.5	—	0.08	0.1	
13/8/38 ...	4.4	2.19	0.1	0.4	0.1	6.9	37	2.0	6.4	4	0.5	—	0.08	0.1	
14/8/38 ...	3.8	2.07	0.1	0.4	0.1	7.0	30	1.6	6.4	4	0.4	—	0.1	0.12	
15/8/38 ...	4.5	1.9	0.1	0.4	0.1	6.9	28	1.4	6.4	4	0.4	—	0.12	0.12	
16/8/38 ...	4.7	1.9	0.1	0.4	0.1	7.0	25	1.4	6.8	4	0.4	—	0.1	0.12	
17/8/38 ...	4.9	1.9	—	0.4	0.1	7.0	23	1.4	6.8	4	0.4	—	0.12	0.12	
18/8/38 ...	4.7	1.8	—	0.4	0.1	7.0	23	1.2	6.8	4	0.5	—	0.1	0.12	
19/8/38 ...	5.0	1.8	—	0.4	0.1	7.0	23	1.4	6.8	4	0.5	—	0.12	0.2	
20/8/38 ...	4.2	1.8	—	0.4	0.1	7.0	20	1.2	6.8	4	0.4	—	0.12	0.12	
21/8/38 ...	3.9	1.9	—	0.4	0.1	7.0	22	1.4	6.8	4	0.4	—	0.12	0.15	
22/8/38 ...	4.8	1.9	—	0.4	0.1	7.0	22	1.4	6.8	4	0.5	—	0.12	0.12	
23/8/38 ...	5.0	2.7	0.1	0.4	0.1	6.8	90	10.0	6.0	5	0.7	—	0.1	0.12	
24/8/38 ...	5.0	2.5	0.1	0.4	0.1	6.8	70	5.0	6.0	4	0.5	—	0.1	0.1	
25/8/38 ...	4.8	2.9	0.1	0.4	0.1	6.7	90	11.0	5.8	4	0.5	—	0.08	0.1	
26/8/38 ...	4.5	2.7	0.1	0.4	0.1	6.8	60	2.0	6.0	4	0.4	—	0.1	0.1	
27/8/38 ...	4.2	2.37	0.1	0.4	0.1	6.8	40	2.0	6.2	4	0.5	—	0.1	0.1	
28/8/38 ...	4.1	2.37	0.1	0.4	0.1	6.8	40	2.0	6.4	4	0.5	—	0.1	0.1	
29/8/38 ...	4.6	2.19	—	0.4	0.1	7.0	35	1.6	6.4	4	0.4	—	0.1	0.1	
30/8/38 ...	5.0	2.06	—	0.4	0.1	7.0	27	1.6	6.5	4	0.5	—	0.12	0.12	
31/8/38 ...	4.6	1.9	—	0.4	0.1	7.0	24	1.4	6.8	4	0.5	—	0.1	0.12	
1/9/38 ...	4.8	1.8	—	0.4	0.1	7.0	20	1.4	6.8	4	0.5	—	0.12	0.12	
2/9/38 ...	4.3	1.7	—	0.4	0.1	7.0	18	1.4	6.8	4	0.4	—	0.12	0.12	

Table 72—Waterworks Department—Particulars and Results of Water Treatment, 1938—continued

DATE	Gallons Pumped (Millions)	CHEMICALS USED				ANALYTICAL DATA									REMARKS
						Raw Water			Filtered Water						
													Residual Chlorine		
		Alumina (Grs. per Gallon)	Soda Aluminate (Grs. per Gallon)	Chlorine (Parts per Million)	Ammonium Sulphate (Parts per Million)	pH	Colour	Turbidity	pH	Colour	Turbidity	Residual Alumina	Low Level Reservoir	High Level Reservoir	
3/9/38 ...	4.3	1.7	—	0.4	0.1	7.0	18	1.2	6.8	4	0.4	—	0.12	0.12	
4/9/38 ...	3.5	1.6	—	0.4	0.1	7.2	18	1.2	6.8	4	0.4	—	0.12	0.12	
5/9/38 ...	4.6	1.6	—	0.4	0.1	7.2	18	1.2	6.8	4	0.4	—	0.12	0.12	
6/9/38 ...	4.8	1.6	—	0.4	0.1	7.2	18	1.2	6.8	4	0.4	—	0.12	0.12	
7/9/38 ...	4.4	1.6	—	0.4	0.1	7.2	18	1.2	6.8	4	0.4	—	0.12	0.12	
8/9/38 ...	4.8	1.6	—	0.4	0.1	7.2	18	1.2	6.8	4	0.4	—	0.12	0.12	
9/9/38 ...	4.7	1.6	—	0.4	0.1	7.2	18	1.2	6.8	4	0.4	—	0.12	0.12	
10/9/38 ...	4.2	1.6	—	0.4	0.1	7.1	18	1.2	6.8	4	0.4	—	0.12	0.12	
11/9/38 ...	3.6	1.6	—	0.4	0.1	7.2	18	1.2	7.0	4	0.4	—	0.12	0.12	
12/9/38 ...	4.8	1.6	—	0.4	0.1	7.2	17	1.2	7.0	4	0.4	—	0.12	0.12	
13/9/38 ...	4.7	1.6	—	0.4	0.1	7.2	18	1.2	7.0	4	0.4	0.05	0.12	0.12	
14/9/38 ...	4.4	1.7	—	0.4	0.1	7.2	20	1.2	7.0	4	0.4	0.05	0.12	0.12	
15/9/38 ...	4.6	1.7	—	0.4	0.1	7.2	18	1.2	7.0	4	0.4	0.05	0.1	0.1	
16/9/38 ...	4.6	1.6	—	0.4	0.1	7.2	18	1.2	7.0	4	0.5	0.05	0.12	0.12	
17/9/38 ...	4.4	2.25	—	0.4	0.1	7.6	25	1.4	6.8	4	0.4	0.05	0.12	0.12	
18/9/38 ...	3.7	2.16	—	0.4	0.1	7.2	37	2.0	6.8	5	0.5	0.05	0.1	0.1	
19/9/38 ...	4.7	2.13	—	0.4	0.1	7.0	35	1.2	6.8	4	0.4	—	0.1	0.1	
20/9/38 ...	4.8	2.66	—	0.4	0.1	7.0	38	1.6	6.4	5	0.5	0.05	0.1	0.12	
21/9/38 ...	4.7	2.7	—	0.4	0.1	7.0	40	2.0	6.4	4	0.4	—	0.08	0.08	
22/9/38 ...	4.7	2.7	—	0.4	0.1	6.8	50	2.2	6.4	4	0.4	—	0.08	0.1	
23/9/38 ...	4.7	2.7	0.1	0.4	0.1	6.8	75	4.0	6.2	4	0.4	—	0.08	0.1	
24/9/38 ...	4.5	2.5	0.1	0.4	0.1	6.8	70	4.0	6.2	4	0.4	—	0.1	0.1	
25/9/38 ...	3.8	2.37	0.1	0.4	0.1	6.8	50	1.8	6.2	4	0.4	—	0.08	0.1	
26/9/38 ...	5.0	2.07	0.1	0.4	0.1	7.0	38	1.7	6.4	4	0.4	—	0.08	0.1	
27/9/38 ...	5.4	2.5	0.1	0.4	0.1	6.8	60	3.0	6.2	4	0.4	—	0.08	0.08	
28/9/38 ...	5.0	2.7	0.1	0.4	0.1	6.8	75	2.2	6.2	4	0.4	—	0.08	0.1	
22/9/38 ...	4.9	2.5	0.1	0.4	0.1	6.8	40	1.6	6.2	4	0.4	—	0.08	0.08	
30/9/38 ...	4.8	2.7	0.1	0.4	0.1	6.8	60	2.0	6.2	5	0.6	0.05	0.08	0.08	
1/10/38 ...	4.6	2.5	0.1	0.4	0.1	6.9	50	1.8	6.2	4	0.5	—	0.08	0.08	
2/10/38 ...	3.9	2.56	0.75	0.4	0.1	6.9	40	1.4	6.2	4	0.4	—	0.08	0.01	
3/10/38 ...	4.7	2.7	0.75	0.4	0.1	6.8	80	5.0	6.0	4	0.4	—	0.1	0.12	
4/10/38 ...	3.4	2.7	0.75	0.4	0.1	6.8	80	5.0	6.0	4	0.4	—	0.08	0.1	
5/10/38 ...	4.3	1.91	0.75	0.4	0.1	6.8	40	2.0	6.0	4	0.4	—	0.1	0.15	
6/10/38 ...	4.6	1.91	0.75	0.4	0.1	6.8	38	1.2	6.0	4	0.4	—	0.1	0.1	
7/10/38 ...	4.8	1.91	0.75	0.4	0.1	6.8	38	2.2	6.0	4	0.4	—	0.1	0.1	

Table 72—Waterworks Department—Particulars and Results of Water Treatment, 1938—continued

DATE	Gallons Pumped (Millions)	CHEMICALS USED				ANALYTICAL DATA									REMARKS
						Raw Water			Filtered Water						
		Alumina (Grs. per Gallon)	Soda Aluminate (Grs. per Gallon)	Chlorine (Parts per Million)	Ammonium Sulphate (Parts per Million)	pH	Colour	Turbidity	pH	Colour	Turbidity	Residual Alumina	Residual Chlorine		
													Low Level Reservoir	High Level Reservoir	
8/10/38 ...	4.3	1.91	0.75	0.4	0.1	6.8	38	2.0	6.0	4	0.4	—	0.08	0.1	
9/10/38 ...	3.8	1.91	0.75	0.4	0.1	6.8	50	4.0	6.0	4	0.4	—	0.1	0.1	
10/10/39 ...	4.9	1.91	0.75	0.4	0.1	6.8	38	1.6	6.0	4	0.4	—	0.1	0.12	
11/10/38 ...	5.0	1.91	—	0.4	0.1	6.9	35	1.4	6.2	4	0.4	—	0.1	0.1	
12/10/38 ...	4.7	1.9	—	0.4	0.1	6.9	28	1.4	6.4	4	0.4	—	0.08	0.08	
13/10/38 ...	4.7	1.9	0.75	0.4	0.1	6.8	38	2.2	6.2	4	0.5	—	0.1	0.1	
14/10/38 ...	4.7	1.9	0.75	0.4	0.1	6.8	45	4.0	6.2	4	0.6	—	0.12	0.12	
15/10/38 ...	4.4	1.9	0.75	0.4	0.1	6.8	37	1.4	6.2	4	0.5	—	0.1	0.1	
16/10/38 ...	3.9	1.9	—	0.4	0.1	6.8	30	1.2	6.2	4	0.4	—	0.1	0.1	
17/10/38 ...	4.8	2.13	—	0.4	0.1	6.9	30	1.4	6.4	4	0.4	—	0.12	0.12	
18/10/38 ...	5.0	2.34	—	0.4	0.1	6.8	40	2.6	6.4	5	0.6	.05	0.1	0.1	
19/10/38 ...	5.2	2.37	—	0.4	0.1	6.8	38	1.6	6.2	4	0.4	—	0.1	0.07	
20/10/38 ...	4.7	2.25	—	0.4	0.1	6.8	35	1.6	6.2	4	0.4	—	0.12	0.12	
21/10/38 ...	4.4	2.25	—	0.4	0.1	7.0	30	1.4	6.4	4	0.4	—	0.12	0.12	
22/10/38 ...	4.9	2.56	—	0.4	0.1	6.5	90	14.0	6.0	4	0.4	—	0.12	0.12	
23/10/38 ...	4.3	2.34	—	0.4	0.1	6.8	40	2.0	6.2	4	0.4	—	0.1	0.1	
24/10/38 ...	4.5	2.13	—	0.4	0.1	6.8	35	1.6	6.2	4	0.5	—	0.12	0.12	
25/10/38 ...	4.7	2.13	—	0.4	0.1	7.0	30	1.4	6.4	4	0.4	—	0.12	0.12	
26/10/38 ...	4.6	2.13	—	0.4	0.1	6.8	37	2.0	6.4	4	0.4	—	0.12	0.12	
27/10/38 ...	5.0	2.07	—	0.4	0.1	6.9	37	1.4	6.4	4	0.4	—	0.12	0.12	
28/10/38 ...	4.6	2.07	—	0.4	0.1	6.9	30	1.4	6.4	4	0.4	—	0.12	0.12	
29/10/38 ...	4.3	1.9	—	0.4	0.1	6.9	25	1.2	6.4	4	0.4	—	0.12	0.12	
30/10/38 ...	3.8	2.13	—	0.4	0.1	7.0	35	2.0	6.4	5	0.5	—	0.12	0.12	
31/10/38 ...	4.7	2.13	—	0.4	0.1	6.8	38	1.8	6.4	5	0.5	—	0.12	0.12	
1/11/38 ...	4.6	2.07	—	0.4	0.1	7.0	38	2.0	6.4	4	0.4	—	0.12	0.12	
2/11/38 ...	4.4	2.5	—	0.4	0.1	6.8	45	2.6	6.2	4	0.4	—	0.12	0.12	
3/11/38 ...	4.5	2.37	—	0.4	0.1	6.9	38	1.6	6.2	4	0.4	—	0.12	0.12	
4/11/38 ...	4.9	2.35	—	0.4	0.1	6.9	30	1.4	6.4	4	0.4	—	0.12	0.12	
5/11/38 ...	4.4	2.07	—	0.4	0.1	7.0	28	1.4	6.4	4	0.4	—	0.12	0.12	
6/11/38 ...	3.7	2.13	—	0.4	0.1	7.0	27	1.4	6.4	4	0.4	—	0.12	0.12	
7/11/38 ...	4.6	1.91	—	0.4	0.1	6.9	27	1.4	6.4	4	0.4	—	0.12	0.12	
8/11/38 ...	4.6	1.91	—	0.4	0.1	7.0	28	1.4	6.5	4	0.4	—	0.12	0.12	
9/11/38 ...	4.5	1.9	—	0.4	0.1	7.0	28	1.4	6.5	4	0.5	—	0.12	0.12	
10/11/38 ...	4.6	2.46	—	0.4	0.1	6.9	70	5.0	6.2	4	0.4	—	0.12	0.12	
11/11/38 ...	4.7	2.97	—	0.4	0.1	6.8	100	11.0	5.8	4	0.4	—	0.12	0.12	

Table 72—Waterworks Department—Particulars and Results of Water Treatment, 1938—continued

DATE	Gallons Pumped (Millions)	CHEMICALS USED				ANALYTICAL DATA									REMARKS
						Raw Water			Filtered Water						
													Residual Chlorine		
		Alumina (Grs. per Gallon)	Soda Aluminate (Grs. per Gallon)	Chlorine (Parts per Million)	Ammonium Sulphate (Parts per Million)	pH	Colour	Turbidity	pH	Colour	Turbidity	Residual Alumina	Low Level Reservoir	High Level Reservoir	
12/11/38 ...	4.4	2.97	—	0.4	0.1	6.8	80	5.0	5.8	4	0.4	—	0.12	0.12	
13/11/38 ...	3.7	1.9	0.75	0.4	0.1	6.7	75	7.0	5.8	4	0.4	0.5	0.1	0.1	
14/11/38 ...	4.6	1.9	0.75	0.4	0.1	6.7	70	4.0	5.8	5	0.5	0.1	0.12	0.12	
15/11/38 ...	4.7	2.37	—	0.4	0.1	6.9	38	2.6	6.4	4	0.4	—	0.12	0.12	
16/11/38 ...	4.6	2.7	—	0.4	0.1	6.8	100	18.0	6.0	4	0.5	—	0.12	0.12	
17/11/38 ...	4.6	2.5	—	0.4	0.1	6.8	40	2.4	6.0	4	0.4	—	0.12	0.12	
18/11/38 ...	4.6	2.37	—	0.4	0.1	6.9	38	2.2	6.2	4	0.4	—	0.12	0.12	
19/11/38 ...	4.3	2.7	—	0.4	0.1	6.8	80	10.0	6.0	4	0.4	—	0.12	0.12	
20/11/38 ...	3.6	2.34	—	0.4	0.1	6.8	40	2.6	6.2	4	0.4	—	0.12	0.12	
21/11/38 ...	4.8	2.25	—	0.4	0.1	6.8	37	1.4	6.2	4	0.4	—	0.12	0.12	
22/11/38 ...	4.6	2.25	—	0.4	0.1	6.8	36	1.4	6.2	4	0.4	—	0.12	0.12	
23/11/38 ...	4.6	2.37	—	0.4	0.1	6.8	70	17.0	6.0	4	0.4	—	0.12	0.12	
24/11/38 ...	4.8	2.25	—	0.4	0.1	6.8	38	2.6	6.0	4	0.4	—	0.12	0.12	
25/11/38 ...	4.7	1.9	—	0.4	0.1	6.8	28	2.0	6.2	4	0.4	—	0.12	0.12	
26/11/38 ...	4.5	1.9	—	0.4	0.1	6.8	37	2.6	6.2	4	0.4	—	0.12	0.12	
27/11/38 ...	3.8	1.9	—	0.4	0.1	6.8	30	2.2	6.2	4	0.4	—	0.12	0.12	
28/11/38 ...	4.7	1.9	—	0.4	0.1	6.8	30	2.0	6.2	4	0.4	—	0.12	0.12	
29/11/38 ...	4.7	1.9	—	0.4	0.1	6.8	27	1.4	6.4	4	0.4	—	0.12	0.12	
30/11/38 ...	4.7	1.9	—	0.4	0.1	6.8	27	1.4	6.4	4	0.4	—	0.12	0.12	
1/12/38 ...	4.7	1.9	—	0.4	0.1	6.8	37	2.6	6.2	4	0.4	—	0.12	0.12	
2/12/38 ...	4.8	1.9	—	0.4	0.1	6.8	30	2.0	6.2	4	0.4	—	0.12	0.12	
3/12/38 ...	4.3	1.9	—	0.4	0.1	6.8	20	2.0	6.4	4	0.4	—	0.12	0.12	
4/12/38 ...	3.8	1.9	—	0.4	0.1	6.8	20	1.2	6.4	4	0.4	—	0.12	0.12	
5/12/38 ...	5.0	1.9	—	0.4	0.1	6.8	25	1.6	6.4	4	0.4	—	0.12	0.12	
6/12/38 ...	4.9	1.9	—	0.4	0.1	7.0	25	1.4	6.4	4	0.4	—	0.12	0.12	
7/12/38 ...	4.7	1.9	—	0.4	0.1	7.0	25	1.4	6.4	4	0.4	—	0.12	0.12	
8/12/38 ...	5.0	1.9	—	0.4	0.1	6.8	45	5.0	6.4	4	0.4	—	0.12	0.12	
9/12/38 ...	4.8	1.9	—	0.4	0.1	6.8	25	1.4	6.4	4	0.4	—	0.12	0.12	
10/12/38 ...	4.4	1.9	—	0.4	0.1	6.8	30	2.0	6.4	4	0.4	—	0.12	0.12	
11/12/38 ...	3.7	1.9	—	0.4	0.1	6.8	27	1.6	6.4	4	0.4	—	0.12	0.12	
12/11/38 ...	4.9	1.9	—	0.4	0.1	6.8	40	6.0	6.4	4	0.4	—	0.12	0.12	
13/12/38 ...	4.8	1.9	—	0.4	0.1	7.0	37	3.0	6.4	4	0.4	—	0.12	0.12	
14/12/38 ...	4.7	1.9	—	0.4	0.1	7.0	37	5.0	6.4	4	0.4	—	0.12	0.12	
15/12/38 ...	4.3	1.9	—	0.4	0.1	7.0	37	5.0	6.4	4	0.4	—	0.12	0.12	
16/12/38 ...	4.9	1.9	—	0.4	0.1	6.7	40	7.0	6.2	4	0.4	—	0.12	0.12	

Table 72—Waterworks Department—Particulars and Results of Water Treatment, 1938—continued

DATE	Gallons Pumped (Millions)	CHEMICALS USED				ANALYTICAL DATA									REMARKS
						Raw Water			Filtered Water						
		Alumina (Grs. per Gallon)	Soda Aluminate (Grs. per Gallon)	Chlorine (Parts per Million)	Ammonium Sulphate (Parts per Million)	pH	Colour	Turbidity	pH	Colour	Turbidity	Residual Alumina	Residual Chlorine		
													Low Level Reservoir	High Level Reservoir	
17/12/38 ...	4.6	1.9	—	0.4	0.1	6.8	25	2.4	6.2	4	0.4	—	0.12	0.12	
18/12/38 ...	3.7	1.9	—	0.4	0.1	7.0	20	2.0	6.4	4	0.5	—	0.12	0.12	
19/12/38 ...	4.9	1.9	—	0.4	0.1	6.9	20	2.0	6.4	4	0.4	—	0.12	0.12	
20/12/38 ...	4.9	1.9	—	0.4	0.1	6.9	20	2.0	6.4	4	0.4	—	0.12	0.12	
21/12/38 ...	4.9	1.6	—	0.4	0.1	7.0	15	1.4	6.4	4	0.5	—	0.12	0.12	
22/12/38 ...	6.8	1.6	—	0.4	0.1	7.0	12	1.4	6.4	4	0.5	—	0.12	0.12	
23/12/38 ...	6.2	1.6	—	0.4	0.1	7.0	10	1.4	6.4	4	0.4	—	0.08	0.08	
24/12/38 ...	5.8	1.6	—	0.4	0.1	7.0	10	1.4	6.4	4	0.4	—	0.12	0.12	
25/12/38 ...	5.5	1.6	—	0.4	0.1	7.0	10	1.4	6.4	4	0.4	—	0.12	0.12	
26/12/38 ...	6.4	1.6	—	0.4	0.1	7.0	10	1.4	6.4	4	0.4	—	0.12	0.12	
27/12/38 ...	6.1	1.6	—	0.4	0.1	7.1	10	1.4	6.6	4	0.5	—	0.12	0.12	
28/12/38 ...	6.0	1.6	—	0.4	0.1	7.0	10	1.6	6.6	4	0.5	—	0.12	0.12	
29/12/38 ...	5.8	1.6	—	0.4	0.1	7.0	10	1.6	6.4	4	0.4	—	0.12	0.12	
30/12/38 ...	5.8	1.6	—	0.4	0.1	7.0	12	2.0	6.6	4	0.4	—	0.12	0.12	
31/12/38 ...	4.9	1.6	—	0.4	0.1	7.0	15	2.0	6.6	4	0.4	—	0.12	0.12	

Table 72—Showing average consumption of Water per Head, per Day.

Month	1934	1935	1936	1937	1938
January	39.6	38.5	47.6	42.7	41.5
February	40.0	40.2	44.1	43.1	40.3
March	39.1	40.1	44.0	41.8	39.5
April	39.9	41.2	44.4	41.6	41.4
May	39.2	41.2	46.5	45.1	40.5
June	42.1	43.6	47.1	45.9	40.5
July	42.8	46.8	47.1	45.9	40.9
August	40.6	48.1	46.4	46.3	39.8
September	41.4	46.5	44.5	45.7	41.3
October	38.6	43.5	44.8	45.0	40.6
November	39.0	43.4	44.1	43.1	39.7
December	40.2	35.2	43.8	42.7	41.8

Section VIII.—Sanitary Department

Table 72a.—Return of Work performed by Sanitary Inspectors during 1938 :—

District	INSPECTION OF											SERVED	
	Houses and Yards	Tenement Houses	Tenement Rooms	Infected Dwellings	Common Lodging Houses	Milk Shops	Bakeries	Work Shops	Slaughter Houses	Factories	Out-workers	Justices Orders	Notices to abate nuisance
No .1	2779	92	242	23	—	5	—	23	—	—	—	1	149
No. 2	5536	2588	—	93	21	3	2	118	4	—	—	8	440
No. 3	10706	2988	12079	216	130	826	115	687	183	—	—	6	433
No. 5	2836	1918	1602	73	60	10	93	74	—	—	—	6	180
No. 6	8158	30	73	18	2	1	—	1	—	—	—	11	529
No. 7	11639	1173	3356	62	72	188	5	370	22	—	—	16	563
Female Inspector	—	—	—	—	—	—	206	3678	—	784	320	—	41
Totals	41654	8789	17352	485	285	1033	421	4951	209	784	320	48	2335

District No. 4 is divided for purposes of supervision between Districts No. 2 and 5
No separate records have been kept hitherto.
The number of inspections carried out by the Corporation Drain Tester was 3,503

Table 72 b—Summary of Inspections, etc.

	No. of Inspections
Houses, yards, etc.	41,654
Tenement Houses	8,789
Tenement Rooms	17,352
Infected Dwellings	485
Common Lodging Houses	285
Bakeries	421
Workshops	4,951
Outworkers	320
Factories	784
Milk Shops	1,033
Slaughter Houses	209
Drains and W.C.'s Tested	3,680
Number of Notices to abate nuisances	2,335
Number of Justices' Orders	48
Number of prosecutions for Sanitary Offences	59
Amount of fines imposed in respect of same	£6 14 0

Table 73—Return of Work carried out by **Veterinary Staff** during the year :—

Slaughter Houses	5,091
Butcher Shops	3,926
Tripe Houses	1,898
Meat Markets	794
Milk Shops	2,827
Milk Vans	598
Cowsheds	125
Sausage Factories	1,857
Hawker's Stands	1,044
Provision Shops	5,547
Pork Shops	592
Fish Shops	541
Fruit Shops	3,897
Cold Stores	—
No. of Prosecutions Amount of Fines imposed	See Section VI., Prosecutions

Section IX.—Port Sanitary Administration

Constitution of the Port Sanitary Authority.

The port was constituted a port sanitary district by the Local Government Board (Ireland) on 27th April, 1903. The Authority consists of twenty members chosen by the respective riparian authorities who elect representatives to the joint board as follows :—

By the Lord Mayor, Aldermen and Councillors of the County Borough of Cork	12
By the South Cork Board of Public Health	5
By the Urban District of Cobh	2
By the Urban District of Passage West	1

The South Cork Board of Public Health was substituted for the Cork County Board of Public Health as a constituent Authority by the Local Government and Public Health Provisional Order Confirmation Act, 1937, as from 1st April, 1937, on which date the provisions contained in the Order came into operation.

Apportionment of Expenses.

Cork County Borough contributes	62½ per cent. of the total
South Cork Board of Public Health	25 ,,
Cobh Urban District Council	10 ,,
Passage West Urban District Council	2½ ,,

Limits of Jurisdiction.

These are defined in Act 18 of the Cork Port Sanitary Order No. 3 as follows :—"The jurisdiction of the said Port Sanitary Authority shall extend to the whole of that part of the customs port of Cork that lies between Power Head and Cork Head in the County of Cork, together with the makers of the said port of Cork within such limits and all docks, basins, harbours, creeks, rivers, channels, bays and streams within the aforesaid limits and the places for the time being appointed as the customs boarding station or stations for such part of the said port and the places for the time being appointed for the mooring or anchoring of ships for such part of the said port under any regulations for the prevention of the spread of diseases issued under the authority of the statutes in that behalf."

Quarantine Anchorage.

Anchorage for vessels with cases of infectious disease on board is between the town of Cobh and the Spit buoy.

Cuskinny Intercepting Hospital.

The intercepting hospital is situated about two miles east of the town of Cobh and about half-a-mile from Cuskinny Strand on the northern shore of the harbour. The hospital was built in the year 1880 by the old Cork Board of Guardians and was acquired by the Port Sanitary

Authority in the year 1902 from the Commissioners of Public Works (Ireland) and since has been kept in good repair and condition. During the past year minor structural work was carried out in connection with the water supply tanks which ensures adequate supplies of water throughout the year. The function of the hospital is to deal with the more serious types of infectious disease (e.g. small pox, plague, cholera, typhus, etc) should any such cases arrive in the port necessitating hospital treatment or isolation. Infected vessels would moor at the quarantine anchorage, the patient being removed by motor launch and landed at Cuskinny Strand or some suitable slipway and transferred to the Authorities' ambulance for transport to the hospital. In point of fact it is many years since the hospital was called upon to deal with any cases and the likelihood of such cases arising in the future is not very great. The greatly increased speed of modern sea transport, together with the precautions taken at all sea ports throughout the world in regard to the prevention of infectious disease has greatly reduced the risk of such diseases being introduced to this port. While, however, any such risk exists, the hospital will have to be maintained unless adequate alternative measures are adopted for dealing with cases. Although no case has been admitted since 1918, arrangements can be put on foot for dealing with possible admissions at a moments notice as it has been the policy to maintain the hospital on this basis. The caretaker has fulfilled her duties in this respect in a praiseworthy manner.

Procedure for granting Pratique.

Deepladen vessels arriving in the lower harbour and bound for Cork may be detained there for tide. Such vessels are boarded by an officer of the Customs and Excise, who puts the usual questions to the master in regard to the prevalence of illness on board and especially in relation to cholera, plague and yellow fever or as to the prevalence of same at any ports of call en route. If the answers are in the *negative*, free pratique is granted and the vessels allowed to proceed to her moorings. If any answers are in the affirmative, pratique is not granted until the vessel has been visited by the Port Medical Officer. Vessels of light draught able to proceed to the City at any state of the tide are hailed while passing Cobh and if the answers are satisfactory are allowed to proceed to Cork where they are boarded by the Customs Officer and the usual questions are put. In addition, instructions have been sent to all shipping agents for companies using the port of Cork that masters of vessels approaching the port with cases of infectious disease on board are to notify the Authority by wireless. Three such messages were received during the year, but each of them related only to cases of minor infectious disease.

Measures against Rodents.

All vessels from foreign ports are boarded immediately on arrival by the Port Sanitary Officer who, after satisfying himself as the documents relative to health and deratisation certificates proceeds to the examination of the vessel in regard to rat infestation, particular attention being paid to cargo surfaces as soon as the holds have been opened up. The various cargo compartments are searched for sick or

dead rats, which, if found, are submitted at once for bacteriological examination. So far a positive result has not been obtained, but such a result would necessitate suspension of discharge of cargo. In addition, traps are laid in various parts of the ship and rats caught are submitted to examination. Precautions adopted to prevent migration of rodents ashore comprise the placing of rat guards on all mooring ropes and wires of all except cross-channel vessels. In addition, grain boats from the Argentine have to keep their gangways lime-washed daily and well lighted at night whilst alongside the quays.

The following measures would be adopted in this port in the event of a vessel being found effected with human or rodent plague to prevent egress from ship to shore :—

(1) Vessel would be breasted off at least six feet from the quayside by placing wood floats between it and the quay wall.
(2) Besides the adjusting of rat guards, moorings would be parcelled with old canvas on shore side of rat guards and same smeared with Stockholm tar.
(3) Gangway would be required to be lifted from sunset to sunrise.
(4) Intensive trapping and examination of rodents caught in the immediate neighbourhood of the ship's berth.

Of all diseases liable to be introduced by shipping, *plague* is without doubt the most to be feared, hence the necessity for the stringent precautions in regard to its prevention. Several of the ports from which shipping arrives in Cork are situated in countries in which plague is endemic, even though the ports themselves may not actually be infected at the time of departure. There is, however, the ever present danger of the importation of *plague infected rats* from such ports and it is in consequence of this danger that so much importance is attached to the systematic trapping and examination of rats taken on vessels coming into this port. As there is always a certain amount of migration of rats from ships to the shore while vessels are tied up at their moorings it is also necessary to maintain a constant sampling and examination of the shore rats taken in warehouses adjacent to the quays. It will be noted from the appropriate tables that of 199 rats taken during the past year, 137 were submitted to post-mortem examination and that all gave negative results. In the previous year 205 were trapped, of which 123 were examined, also with negative results. The rats are examined in the first instance by the Inspector, under the supervision of the Chief Veterinary Officer. In the event of a suspicious finding, the carcase would be referred to the Bacteriological Department of University College for a further examination.

The fact that so many rats have been examined and found negative is not by any means an indication for relaxation in the measures which have been adopted in connection with their reduction and the prevention of plague. One infected rat coming ashore might be the cause of an outbreak among the shore population and from time to time we are reminded of this ever present danger by the discovery of plague infected rats in other ports. Plague is rarely transferred from one human being to the other, such transfer requires an intermediary and the agent is almost always the rat flea. It is only when an epizootic breaks out among the rats and large numbers die that the infecting flea seeks a new

host and may transfer his attention to human beings. In countries where the disease is endemic, outbreaks among human beings are always heralded by excessive mortality among rats. Excessive rat mortality on board ship is a very suspicious sign of plague infection and masters are bound to notify any such happening at the port of arrival. Plague is such a deadly disease that no relaxation in preventive measures can be tolerated and for this reason it is necessary to keep up a constant watch over vessels arriving from foreign parts and for systematic examination and extermination of rats.

Of recent years it has been noticed that there has been a very marked reduction in the number of rats infesting ships. This is undoubtedly due to the implementation of the recommendations of the International Sanitary Convention of 1926 by the signatory countries. One of the clauses of this agreement requires the fumigation or exemption from fumigation of all foreign going vessels every six months and has been adopted by practically every country in the world. In the event of a vessel arriving at an approved port with a certificate which is no longer valid, it is examined by the Port Health Authority and if it is found to harbour an excessive number of rats it must undergo fumigation or, alternatively, an exemption certificate is issued if there are no rats or only a very small number. The general adoption of such measures by all countries has undoubtedly had a most beneficial effect in reducing the number of rats found on board ship and it is now quite common to find vessels arriving without any rat indications whatever.

This port has not, so far, been approved for the issue of certificates. When Mr. Kerin took up his appointment I suggested that he should keep records of his findings in such a way that the information so obtained could be correlated with the findings in other ports, with a view to making application for approval when sufficient material had been collected to justify it. It was decided that when fifty cases had been collected, application should be made to the appropriate quarter for recognition. We are now closely approaching that number and there has been a very marked correspondence between Mr. Kieran's estimations and those of rat inspectors in the ports to which the vessels proceeded on departure from Cork. Such ports included Cardiff, Swansea, Newport, Barry Docks, Belfast, Glasgow, Hull and Goole, Liverpool and Falmouth, and I am indebted to the Port Medical Officer's concerned for their kind co-operation in the matter. Briefly, the procedure is that Mr. Kieran examines each vessel just before its departure and submits his estimation of the rat population to me. I then send the information to the Medical Officer of the port of destination with an explanatory note and in due course have received the findings of his inspector. This has been a matter of no little interest and I have noted, as remarked above, that there has been a very close correspondence indeed between the findings here and in the other ports. This has been especially pronounced since the first few exchanges, so that it is now justifiable to assume that our inspector has acquired a high degree of skill in estimating the rat population of vessels arriving here. It may, perhaps, be helpful to mention that there estimates are based on such evidence as droppings (their age and nature being taken into consideration), feet marks, runs, harbourage and so on. In this (and other matters) I have been especially indebted to

Dr. Greenwood Wilson, not only in his capacity as Medical Officer of Health of the Port of Cardiff, but also as Honorary Secretary of the Association of Port Health Authorities of the British Isles. The great majority of grain boats discharging here leave for Cardiff and consequently most of our enquiries have been directed to that port.

Infectious Diseases.

Five cases of infectious disease were dealt with during the year. Three of these were measles and do not call for further comment. The other two were typhoid fever and meningococcal meningitis respectively. The former case occurred on board a merchant vessel which arrived in Cork on August the 3rd from the Mediterranean. On arrival, the master reported a case of illness (which was not then suspected to be infectious) and the patient was seen by a doctor and removed to a local hospital for observation and it transpired that the case was one of typhoid fever (confirmed by a strongly positive Widal reaction). Investigation revealed that the patient had been definitely ill for three weeks before the vessel's arrival in Cork and that he had been examined twice at Mediterranean ports during this time without the nature of his illness being suspected. In view of the long period of exposure to infection, the vessel was kept under daily observation here after the diagnosis had become known, but none of the contacts showed any evidence of disease. As an additional precaution, the crew were mustered and examined individually on 9th August, the day before the vessel's departure. In addition to other measures usual to such cases, were adopted. These included steam disinfection of the bedding used by the patient and his personal belongings. The cabin occupied by him was sealed and disinfected with formaldehyde and as an additional precaution, the water tanks were chlorinated and emptied, being re-filled from the quay hydrant. The Medical Officer of the port of destination was advised as well as the Medical Officer of another port to which one of the crew had departed before the true nature of the case had become known. In view of the period (over three weeks) to which the crew had been exposed, it was fortunate that no further cases occurred. This was probably, in large measure, due to the fact that the patient had been isolated from the beginning in a separate cabin.

The case of meningococcal meningitis occurred on board a trans-atlantic liner en route from England to the United States. The patient, a child aged six years, was taken ashore at Cobh and transferred by ambulance to the North Fever Hospital. The diagnosis in this case was established by bacteriological examination of the cerebro-spinal fluid. He made a complete recovery and was afterwards able to proceed with his family to the United States.

Sanitation of Coasting Vessels.

This matter has been a cause of much concern during the year and the Sanitary Inspector reports that the arrangements on board at least half of the boats using this port are primitive in the extreme and are prejudicial to the health of those using them. In many cases, eating and sleeping quarters are within a few feet of the closets in which the pedestal is of the old-fashioned dry cone type with a hardwood rim seat. The

bowls seldom receive a thorough scouring and are consequently almost always found to be fouled with a solid layer of slime and filth, giving rise to offensive odours. The soil pipes are similarly fouled and the smells are blown upwards into the closet and surrounding accommodation by the draught which finds its way through the movable flaps fitted to the mouth of the soil pipe. The remedy for this state of affairs would appear to be the provision of the modern trapped porcelain pan with spring flushing valves and a sanitary tank holding at least 75 gallons of water, built in the forecastle head.

In one foreign vessel which arrived here during the year it was found that the sanitary tank supplying flushing water to all privies had been converted into an oil settling tank. The Master was unable to produce the ship's plans on request. These were necessary in order to obtain proof that the tank in question had been originally built for sanitary purposes and not for oil fuel, but this was not denied. Needless to say, the various privies were in a very foul condition. Apart from maintaining a strict watch over the latter while in port, nothing could be done to remedy the cause of the defect, owing to the nationality of the vessel. An agreement has been entered into between different countries to the effect that apart from correcting minor nuisances and faults, none of the countries involved in the agreement would call upon the owners of ships belonging to foreign conntries to make structural alterations in their ships while in ports other than those of their own country.

Water Supply.

Drinking and boiler water is obtained directly from the public supply. There are upwards of 80 such hydrants available in this port. As mentioned in the section dealing specifically with the supply to the City, the water is subjected to systematic sampling and bacteriological examination throughout the year. 253 samples were examined during the year and the results indicated that the water was of first-class quality. Of this number, 21 were taken direct from hydrants at the quayside.

In connection with the supply of water to ships, a surprising fact came to our notice during the year. This related to a vessel of foreign nationality which arrived here last October from the Plate. It was reported to our inspector by the Master that the tank water had been pumped direct from the river before sailing from his last port. There was no filtration of any description and the only attempt at purification consisted of the addition of a dose of permanganate of potash to each tank as it was filled. This appears to have been the regular practice on this vessel, incredible though it may seem and, unfortunately we have no legislative machinery empowering us to deal with a case of this sort calling as it does for immediate emptying of all tanks and re-filling with potable water. Incidentally, it may be mentioned that in the case of the vessel referred to in a preceding paragraph in connection with the occurrence of typhoid fever, a sample of water was submitted for bacteriological examination and the result was returned as "uncountable." One is left to wonder what the result would have been in this particular case notwithstanding the alleged

dose of permanganate. It is an interesting sidelight on the methods of economy practised by some shipping companies, and the kind of competition that has to be met by countries which insist on some sort of protection for their merchant seamen.

Cargo Traffic.

The principal imports are coal, maize, wheat, timber, machinery, steel, phosphate, car parts, cement. The principal exports, cattle. pigs, sheep, bacon, butter and other dairy and agricultural products,

Table 73.—Return of Shipping entering the Port since 1928.

Year	Number of Arrivals			Tonnage		
	Foreign	Coastwise	Totals	Foreign	Coastwise	Totals
1928	442	1,492	1,934	261,612	488,158	749,770
1929	260	1,567	1,827	283,759	525,231	808,990
1930	297	1,636	1,933	364,650	617,783	982,433
1931	272	1,566	1,838	345,430	647,327	992,757
1932	315	1,375	1,690	352,459	602,509	954,968
1933	399	893	1,292	371,757	462,047	833,804
1934	404	817	1,221	407,188	463,169	870,357
1935	285	1,015	1,300	323,631	525,062	848,693
1936	249	1,053	1,302	277,779	583,922	861,701
1937	250	1,098	1,348	300,730	594,396	895,126
1938	239	1,084	1,323	280,403	598,114	878,517

Vessels not shipping or transhipping cargo :—

Transatlantic Liners	215	Tons	2,837,511
Other Vessels	86	Tons	103,166

Table 74.—Summary of Inspections and Defects.

	Number	Tonnage	Number Inspected	Number Reported Defective	No. of Vessels on which Defects Remedied	Number of Vessels reported as having or having had during voyage Infectious Diseases on Board
Foreign Steamers Motor Sailing Fishing	239	280,403	217	25	11	5
Total Foreign	239	280,403	217	25	11	5
Coastwise Steamers Motor Sailing Fishing	1,084	598,114	809	221	49	2
Tot. Coastwise	1,084	598,114	809	321	49	2
Total Foreign and Coastwise	1,323	878,517	1,026	246	60	7

Table 75.—Return of Vessels entering the Port which were dealt with by the Department each month during 1938.

Month	Foreign	Coastwise	Total
January	18	75	93
February	17	67	84
March	18	51	69
April	18	61	79
May	20	70	90
June	17	68	85
July	20	69	89
August	21	62	83
September	15	83	98
October	18	75	93
November	18	68	86
December	17	60	77
Totals	217	809	1026

Table 76.—Return of Imports and Exports, 1929-38.

Year	Imports (tons)	Exports (tons)
1929	815,347	86,246
1930	906,340	120,610
1931	861,782	85,704
1932	890,377	104,884
1933	710,149	89,319
1934	784,174	66,606
1935	743,939	63,219
1936	788,545	73,673
1937	829,704	78,530
1938	802,238	65,147

The particulars contained in the above tables were kindly supplied by the Manager of the Cork Harbour Board.

Passenger Traffic.

Particulars have been compiled from figures supplied by the Shipping Companies.

(A) Cobh :—

Outward to Boston and New York	....	5,680
Inward from Boston and New York	....	6,778
Outward to Germany, France and England	....	1,236
Inward from Germany, France and England	....	1,145
Total	....	14,745

(B) Cork.

Outward to England and Scotland	....	32,430
Inward from England and Scotland	....	28,328
Total	....	60,758

Total number of passengers landed and embarked at Cobh and Cork 75,503

Table 77.—The nationalities of the several types of vessels entering the port which were dealt with by the Department during 1938.

Nationality	Steam	Motor	Sailing	Total
United States ...	8	....	....	8
British and Irish	890	20	....	....
Danish	16	....	....	16
Dutch	2	11	....	13
Estonian	3	....	....	3
Finnish	3	....	1	4
German	26	....	....	26
Greek	9	....	....	9
Italian	1	....	....	1
Latvian	....	....	....	....
Norwegian	19	....	....	19
Russian	....	....	....	....
Swedish	16	....	....	16
Yugo Slav	1	....	....	1
Total ...	994	31	1	1026

Table 78.—Cases of Infectious Disease notified by Vessels.

Disease	No. of Cases during 1938 Passengers	Crew	Number of Vessels Concerned
Measles	2	1	1
Typhoid	–	1	1
Meningococcol Meningitis	1	–	1
Total	3	2	3

Table 79.—Showing how the cases referred to in the above table were dealt with.

Disease	Admitted to North Fever Hospital	Treated on Board Ship	Total
Measles	1	2	3
Typhoid	1	–	1
Meningococcol Meningitis....	1	–	1
Total	3	2	5

Venereal Desease notified on board vessels entering the Port since 1937.

Year	Gonorrhoea	Soft Chancre	Conditions other than Venereal	Total
1937	3	1	1	5
1938	1	1	3	5

In addition to the above total several merchant seamen visited the clinic voluntary.

Importation of Parrots (Temporary) Regulations, 1930.

Four parakeets were destroyed under the provisions of the above Regulations.

Small Pox (Importation of Clothing, etc.) Temporary Regulations, 1927.

These Regulations still remain in force. 4 tons 10 cwts. of second-hand clothing and cleaning rags (mainly imported from Great Britain) were disinfected in the Corporation plant by high steam pressure. Certificates were issued in connection with same.

Public Health (Foreign Meat) (Ireland) Regulations, 1908.

There has been no importation of foreign meat of either Class I. or Class II. and no reports have been transmitted by the Customs Officer to the Medical Officer of Health in regard to meat unclassed.

Countries and Ports of Origin of Vessels arriving in this Port during 1938.

Algeria	....	Bona, Sfax.
Argentine	....	Buenos Aires, San Lorenzo, San Nicolas, San Pedro, La Rosario, Villa Constitution.
Australia	....	Freemantle, Port Pirie, Port Germein, Wallarroo, Geelong.
Canada	....	Montreal, Halifax, Three Rivers, St. John's.
Nova Scotia	....	Pugwash.
Spain	....	Huelva.
U.S.A.	....	New York, Boston, Vancouver, Portland. *Panama Canal Zone*—Colon, Cristobal.
West Africa	....	Dakar.
South Africa	....	Capetown, Table Bay, Durban.
Brazil	....	Bahia.
Uruguaya	....	Montevideo.
European Ports	....	Aalborg, Antwerp, Bergen, Bremen, Copenhagen, Danzig, Gotenborg, Hamburg, Helsingfors, Kemi, Leningrad, Memel, Riga, Rafsu, Rotterdam.

Sanitary Defects and Nuisances dealt with during 1938.

Dirty Focsles	93
Dirty Store Rooms	36
Foul Water Tanks	5
Accumulation of Offensive Rubbish	4
Damp Quarters	27
Leaky Deckheads	25
Defective Bulkheads	2
Defective Port Frames and Glass Discs	28
Defective Ventilators	8
Defective Flooring Boards in Focsles	4
Defective Lockers	12
Defective Hawse Pipes	2
Defective Spurling Pipes	1
Defective W.C. Fittings	21
Inadequate Lighting	2
Verminous Quarters	32
Total	355
Verbal Notices Given	283
Memos Left on Board	32
Letters to Owners	11
Statutory Notices Served	5
Total	331

RATS TRAPPED ASHORE

Month	No.	Mus Decumans	Mus Alexandrinus	Mus Rattus	Species Unknown	No. of P.M. Exam.*
Jan.	4	3	1	—	—	—
Feb.	4	4	—	—	—	2
March	10	8	1	1	—	4
April	17	16	1	—	—	4
May	4	3	1	—	—	4
June	17	7	9	1	—	13
July	28	8	16	2	2	22
August	22	4	14	4	—	19
Sept	21	3	12	6	—	12
Oct.	14	7	5	2	—	12
Nov.	11	8	2	1	—	10
Dec.	13	9	2	2	—	13
Total	165	80	64	19	2	115

*All P.M. Examinations proved Negative.

RATS TRAPPED ON VESSELS.

Month	No.	Mus Decumans	Mus Alexandrinus	Mus Rattus	Species Unknown	No. of P.M. Exam.*
January	—	—	—	—	—	—
Feb.	—	—	—	—	—	—
March	—	—	—	—	—	—
April	3	—	—	2	1	2
May	7	—	4	3	—	6
June	—	—	—	—	—	—
July	—	—	—	—	—	—
August	—	—	—	—	—	—
Sept.	—	—	—	—	—	—
October	22	1	5	8	8	11
Nov.	2	1	1	—	—	2
Dec.	—	—	—	—	—	—
Totals	34	2	10	13	9	21

*All P.M. Examinations proved Negative.

Section X.—Meteorology

I am indebted to Prof. H. N. Walsh, University College, for the following particulars concerning the weather conditions during the year, and more especially for the trouble which he has gone to to bring up to date the Tables which follow.

Table 80.

Rainfall in inches for each quarter and for each year, 1901–1938.

Year	I.	II.	III.	IV.	Total
1901	10.07	7.62	10.75	10.12	38.56
1902	9.29	7.80	7.31	12.88	37.28
1903	16.89	8.80	14.95	12.13	52.77
1904	13.63	5.71	10.41	7.47	37.22
1905	11.70	6.59	9.82	9.14	37.25
1906	9.46	5.76	5.58	9.03	29.83
1907	4.06	10.10	7.40	16.02	37.58
1908	7.67	5.28	10.16	9.53	32.64
1909	7.61	9.94	2.62	9.74	29.91
1910	10.70	7.24	8.64	11.98	38.56
1911	5.94	6.89	7.87	18.47	39.17
1912	13.46	7.07	9.30	7.05	36.88
1913	13.92	10.32	7.73	12.49	44.46
•1914	13.72	3.60	9.85	15.20	42.42
1915	11.62	6.27	9.26	15.68	42.83
1916	8.68	9.19	7.37	21.11	46.35
1917	8.75	6.93	9.40	7.25	32.33
1918	14.75	5.59	13.37	13.73	47.44
1919	10.78	7.11	6.77	6.97	31.63
1920	11.75	14.12	8.90	13.24	48.01
1921	8.04	2.22	8.71	9.90	28.87
1922	13.08	5.45	10.57	8.15	37.25
1923	14.41	5.38	10.71	10.54	41.04
1924	12.32	9.76	11.82	17.66	51.56
1925	10.31	10.49	8.43	11.92	41.15
1926	15.42	8.19	4.68	9.55	37.84
1927	12.20	6.16	11.45	16.06	45.87
1928	1.14	13.86	8.31	17.35	55.66
1929	11.28	6.72	7.27	20.91	46.18
1930	14.98	5.91	12.67	14.35	47.91
1931	12.30	10.35	8.34	13.27	44.26
1932	8.54	8.11	7.31	13.62	37.58
1933	8.61	8.74	5.22	6.47	29.04
1934	9.66	7.13	11.49	13.75	42.03
1935	5.33	9.33	9.98	10.97	35.61
1936	16.77	4.51	9.13	9.88	40.29
1937	19.67	6.12	7.90	8.52	42.21
1938	9.22	7.38	7.99	15.14	39.73

•Since 1914 the returns in Tables 80, 81, 82 and 83 are taken from observations made at University College, Cork.

The mean temperature for 1938 was 50.6° F. The warmest days were July 18th and 19th, and the 3rd of August, with a maximum shade temperature of 75° F. The warmest night was July 6th, with a minimum shade of 43° F. The coldest days were January 23rd and 27th, and February 3rd, with a maximum shade temperature of 56° F. The coldest nights were December 21st, 22nd and 24th with a minimum shade temperature of 23° F.

TABLE 82.—Temperature at Cork (in the Shade) for 56 years ending 1938.

YEAR	January	February	March	April	May	June	July	August	September	October	November	December	Mean Temperature of Year
	Max. Min. Mean Degrees	Max. Min. Mean Degrees	Max. Min. Mean Degrees	Max. Min. Mean Degrees	Max. Min. Mean Degrees	Max. Min. Mean Degrees	Max. Min. Mean Degrees	Max. Min. Mean Degrees	Max. Min. Mean Degrees	Max. Min. Mean Degrees	Max. Min. Mean Degrees	Max. Min. Mean Degrees	
1883	54-32-41.7	54-28-42.0	55-25-41.0	66-32-48.0	69-35-50.7	69-44-57.7	70-47-58.5	71-47-60.0	65-41-56.5	61-35-52.0	57-33-44.8	55-27-42.0	49.6
1884	55-31-45.5	54-31-46.5	54-30-45.5	57-34-48.5	68-37-55.5	73-40-59.0	72-45-61.5	74-44-62.2	71-45-58.5	60-34-52.2	60-28-45.2	55-28-41.3	51.8
1885	54-27-41.7	50-27-43.5	54-30-43.5	62-30-48.2	61-34-52.0	72-42-59.2	80-43-62.0	74-46-60.5	65-36-55-2	57-35-46.7	58-31-46.7	54-25-39.5	49.9
1886	52-23-38.0	52-28-41.5	57-25-41.5	65-32-46.7	65-33-50.5	76-45-57.7	79-44-59.5	76-45-60.5	65-39-56.5	64-37-51.5	58-29-45.0	50-22-39.0	49.0
1887	54-30-43.0	54-27-43.5	58-25-42.0	62-26-44.5	70-35-52.5	81-47-62.5	80-47-64.2	76-42-60.7	69-39-55.0	61-28-48.2	54-24-42.0	55-25-39.7	50.0
1888	54-26-43.0	52-26-38.2	56-26-40.7	59-28-46.5	68-39-53.2	73-39-57.0	70-40-57.5	74-42-60.0	66-37-55.5	63-31-50.5	58-27-48.0	56-28-44.7	49.6
1889	58-26-43.0	57-27-42.2	59-29-44.7	58-32-46.7	68-40-48.0	77-46-58.0	77-45-60.0	72-43-58.7	70-38-57.2	59-32-48.2	60-29-48.2	56-29-44.2	49.9
1890	55-29-44.0	54-29-42.5	58-28-45.2	61-29-48.0	70-39-53.0	73-45-58.0	72-43-58.4	72-40-58 0	75-42-50.2	66-34-53.0	60-24-44.6	52-25-39.0	50.3
1891	53-23-40.3	56-31-45.7	61-22-42.1	60-31-46.9	73-34-50.0	78-40-58.6	75-44-59.0	73-40-58.0	71-39-56.5	61-29-48.5	53-28-42.6	55-26-44.0	49.4
1892	55-20-39.2	55-25-42.3	57-24-40.0	62-27-47.2	66-37-53.1	73-39-56.2	73-44-59.0	70-44-60.0	68-37-55.0	56-28-45.0	56-31-47.2	53-27-42.7	49.7
1893	53-21-40.5	53-24-42.5	60-34-47.5	67-31-51.5	69-43-56.5	80-46-59.8	74-46-61.2	77-45-61.7	71-33-55.2	63-31-49.0	59-30-43.0	53-26-42.5	50.9
1894	53-11-39.5	56-28-44.6	57-33-44.8	62-37-49.0	67-34-50.0	71-38-57.0	72-45-69.0	71-44-57.5	66-36-53.5	66-33-49.5	59-28-46.0	54-29-44.5	49.6
1895	47-23-36.5	48-22-34.5	63-27-44.0	61-31-48.2	70-33-53.0	74-40-58.7	70-44-58.7	70-43-59.0	71-46-58.9	62-28-46.0	56-30-45.0	54-26-42.5	48.7
1896	53-26-43.0	55-32-45.2	56-31-46.5	65-34-50.0	74-33-56.2	82-47-60.5	75-42-60.0	73-41-57.5	68-41-55.0	65-30-43.2	53-29-42.0	53-23-40.0	49.9
1897	50-22-37.5	56-32-46.0	55-31-44,0	58-29-46.0	70-35-51.0	75-41-59.0	77-43-61.0	80-45-59.5	67-38-53.2	61-37-52,2	58-32-47.2	53-29-44.0	50.1
1898	55-32-45.8	54-26-41,5	58-28-41.0	60 31-47.7	67-34-51.0	74-39-56.8	78-44-59.5	73-46-69.5	72-40-58.7	64-34-51.3	59-30-44.0	55-27-45.4	50.3
1899	53-26-40.1	52-29-43.0	64-22-43.0	63-29-46.6	65-34-50.6	78-41-59.5	76-45-60.0	76-46-62.3	71-31-54.1	60-29-47.9	55-39-47.2	51-24-40.0	49.5
1900	54-27-39.5	52-14-35.4	51-25-38.6	65-33-47.8	68-36-50.7	75-42-56.8	75-45-60.1	71-42-57.0	67-38-55.1	63-32-48.1	57-29-41.7	52-26-42.3	47.9
1901	49-24-37.8	49-22-35.8	51-34-38.9	59-39-45.0	68-34-51.9	72-37-54.2	76-46-60.2	75-41-57.5	67-39-54.0	61-31-47.0	54-19-41.2	51-26-37.5	46.8
1902	50-25-40,6	52-19-36.6	57-30-44.0	57-29-44.0	67-31-47.3	74-38-53.1	74-40-56.0	68-40-56.2	68 36-53,6	62-34-57.4	55-30-43.5	52-25-39.0	46.8
1903	50-22-39.5	52-29-42,7	52-29-41.1	57-27-43.7	69-36-50.4	70-35-54.0	74-43-56.6	68-40-54.3	64-36-52.4	60-28-46.2	55-24-41.0	48-22-37.0	46.4
1904	49-27-38.5	49-24-37.2	52-25-39.1	60-32-44.4	65-32-48.6	69-49-54,2	73-40-57.3	69-41-56.4	63-38-52.5	63-35-50.2	57-25-43.5	52-28-43.0	47.4
1905	51-29-42.0	55-23-41.6	53-30-42.6	58-33-46.4	68-36-52.6	75-42-58.0	76-45-60.0	70-42-55.5	68-39-53.6	62-26-45.0	52-23-39.0	50-30-43.3	48.3
1906	50-28-41.1	47-25-38.0	58-30-42.6	59-29-44.3	64-33-49.7	75-42-57.8	74-44-59.0	73-44-59.8	71-40-55.0	63-29-49.0	55-29-44.0	53-20-39.0	48-4
1907	49-18-39.6	52-25-38-4	57-32-45.8	64-30-45.4	65-35-48.7	68-49-53.5	78-41-58.6	68-43-57.0	68-38-57.0	60-28-45.9	52-28-49.8	49-27-39.5	47.5
1908	52-23-38.5	53-31-43.0	52-29-40.4	56-26-43.4	68-37-52.0	71-40-55.7	80-46-59.5	74-44-58.2	67-38-53.5	64-33-53.0	56-29-45.7	51-30-41.1	49.0
1909	51-28-40.3	52-22-39.6	56-23-40.6	61-31-46.8	66-33-51.0	69-41-54.0	71-45-58.6	79-43-59.7	65-37-52.3	64-26-49.0	55-20-38.2	50-24-38.3	47.4
1910	50-25-38.5	53-27-39.0	55-30-41.0	60.29-43.9	68-34-51.4	66-44-55.5	70-45-57.5	69-46-57.0	68-37-54.5	62-34-49.0	53-24-39.0	50-28-41.5	47.3
1911	50-27-39.2	53-22-39.7	56-29-40.3	59-27-40.9	70-37-52.2	72-45-56.7	79-44-61.0	73-45-60.2	73-39-54.3	57-31-48.0	53-26-39.9	49-27-39.3	48.0
1912	50-27-40.8	50-32-40.0	57-32-41.8	61-32-47.0	64-36-51.2	66-32-52.9	74-44-55.7	61-36-51.3	68-36-53.5	61-31-50.1	59-33-49.2	54-30-44.3	48.1
1913	52-27-40.6	54-32-43.6	55-34-45.0	59-29-44.7	64-36-49.5	75-38-54.0	74-47-55.9	74-40-58.8	72-44-57.6	61-32-51.5	60-34-48.9	56-33-45.6	49.6
1914	54-43-48.5	55-50-53.0	55-50-52.4	60-53-56.9	62-55-58.2	70-59-64.4	69-53-64.8	67-63-64.6	66-60-62.6	62-55-58.4	58-50-53.4	53-46-50.0	47.2
1915	50-37-43.5	45-25-35.0	58-35-46.5	50-35-42.5	62-40-51.0	64.40-52.0	62-42-52.0	65-43-54.0	62-40-51.0	55-37-46.0	48-28-38.0	40-28-34.0	44.9
1916	50-36-43.3	47-30-39.1	45-30-37.8	49-36-42.6	60-34-47.4	55-40-47.8	66-40-53.4	65-49-57.7	60-40-50.0	56-36-46.4	47-32-40.4	40-24-32.5	44.8
1917	52-22-36.0	50-24-35.0	52-28-39.25	59.30-41.5	70-32-50.25	66-40-52.25	68-40-55.4	70-46-56.12	66-26-51.25	56-36-40.8	58-30-44.5	56-26-38.4	45.7
1918	50-22-36.0	54-32-43.0	56-26-41.0	64-32-48.0	67-33-50.0	76-36-56.0	76-40-58.0	74-40-57.0	64-36-50.0	62-30-46.0	54-26-40.0	54-26-40.0	47.0
1919	54-24-36.0	50-26-39.0	50-24-37.8	56-30-43.2	72-34-51.2	68-36-51-0	74-40-56.0	80-40-57.5	64-34-49.7	62-36-44.6	56-14-34.5	54-28-41.0	46.0
1920	52-30-40.0	50-30-39.8	50-30-41.3	56-36-46.3	66-28-46.3	68-34-53.7	66-42-53.5	66-40-53.2	68-32-51.2	60-36-48.5	56-24-41.6	50-20-36.0	45.9
1921	60-25-44.7	50-24-36.2	50-24-37.5	58-26-41.5	70-34-48.4	76-32-55.0	80-40-60.0	74-38-54.2	64-32-48.2	62-28-47.4	46-20-39.7	50-28-41.2	46.2
1922	56-20-49.1	48-24-37.2	46-24-34.5	48-22-34.8	80-30-61.0	74-40.54.0	72-38-67.2	72-36-54.0	66-36-52.3	60-20-56.0	66-30-44.0	54-26-39.2	48.6
1923	54-27-43.4	55-29-43.6	56-30-45.1	58-31-46.2	65 33-49.3	65-33-49.3	79-48-62.2	78-42-59.6	69-37-53.4	61-30-49.5	58-20-38.8	53-25-43.0	49.2
1924	53-29-43.8	51-26-41.4	56-25-42.5	62-27-46.0	65-35-51.5	70-41-56.7	68-42-57.9	70-40-57.8	71-40-54.4	64-57-50.8	59-29-46.0	56-33-46.0	49.6
1925	55-31-44.4	55-28-41.8	60-29-43.8	57-30-45.6	62-34-50.3	81-44-59.5	75-45-60.2	74-43-60.2	68-35-53.3	69-32-52.5	59-24-41.2	56-21-39.8	49.4
1926	53-28-43.1	57-32-46.5	61-31-45.7	63-31-49.8	64-33-51.1	72-39-55.5	83-45-63.3	75-46-61.8	72-37-58.2	74-25-48.3	57-27-42.3	55-21-41.5	50.6
1927	60-28-42.3	57-26-44.1	57-27-45.9	65-29-48.4	72-36-53.5	70-38-54.5	74-50-61.1	76-46-59.9	70-36-54.5	65-35-52.2	61-23-43.5	52-26-40.8	50.1
1928	55-30-44.1	57-33-45.6	57-27-44.4	64-30-46.2	75-37-54.0	69-40-55.8	78-43-60.6	72-41-58.8	70-34-54.7	65-32-50.8	58-27-46.5	55-28-41.9	50.3
1929	54-23-39.8	56-28 43.5	69-26-46.3	65-33-47.9	75-31-52.4	71-41-56.7	75-42-59.8	72-44-59.6	74-59-58.9	63-31-49.5	59-24-44.8	56-27-42.7	50.2
1930	53-26-41.3	52-24-37.7	57-26-43.2	66-30-47.4	68-36-53.0	76-40-58.3	78-45-59.3	69-42-57.5	70-40-56.5	61-35-51.6	60-27-44.6	54-29-43.3	49.5
1931	53-27-41.2	55-30-42.2	56-25-43.5	64-34-48.3	65-35-52.7	72-43-58.4	71-43-59.5	76-37-59.4	65-23-49.8	61-29-45.8	58-27-44.5	58-27-44.6	50.1
1932	56-27-45.6	51-29-41.0	57-25-43.1	58-33-45.5	67-33-51.5	76-39-59.4	75-47-60.5	78-44-63.1	72-34-55.4	66-30-48.3	58-30-46.5	53-31-44.4	50.4
1933	56-23-39.1	58-24-41.7	60-33-46.3	61-30-49.2	68-41-54.4	72-47-60	82-47-63.7	81-45-62.6	78-35-60.1	67-34-51.0	58-25-43.4	51-26-40.4	51.0
1934	56-27-42.5	53-26-39.5	58-30-44.0	63-30-41.5	70-33-51.5	76-38-57.0	82-50- 6.0	71-38-54.5	72-38-55.0	63-33-48.0	55-29-42.0	55-33-44.0	48.3
1935	55-26 40.5	57-24-40.5	59-27-43.0	67-34-50.5	70-30-50.0	75-48-61.5	76-44-60.0	76-41-58.5	70-40-55.0	65-55-50.5	55-24-39.5	52-19-35.5	48.7
1936	54-29-41.5	53-30-41.5	58-30-44.0	60-30-45.0	73-35-54.0	75-39-57.0	70-44-57.0	80-44-62.0	72-34-53.0	65-34-49.5	57-27-42.0	55-27-41.0	48.9
1937	58-26-42.0	57-30-43.5	54-25-39.5	66-37-51.5	72-30-51.0	71-43-57.0	77-45-61.0	77-45-61.0	70-40-55.0	65-29-47.0	56-25-40.5	54-24-39.0	49.0
1938	49-4-37-43.3	49-38-43.7	55-43-49.0	58-37-47.8	59-45-52.0	64-50-57.1	65-51-58.2	67-53-60.1	64-49-57.0	58-45-51.4	54-42-48.4	48-32-40.0	50.6

TABLE 83.—Showing Monthly Rainfall in Cork for 61 Years ending 1938.

Month.	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
Jan. ...	2·28	8·32	1·70	1·39	3·91	6·63	6·18	4·01	3·09	4·80	5·42	2·82	6·00	2·30	3·35	5·98	6·15	5·73	1·14	3·27	2·51	4·53	3·55	5·68	1·86	8·38	5·81	3·59	5·83	1·27	2·83	1·80	3·07	0·80	5·01	7·40	1·83	3·46	2·04	3·07	4·91	4·64	5·84	2·57	6·44	1·92	8·04	5·84	9·18	4·75	5·30	2·13	7·07	1·67	5·19	3·58	4·67	0·84	7·51	9·04	4·59
Feb. ...	2·80	4·77	4·78	5·46	4·86	6·88	7·35	6·88	3·76	1·49	0·41	7·48	3·16	0·53	4·14	3·56	2·23	2·56	1·90	2·67	1·53	5·28	4·16	1·79	6·32	3·85	5·38	1·60	3·35	1·98	2·31	2·25	5·61	1·82	4·76	2·36	6·46	7·44	4·36	1·45	6·12	3·68	1·67	2·56	4·42	8·53	2·97	4·45	4·74	2·66	3·48	8·10	1·03	2·62	0·47	2·25	0·32	2·95	6·05	4·64	3·11
March ...	0·95	1·83	3·28	5·20	2·00	1·78	5·01	2·75	5·91	2·18	3·14	1·53	4·35	1·53	1·24	0·26	1·84	3·19	8·99	6·29	0·63	1·82	0·78	3·52	1·77	5·24	2·56	3·49	1·23	0·93	3·38	2·77	2·80	3·29	3·69	4·00	5·33	0·72	2·34	1·32	3·69	2·46	4·14	2·91	2·22	3·90	1·38	0·82	1·59	4·79	7·33	0·89	6·88	8·01	3·18	2·78	4·67	1·54	3·22	5·95	1·52
April ...	4·55	3·70	2·84	1·64	5·05	2·66	1·84	4·30	2·45	1·13	1·78	4·55	1·37	2·82	0·88	1·54	6·53	2·95	0·43	5·39	3·71	3·06	1·68	4·42	3·22	2·00	2·62	3·44	1·40	2·70	1·47	4·75	1·88	1·77	0·54	3·59	1·37	1·39	3·25	1·12	1·73	1·30	5·54	0·54	2·98	4·28	2·44	5·51	3·04	1·21	5·66	1·46	2·09	2·72	2·48	2·58	3·52	3·31	1·58	3·56	0·10
May ...	4·84	1·83	0·80	1·76	2·31	1·31	1·60	3·05	2·80	1·04	3·60	4·50	3·93	2·63	2·74	2·01	0·88	0·77	0·16	1·69	2·38	3·94	2·65	1·88	2·00	2·65	2·25	0·86	3·24	3·66	2·81	1·52	1·84	1·44	1·36	4·57	1·40	2·52	2·91	4·04	2·73	5·18	5·36	1·66	1·07	0·96	3·62	4·35	2·87	2·38	2·60	4·05	1·67	4·36	4·24	4·57	1·98	0·71	1·38	1·94	4·48
June ...	6·74	5·27	1·93	4·79	3·36	2·30	0·79	1·42	1·32	0·59	4·23	1·78	2·86	3·45	2·78	1·68	2·10	3·33	2·16	3·08	2·02	1·37	4·26	1·58	3·13	3·63	2·14	2·52	1·64	3·39	1·80	2·79	3·66	2·86	5·27	2·09	0·88	2·16	3·03	1·77	1·11	0·63	3·22	0·02	0·80	0·14	3·70	0·63	2·28	2·57	5·60	1·11	2·15	3·27	1·39	1·59	1·63	5·31	1·55	0·68	2·80
July ...	1·25	4·24	1·68	1·85	4·80	3·50	2·75	1·52	5·00	1·43	5·36	4·81	2·26	1·53	3·14	1·79	1·90	3·64	4·71	0·96	1·26	1·85	1·64	0·61	2·71	5·83	4·15	1·96	3·02	2·64	1·71	0·51	2·16	2·03	5·08	0·20	3·00	5·22	2·49	1·57	4·43	1·49	3·96	3·77	3·21	2·37	3·81	2·77	1·67	4·35	1·98	4·09	2·79	8·73	2·67	2·00	2·20	0·50	5·67	3·21	3·67
August...	5·06	2·84	1·07	4·95	3·20	4·12	0·86	4·07	2·78	2·9	3·34	1·11	2·28	3·99	7·75	5·42	2·63	4·93	1·45	4·52	4·26	2·72	3·04	2·31	3·43	4·40	2·90	6·33	1·49	2·24	2·63	0·42	4·73	2·99	3·21	2·27	3·78	2·22	3·76	6·54	2·53	3·13	2·28	3·59	3·91	5·38	2·15	3·03	2·50	3·68	5·04	2·16	5·36	4·74	2·28	1·64	3·31	2·68	0·38	1·66	1·85
Sept. ...	2·42	3·25	1·80	2·38	2·05	5·02	2·40	5·47	3·93	2·48	0·98	3·87	2·69	3·12	3·64	1·34	1·40	1·30	5·46	2·07	3·04	1·15	0·81	8·32	1·95	4·22	4·02	1·41	0·40	1·13	4·04	0·46	1·37	2·54	1·01	5·27	3·07	1·88	1·12	1·29	6·41	2·15	2·66	1·35	3·45	2·96	5·86	2·63	0·51	3·49	2·26	0·82	4·52	0·87	2·36	1·58	5·96	6·80	2·88	3·01	2·17
Oct. ...	2·97	0·19	2·49	3·99	4·90	2·85	1·72	2·14	6·15	2·75	2·94	3·87	1·40	6·79	3·97	2·55	6·29	2·67	3·25	5·42	2·79	1·73	5·38	2·59	1·22	6·14	2·51	1·05	4·38	5·00	2·88	6·58	4·32	3·98	2·52	6·61	1·51	5·64	9·13	3·51	3·39	0·52	3·96	2·90	1·96	4·82	4·22	5·32	2·87	3·48	6·41	3·22	5·12	1·07	3·79	2·09	3·58	2·10	1·53	2·48	4·84
Nov. ...	1·88	0·65	5·24	6·93	4·67	4·03	3·50	3·21	2·42	2·53	7·33	2·51	4·94	4·26	8·18	2·11	5·30	7·88	1·61	5·36	3·01	3·36	5·93	1·79	9·33	1·74	1·55	4·81	3·01	4·88	2·60	0·47	4·61	4·19	1·37	4·45	2·96	3·48	9·04	1·08	3·22	2·90	4·16	5·26	1·85	3·46	5·96	2·48	6·20	4·15	5·33	0·61	5·26	9·85	1·66	2·72	1·13	4·58	3·46	3·57	5·15
Dec. ...	2·24	1·76	3·13	5·30	4·87	1·06	3·84	3·04	4·77	3·22	7·60	3·53	3·92	6·27	3·94	5·29	3·08	10·93	0·96	4·35	3·44	15·11	6·52	5·64	3·37	4·90	3·91	6·34	1·91	6·04	3·68	4·20	4·31	6·84	3·16	1·41	10·73	6·56	2·94	2·66	7·12	4·56	5·12	1·84	4·34	2·27	7·48	4·13	0·48	8·43	5·61	10·15	3·97	2·25	8·17	1·66	8·91	4·29	6·89	2·45	4·35
Total	37·58	41·45	30·74	45·80	45·58	42·18	37·85	40·81	44·38	26·45	46·13	41·06	39·58	39·10	44·04	33·63	40·33	40·68	32·22	44·89	35·64	45·92	40·0	40·13	40·51	53·31	39·63	41·40	30·90	35·86	31·54	28·58	40·36	34·55	36·88	44·16	42·42	42·83	46·35	32·33	33·47	44·31	36·48	40·28	29·83	37·25	41·04	51·56	41·15	37·84	45·67	55·66	46·08	47·91	44·26	37·58	29·04	42·03	35·61	40·29	42·81	39·73
No. of Raindays	190	212	170	220	215	222	205	185	212	150	195	179	201	198	193	170	158	194	179	221	192	182	224	191	187	250	214	182	136	194	207	164	240	209	244	201	213	198	211	182	219	189	217	178	201	214	225	197	209	220	231	156	198	207	205	175	223	196	196	197	207

Greatest month's rainfall 13·72 inches in December, 1899. Least month's rainfall 0·02 in June, 1921

Greatest number of consecutive days with rain was 31, ending February 12th, 1918. Greatest number of days without rain (absolute drought) was 26, ending July 3rd, 1887.

SUNSHINE.

The total number of hours of bright sunshine received in 1930 was 1,478.1; in 1931 the amount was 1,313.8; in 1932 the amount was 1,282.5; in 1933 the amount was 1,465.8 hours; in 1934 the amount was 1,480.1 hours; in 1935, 1,442.0 hours; in 1936, 1,357.5 hours, in 1937, 1,259.4 hours; and in 1938, 1,350.9 hours.

Table 81.

Mean Temperature (°F.) for each quarter and for each year from 1901 to 1938, inclusive.

Year	I.	II.	III.	IV.	For whole year
	°	°	°	°	°
1901	37.5	50.4	57.2	41.9	46.8
1902	40.4	48.1	55.3	43.3	46.5
1903	41.1	49.4	54.4	41.4	46.6
1904	38.3	49.1	55.4	45.6	47.1
1905	42.1	52.4	56.9	42.4	48.4
1906	40.6	50.6	57.9	44.0	48.3
1907	41.3	49.1	57.5	42.1	47.5
1908	40.6	50.4	57.0	46.6	48.6
1909	40.2	50.6	56.9	41.8	47.5
1910	39.5	50.3	56.3	43.2	47.4
1911	39.7	51.3	58.5	42.4	47.5
1912	40.9	50.4	53.5	47.9	48.2
1913	43.0	49.4	57.4	48.7	49.6
1914	40.3	51.4	56.7	43.5	48.1
1915	38.3	49.2	52.7	39.2	44.9
1916	40.0	45.9	53.7	39.7	44.8
1917	36.7	48.1	54.2	43.9	45.7
1918	40.0	51.3	55.0	42.0	47.0
1919	37.6	48.5	54.4	40.0	45.5
1920	40.3	48.9	52.6	42.0	45.9
1921	39.6	48.3	54.3	42.7	46.2
1922	40.2	49.9	57.8	46.4	48.6
1923	44.0	50.7	58.4	43.8	49.2
1924	42.6	51.4	56.7	47.6	49.6
1925	43.3	51.8	57.9	44.5	49.4
1926	45.1	52.1	61.1	44.0	50.6
1927	44.1	52.2	58.5	45.5	50.1
1928	44.7	52.0	58.0	46.4	50.3
1929	43.2	52.3	59.4	45.7	50.1
1930	40.7	52.9	57.8	46.5	49.5
1931	42.3	53.1	58.2	46.7	50.1
1932	43.2	52.1	59.7	46.4	50.4
1933	42.3	54.5	62.1	44.9	51.0
1934	42.4	52.8	59.8	47.6	50.6
1935	44.1	52.7	59.4	44.2	50.1
1936	42.8	52.6	59.9	47.1	50.5
1937	42.6	53.8	59.2	44.9	50.1
1938	45.3	52.3	58.4	46.6	50.6

BAROMETER.

The mean reading for 1938 was 30.00 inches; the highest was 30.77 inches on the 11th February. The lowest was 28.93 inches on the 9th January. (Observations made at 9 a.m., G.M.T. only).

Section XI.—Housing

The total number of houses erected by the Corporation since 1922 amounts to 1762, made up as follows :—MacCurtain's Villas, 76 houses ; McSwiney's Villas, 40 ; French's Villas, 30 ; Capwell Site, 148 ; Turner's Cross, 152 ; Turner's Cross Extension, 168 ; North West (A) 252 ; North West (B) 108 ; North West (C), 78 ; North West (D), 82 ; Commons Road (A) 170 ; Commons Road (B) 106 ; Greenmount, 86 ; Baker's Lane (A) 266. In addition, the Corporation have leased 237 building sites at Turner's Cross, Friar's Walk and Ashburton to Public Utility Societies and private builders. Up to and including the 31st March, 1938, the assistance given to private persons and Utility Societies amounted to £13,210 in respect of 263 houses and 6 flats, as follows :—

(1) Under Section 6 of the Housing Acts 1925–28, the sums paid by way of grants amounted to £4,685 in respect of 62 houses and 6 flats.

(2) Under the Housing Acts, sums paid by way of grants amounted to £8,325 in respect of 201 houses.

Small Dwellings Acquisition Act.

The sums advanced to borrowers and Public Utility Societies under this Act amounted to £161,472 10s. 0d. on 31st March, 1939. The sum of £103,125 was advanced to the occupiers of 192 houses built by Public Utility Societies and a sum of £58,347 10s. 0d. has been advanced to private persons to build or purchase the interest in their houses. The amount advanced in any case does not exceed 75 per cent. of the value of the house, and the repayments may be spread over periods of 5, 10, 15, 20 or 25 years. The total sum expended by the Corporation to date in providing dwellings in various parts of the City amounts to £964,386, and the number of houses built is 2,326.

The following note has been contributed by Mr. G. A. Byrne, B.E., M.R.San.I., F.I.Hsg., Housing Superintendent :—

At the beginning of the year 1938 the Corporation owned 2,028 houses and at the end of the year owned 2,292. These include 266 built at Baker's Lane and allowance is made for those bought out at Turner's Cross and Capwell by tenants.

The 266 houses at Baker's Lane were completed and tenancies allocated in November. 178 were allocated to deserving applicants from overcrowded and unsuitable habitations, and 88 were allocated to persons whose houses were closed or demolished as unfit for human habitation. The 178 houses are rented at 12/6 per week, which is too high for the general run of working classes, especially for large families consisting of very young children. The rents of the 88 houses allocated to " clearance " cases are fixed on a " differential " basis and vary between 3/6 and 12/6 per week according to the means of the tenant.

Here again the high initial cost of the houses demands that the Corporation should receive an average weekly rent of 9/– per house and the average earning power of the tenants only justifies a weekly rent of 6/–. This means that on these 88 houses the Corporation is faced with an annual loss of £750 0s. 0d.

The following table shows the numbers and rents of the various houses built by the Corporation to date :—

Location	No. of Houses	Weekly Rents (Including Rates)
Madden's Buildings	76	4/4 to 6/6
Ryan's ,, ...	16	2/4 to 5/–
Horgan's ,, ...	126	2/8 to 6/5
Roche's ,, ...	128	2/11 to 7/8
Corporation ,, ...	33	5/–
Sutton's ,, ...	46	5/9 to 6/7
Kelleher's ,, ...	50	5/7 to 7/5
Barrett's ,, ...	89	4/3 to 6/7
MacCurtain Villas	76	11/4 and 11/10
McSwiney's ,, ...	40	11/–
French's ,, ...	30	10/– and 10/6
Capwell	148	*8/6, 10/6 and 14/–
Turner's Cross	152	*8/–, 10/– and 13/–
Turner's Cross Extension....	168	11/6 and 12/6
Gurranabraher Nos. 1 and 2	277	†2/6 to 8/–
,, 3	83	8/6
,, 4	78	†2/6 to 8/6
,, 5	82	†3/6 to 9/6
Common's Road No. 1	48	9/6, 10/6 and 13/6
,, 2	122	†3/6 to 9/6
,, 3	64	†3/6 to 12/6
,, 4	42	10/6 and 12/6
Greenmount No. 1	86	†2/6 to 8/–
Baker's Lane No. 1	178	12/6 and 15/–
,, 2	88	†3/6 to 12/6
Total	2326	

*Exclusive of Rates. †Differential Rents.

Work is preceeding on the scheme of 206 houses at Spangle Hill, and these houses should be completed and tenanted by the end of June, 1939.

The second section of the Baker's Lane scheme containing 242 houses should also be ready during the coming year.

The work on the Spangle Hill site was slowed up during the year by an inter union dispute between two sections of the plastering trade.

A scheme containing 200 houses for Greenmount will be submitted shortly for the approval of the Corporation.

When demolishing houses under the Slum Clearance a local authority is legally bound to rehouse those displaced under the Scheme, but when obtaining Closing or Demolition Orders under Sections 19 and 23 of the Housing Act of 1931 there is a doubt as to whether the Corporation is legally bound to rehouse those displaced. There is no doubt, however, that even if there be no legal obligation there is still a moral one to rehouse these people. Included in such families are many which consist of only two or three persons and it does not appear to be an economic proposition to grant a small family such as this a house containing three bedrooms. In Gurranabraher No. 5 section, containing 82 houses, it was found on inspection that 10 families were leaving unused two of the rooms and 37 families were leaving unused one of the rooms provided.

This would seem to show that a larger number of houses containing only two bedrooms should be built or that the Corporation should be free to move without loss of grant into the new houses, existing tenants of the older houses at present living in an overcrowded condition. This latter alternative would presuppose the granting of differential rents to both incoming and outgoing tenants of the older buildings. When dealing with the older houses at present under fixed rents, the change to differential rents could be made compulsory on all new tenancies and could be of a voluntary nature as regards existing tenants. Such a system would ease an amount of want at present existing amongst occupants of the older type fixed rent houses in addition to minimising the wastage of available space in the new schemes.

It would seem also advisable to provide a block of one and two bedroom cottages for aged persons, such block to be under the supervision of a resident caretaker. These houses should be built as far as possible on a level stretch and should be in the form of a rectangle enclosing a grass plot, should have no front gardens and only a small yard for each house. Such a scheme would again release a number of houses suitable for large families, which are at present occupied by aged persons and couples.

A very urgent need is the extension of bus services to Gurranabraher and Spangle Hill. The populations of these two sites are 3,500 and 1,700 respectively. Shops have now been built on Gurranabraher Road, and sites at Spangle Hill have been leased to persons who wish to build shops there.

Investigation shows that many of the houses dealt with as "Unhealthy" are also infested with bugs. In conveying furniture to their new houses on Corporation schemes the tenants of these houses are causing infestation of the new houses. It should be necessary for all new tenants to have their furniture and bedding passed through a disinfestation chamber on their way to the new houses.

It is usually felt that when a Clearance Scheme is mooted, the Corporation are seeking to acquire land for nothing. It may be of interest to note that the compulsory acquisition of the eight acres in the North West Area at present dealt with, will cost the Corporation the sum of £23,000 0s. 0d. This does not include the levelling of the site, the removal of old service pipes and the re-development of the area.

The Minister for Local Government and Public Health has confirmed Clearance Orders on Knapp's Square, numbers 1 and 2, Fitzgerald's Alley and St. Joseph's Court. At the expiry of the appropriate legal period the tenants in these areas will be rehoused in the next available scheme of new houses.

The validity of the Compulsory Purchase Order on Pickett's Lane was tested in the High Court and the Supreme Court and the decision of the Corporation was in each case upheld.

" Official Representations " have been made by the Medical Officer of Health on two further areas in the North West, Wises Lane and Sive's Lane. These areas contain 79 houses and 75 houses respectively. The main body of the Corporation visited these areas on two occasions before recommending that they be acquired by Compulsory Purchase and the orders will now be sent to the Minister for Local Government and Public Health for confirmation.

Many houses throughout the city found to be in such a bad state of repair that it would be injudicious to wait for their demolition until they could be included in a Clearance Area. The Medical Officer of Health has devoted special attention to these houses, and following representations to the City Manager, Closing or Demolition Orders have been obtained under appropriate sections of the 1931 Act on the following houses :—

Wandesford Street—Nos. 3 and 5.
St. Francis' Place—Nos. 1, 2, 3 and 4.
Gunpowder Lane—No. 16.
South Main Street—No. 14.
First Burnt Lane—No. 10.
Gerald Griffin Avenue—Nos. 8, 23 and 24.
Malachy's Lane—Nos. 5 and 6.
Corbett's Lane—No. 16.
Union Quay—No. 18.
Blarney Street—Nos. 139, 162, 266 and 267.
Kyrl Street—No. 19.
Grattan Street—Nos. 12, 13, 21 and 52.
Grafton Street—Nos. 2, 3 and 4.
Washbrew Lane—Nos. 3 and 6.
Fair Hill—No. 20.
Upper Quarry Lane—Nos. 10 and 14.
Kerry Hall Avenue—Nos. 2, 3, 4, 5, 6, 7, 8, and 9.
Kerry Hall Terrace—Nos. 8, 9, 16 and 17.
Lower Barrack View—No. 20.
Brogue Market—Nos. 3 and 4.
Barrack Street—No. 8.
Lower Glanmire Road—No. 111.

From these 50 houses 88 families totalling 449 persons were moved to Baker's Lane Housing Site, and of these 55 families comprising 285 persons are moved from the City to the County Area, and lose many benefits (as mentioned in last year's report).

In addition to the above, the Medical Officer of Health has also made representations to the City Manager concerning the following houses :—

Red Abbey Place—Nos. 10 and 11.
Mary Street—Nos. 10 and 16.
Douglas Street—Nos. 16, 16a and 49.
Cattlemarket Avenue—No. 19.
Wolfe Tone Street—No. 57.
Penrose Square—No. 5.
Batchelor's Quay—Nos. 6, 7 and 8.
Moriarty's Lane—Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24.
Little Market Street—Nos. 1, 2 and 3.
St. Paul's Avenue—Nos. 16, 17, 17a and 18.
Riordan's Court—Nos. 4, 5, 6, 7, 8, 9, 10 and 11.
Glankittane Square—Nos. 1, 4, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18 and 19.
Riordan's Square—Nos. 1, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14.

and the necessary steps are being taken to secure the demolition or closing of these houses.

Since June 1934, 518 houses have been demolished or closed in the city, and from these houses 820 families comprising 4,477 persons have been rehoused in Corporation Houses.

Table 84.—Shewing the number of houses built since 1934 and the number of families rehoused and the effect on the population of the City :—

Location	Number of Houses	City Area		County Area	
		Families	Persons	Families	Persons
Gurranabraher	520	516	2923	4	22
Commons Road	276	10	79	266	1643
Greenmount	86	86	430	—	—
Baker's Lane	266	148	930	118	668
Totals	1148	760	4382	388	2333

The standard of both cleanliness and neatness in houses and gardens continues to improve, and improvement is also noted in the health of the children.

The Rent Collection continues steady and the Differential Rent System seems to be the most feasible method of dealing with the variations in earning power, which are an integral part of the life of the working classes as a whole.

Table 85.—Analysis of the incomes of the 797 families who are at present housed under differential rents.

SCHEME	NUMBER OF TENANTS WITH INCOMES AS FOLLOWS									No. of houses in Scheme
	Under 20/–	20/– to 30/–	30/– to 40/–	40/– to 50/–	50/– to 60/–	60/– to 70/–	70/– to 80/–	80/– to 100/–	Over 100/–	
Gurranabraher No. 5	22	21	11	10	7	2	1	3	5	82
,, No. 4 ...	12	10	12	7	11	8	7	8	3	78
,, No. 2	5	4	3	—	5	6	—	—	2	25
,, No. 1 and 1a	60	37	38	24	35	28	20	4	6	252
Greenmount	15	20	12	10	8	3	7	8	3	86
Commons Road No. 2...	30	24	19	16	12	11	4	4	2	122
,, No. 3...	19	13	15	3	7	2	2	2	1	64
Baker's Lane No. 2	14	25	17	9	6	7	2	6	2	88
Totals	177	154	127	79	91	67	43	35	24	797

By comparing the previous table of incomes with the following analysis of the numbers paying rents of varying figures, one can easily see the advantages of the system.

Table 86.—NUMBER OF TENANTS PAYING RENTS AT

SCHEME	12/6	12/–	11/6	11/–	10/6	10/–	9/6	9/–	8/6	8/–	7/6	7/–	6/6	6/–	5/6	5/–	4/6	4/–	3/6	3/–	2/6	No of Houses in Scheme
Gurranabraher No. 5	–	–	–	–	–	–	18	–	3	5	4	4	1	4	–	2	2	15	21	3	–	82
„ No. 4	–	–	–	–	–	–	–	–	3	30	–	3	–	7	3	10	2	4	3	3	10	78
„ No. 2	–	–	–	–	–	–	–	–	–	11	–	3	1	2	–	1	1	–	2	2	2	25
„ 1 and 1a	–	–	–	–	–	–	–	–	–	79	3	10	9	17	9	21	7	22	14	23	38	252
Commons Rd. No. 2	–	–	–	–	–	–	28	1	4	7	3	5	3	7	9	5	10	8	32	–	–	122
„ No. 3	3	–	–	–	2	1	3	1	4	1	1	–	1	3	7	5	5	7	20	–	–	64
Greenmount	–	–	–	–	–	–	–	–	–	27	–	7	1	14	1	2	4	5	16	9	–	86
Baker's Lane No. 2	9	–	–	2	–	5	–	5	1	2	–	4	5	5	4	7	7	6	26	–	–	88
	12	–	–	2	2	6	49	7	15	162	11	36	21	59	33	53	38	67	134	40	50	797

Section XII.—School Medical Service.

Medical Inspection for the year ended 31st December, 1938.

Number of Children Inspected.

1.—*Particular Inspections*	4,487
(a) Routine	4,004
(1) Entrants	1,523
(2) Intermediates	1,428
(3) Leavers	1,053
(b) Special	483
2.—*Other Inspections*, e.g., re-inspection of children referred for observation ; of children treated for eye, ear, nose and throat defects since previous examination ; of those who previously refused treatment of such defects and of those who signed for treatment by private practitioners	3,277

Table 87.—Return of Defects found by Medical Inspection for the year ended 31st December, 1938.

	Disease or Defect	Routine Inspections	Special Inspections
		Number of Defects	Number of Defects
Skin	Ringworm—Scalp	8	2
	Ringworm—Body	5	1
	Scabies	13	—
	Impetigo	28	—
	Other Diseases (non-Tuberculous)	17	1
Eye	Defective Vision (Strabismus excluded)	342	252
	Strabismus	120	42
	Blepharitis	63	12
	Conjunctivitis	71	44
	Corneal Opacities	19	1
	Trachoma	2	4
	Other Conditions	31	40
Ear	Defective Hearing	18	11
	Otorrhoea	55	56
	Other Conditions	13	24
Nose and Throat	Enlarged Tonsils	261	72
	Adenoids	101	21
	Enlarged Tonsils and Adenoids	329	113
	Other Conditions	30	28
Miscellaneous	Enlarged Cervical Glands (non-Tuberculous)	80	9
	Sceptic Sores, Minor Injuries, etc	76	2

Table 87.—Return of Defects found by Medical Inspection for the year ended 31st December, 1938—continued

	Disease or Defect	Routine Inspections	Special Inspections
		Number of Defects	Number of Defects
Heart and Circulation	Heart—Organic	16	37
	Heart—Functional	13	3
	Anaemia	46	16
Lungs	Bronchitis	52	34
	Other Diseases (non-Tuberculous)	13	6
Nervous System	Chorea	1	3
	Epilepsy	—	—
	Other Conditions	7	1
Tuberculosis	Pulmonary	—	—
	Glands	6	6
	Bones and Joints	1	—
	Other Forms	—	1
Deformities	Infantile Paralysis	7	—
	Surgical Tuberculosis	3	—
	Rickets	4	2
	Congenital	8	—
	Other Forms	7	—
	Hernia	10	3
	Rickets	5	2
	Other Diseases and Defects	78	9

DENTAL DEFECTS.

	No. of Inspections	No. found to require Treatment
Routine	4487	2755
Special	292	292
Total	4779	3047

Defective Nutrition.

Percentage of mal-nourished children	11.6

Uncleanliness.

Percentage of Verminous Children—Boys and Girls	5.7
,, ,, ,, Girls	8.1
,, ,, ,, Boys	3.5

Table 88.—Percentage of Conditions of Uncleanliness.

	Head Nits Present	Head Pediculi Present	Body Pediculi Present
Girls	6.4	2.0	2.1
Boys	0.7	1.6	2.0

Unsatisfactory Clothing and Footwear.

Boys and Girls	12.4%
Girls	11.3%
Boys	13.5%

Percentage of Principal Diseases and Defects found by Routine Medical Inspection.

Disease or Defect	Percentage
Defective Nutrition	11.6
Verminous Conditions	5.7
Skin (non-Tuberculous Disease)	1.8
Teeth	61.4
Eye :—	
(a) Defective Vision requiring Refraction	16.6
(b) Other Diseases and Defects	4.6
Ear	2.1
Nose and Throat :—	
(a) Enlarged Tonsils and Adenoids	17.3
(b) Other Conditions	0.7
Heart and Circulation	1.9
Lungs (non-Tuberculous Disease)	1.6
Tuberculosis	0.2
Nervous System	0.2
Deformities	0.7
Other Diseases and Defects	1.9

" Following up " of Children found to be suffering from Physical Defects.

In connection with children found to be suffering from physical defects :—

Number of children visited	2,643
Number of visits paid	3,221

In connection with those who refused treatment or failed to keep appointments given for treatment :—

Number of children visited	305
Number who consequently obtained treatment	52=17%

Children found to be suffering from Defective Vision

Teachers were notified of children for whom glasses were prescribed, and instructions (as detailed in previous reports) were given to parents and teachers regarding myopes, with a view to preventing progress of the myopia.

Myopic Defects :—

Number of myopes refracted	90

Nature of Defect :—

Myopia	24
Simple Myopic Astigmatism	4
Compound Myopic Astigmatism	27
Mixed Astigmatism	35

Degree of Myopia :—

5 to 5 Dioptres	17
5 to 10 Dioptres	14
10 to 15 Dioptres	2

Table 89.—The Average Height and Weight of Children Inspected and Comparison with the Average Standard. (Baldwin and Woods Tables).

BOYS.

Age last Birthday Years	No. of Children Examined	Average Height in ins.	Average Weight in lbs.	Average Standard Weight for Height	Percentage over or under Weight according to Standard
5	252	43	42	41	2.4% over
6	335	44	44	43	2.3% over
7	97	46	48	48	—
8	315	48	54	53	1.8% under
9	281	50	57	58	1.7% under
12	261	56	76	77	1.2% under
13	242	57	80	82	2.4% under

GIRLS.

Age last Birthday Years	No. of Children Examined	Average Height in ins.	Average Weight in lbs.	Average Standard Weight for Height	Percentage over or under Weight according to Standard
5	169	42	40	39	2.5% over
6	378	44	43	42	2.3% over
7	69	45	47	45	4.4% over
8	299	48	51	52	1.9% under
9	292	49	56	55	1.7% over
12	177	57	79	82	3.6% under
13	243	58	83	88	5.6% under

Rheumatic Children.

Special investigation of children suspected to be suffering from rheumatism was continued during the year and classification was made on the same basis as that detailed in my report for 1935.

The number of children examined as "routines" was 4,004, the number of suspects 196 and the number positive 102.

The number of children examined as "specials" was 483, the number of suspects 130 and the number positive 108.

The following tables give the number of cases found to be rheumatic, classified under the various groups according to age and sex.

Table 90.—I.—ROUTINE EXAMINATIONS.

GIRLS.

AGE GROUP	Number Examined	Number of Suspects	Number Rheumatic	Percentage Rheumatic	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
Entrants	741	24	13	1.7	1	1	–	1	8	1	1
Intermediates	715	57	30	4.2	–	4	1	3	13	4	3
Leavers	500	36	17	3.4	2	3	–	1	4	5	4
Total	1,956	117	60	3.1	3	8	1	5	25	10	8

BOYS.

AGE GROUP	Number Examined	Number of Suspects	Number Rheumatic	Percentage Rheumatic	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
Entrants	782	21	11	1.4	–	7	–	–	2	–	2
Intermediate	713	32	16	2.2	1	6	–	2	3	2	2
Leavers	553	26	15	2.7	2	2	–	1	4	–	6
Total	2,048	79	42	2.0	3	15	–	3	9	2	10

BOYS AND GIRLS.

Number Examined	Number of Suspects	Number Rheumatic	Percentage Rheumatic	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
4,004	196	102	2.5	6	23	1	8	34	12	18

II.—SPECIAL EXAMINATIONS.

	Number Examined	Number of Suspects	Number Rheumatic	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
Girls	279	85	68	5	15	1	8	20	7	12
Boys	204	45	40	5	15	3	4	2	4	7
Total	483	130	108	10	30	4	12	22	11	19

The following gives the percentage of signs and symptoms found in rheumatic children and their personal and family history as regards rheumatism.

Endocarditis	16.2
Carditis	4.8
Suspicious Heart Signs	31.4
Suspicious Nervous Signs and Symptoms	22.4
Suspicious Constitutional Signs and Symptoms	36.1
Unhealthy or Enlarged Tonsils	45.7
Tonsils removed	23.8
Growing Pains and Sore Throats	17.1
Growing Pains	30.0
Recurrent Sore Throats	10.0
History of Acute Rheumatism	33.3
History of Chorea	17.1
History of Acute Rheumatism and Chorea	1.9
Family History of Rheumatism	19.0

Treatment of Defects.

The following figures do not include treatment of children who attend City Schools but who reside in the County and are therefore referred to the County School Medical Service for treatment.

Enlarged Tonsils and Adenoids.

Operative Treatment.

Under the School Medical Service Scheme	By Private Practitioners	Total
326	28	354

Other Defects and Diseases of Nose and Throat.

Treated at :—

Intern Department of Hospitals associated with S.M.S. Scheme	25
Extern Department of Hospitals associated with S.M.S. Scheme	11
Intern and Extern Departments of Hospitals associated with S.M.S. Scheme	3
Total number treated	39

Defective Vision.

Submitted to Refraction		Glasses Prescribed				
Under the School Medical Service Scheme	By Private Practitioners	Under the School Medical Service Scheme	By Private Practitioners	Total	Change of Glasses not necessary	Glasses not Prescribed
596	16	573	16	589	19	4

Other Diseases and Defects of the Eye.

Treated at Intern Department of Hospitals associated with S.M.S. Scheme	10
Treated at Extern Department of Hospitals associated with S.M.S. Scheme	141
Treated at Intern and Extern Departments of Hospitals associated with S.M.S. Scheme	14
Total number treated	165

Ear Diseases and Defects.

Treated at Intern Department of Hospitals associated with S.M.S. Scheme	13
Treated at Extern Department of Hospitals associated with S.M.S. Scheme	115
Treated at Intern and Extern Departments of Hospitals associated with S.M.S. Scheme	6
Total number treated	134

Minor Ailments.

Treated at the School Clinic	1,168

Dental Defects.

Treated under the School Medical Service Scheme	Treated by Private Dentists	Total
1,666	22	1,688

Nature of Dental Treatment.

Extractions	Temporary Teeth	4,846
	Permanent Teeth	2,079
	Total	6,925
Fillings	Temporary Teeth	48
	Permanent Teeth	678
	Total	726
Scalings		204
Other Operations		99

General Anaesthetics have been administered to 347 children.

Children residing in the County and attending Schools within the Borough.

Referred to the County School Medical Service for Treatment :—

No. referred for Nose and Throat Defects	114
No. referred for Eye Defects	95
No. referred for Ear Defects	4
No. referred for Dental Defects	401

Children referred to Tuberculosis Clinics.

	Suspects	Contracts
No. referred	32	40
Positive	13	—
Negative	8	24
Retained for Observation	5	14
Did not attend	5	2
Did not attend but had treatment (Tuberculous glands removed) by Private Practitioner	1	—

Review of Defects Treated under the School Medical Service Scheme.

Teeth.—All treatments show a marked increase on last year's—the number of extractions has increased by 1,676, fillings by 86, scalings by 59 and other operations by 61.

Skin.—322 cases were treated at the School Clinic.

Minor Injuries and Septic Sores.—644 cases were treated at the School Clinic.

Ear.—134 cases were treated at the Hospitals associated with the Scheme. The majority of these were of otitis media ; the others included 3 cases of mastoiditis (2 of which had operative treatment) and 3 cases of aural polypi.

Nose and Throat.—326 cases of enlarged tonsils and adenoids were operated on and 39 cases of other diseases of the nose and throat were treated at the Hospitals associated with the Scheme. The latter included 29 cases of sinusitis (8 of which had operative treatment), 4 of deflected septum, which had operative treatment and 1 of atrophic rhinitis.

Eye.—*Defective Vision.*—596 cases were refracted at the Hospitals associated with the Scheme. Glasses were supplied by Messrs. T. L. Egan & Co. Ltd., Lavitt's Quay, and were given free of charge to 452 children whose parents were in poor financial circumstances.

External Eye.—165 cases were treated at the Hospitals and 202 at the School Clinic. The former included 16 cases of squint (4 of which had operative treatment and 12 fusion training), 1 of dacryocystitis and lachrymal fistula (in which case the sac was excised), 3 of cataract (needling performed), 6 of trachoma, 1 of spring catarrh, 2 of herpes ophthalmicus, 21 of ulcers, 4 of iritis, 9 of keratitis, 7 of injury and 3 tarsal cysts which were excised.

Trachoma.

Children suffering from this disease have been kept under strict observation as regards their attendance for treatment and defaulters were promptly "followed up."

The number of cases was 6, this number includes 4 of the 5 cases recorded last year. One of the latter, who was pronounced "cured" last October was sent to the Specialist for observation in June and again in October. There has been no recurrence of the disease: her visual acuity has improved from R6/18 L6/24 to R6/12 (part) L6/18 (part). She has been sent for refraction.

The other four cases have been kept on treatment—one case attended the specialist once a month; she is pronounced to be "practically cured" and is to continue monthly visits for observation. She has been refracted and is myopic. Her visual acuity is R6/24 L6/24, she reads R6/12 (part) and L6/12 (part) with glasses.

Another case has been on weekly treatment, she has improved steadily and the condition has now reached the chronic shiny stage. Her visual acuity has improved since last year from R6/9 (part) L6/36 to R6/9 (part) L6/6 (part). She is over 14 years and has left school. The two remaining cases have been on daily treatment and have attended well. One case has improved very much, her visual acuity has improved from R6/24 L6/24 to R6/18 L6/24. She has been sent for refraction. The other case improved somewhat during the year but developed pannus in the left eye last November. Her visual acuity is poor, R6/18 (part) L Fingers.

The two new cases recorded this year have attended well for treatment and are making satisfactory progress. One was a very mild case and now requires only prophylactic treatment once a month. Her visual acuity is very good, R6/6 (part) L 6/6 (part). The other case (which had been very neglected) was suffering from pannus when seen last January, this has now cleared up and her visual acuity has improved from R6/36 L3/60 to R6/24 L6/24. She has old diffuse nebulae.

School Meals.

A mid-day meal is given in the following schools:—

Angel Guardian, Mayfield; the Cathedral; Central District; Christian Brothers, Blarney Street; Presentation Brothers, Greenmount; South Presentation Monastery; St. Joseph's Presentation Monastery; North Presentation Convent Senior Girls'; North Presentation Convent Infants'; South Presentation Convent Infant and Senior Girls'; South Presentation Convent Infant Boys'; St. Marie's of the Isle; St. Vincent's Convent; St. Nicholas' Girls', Blackpool; St. Nicholas' Boys', Blackpool; Strawberry Hill Girls'; Strawberry Hill, Boys'; St. Francis' Girls'; St. Francis' Boys'; SS. Peter and Paul's Senior Girls'; SS. Peter and Paul's Infant Girls'; SS. Peter and Paul's Infant Boys'; St. Patrick's Senior Girls.; St. Patrick's Senior Boys'; St. Patrick's Infants'; St. Mary's, Eason's Hill; St. Mary's of the Rock and Clochar Chriost an Rí.

The grant for the meal was £2,100 and the number of children catered for 3,969.

The meal, as a rule, consists of bread and jam or butter or a currant bun with a cup of cocoa. Milk instead of cocoa is given in ten schools, but in the majority of these it is not given on all school days owing to the inadequacy of the grant. In two other schools, milk in the summer and cocoa in the winter months is given in one case ; milk to the Sixth Standard pupils and cocoa to the remaining pupils is given in the other case.

Breakfast, consisting of tea or cocoa with bread and butter was given to 20 and 90 pupils of St. Vincent's and the North Presentation Convent Schools respectively. Dinner, consisting of meat soup and bread or cocoa and bread and butter (on Fridays) was given to 90 pupils of the latter school. These meals were supplied at the Committees' expense.

Fresh Air Holidays for Children.

The good work of the Committee of the Cork Children's Fresh Air Fund continues, many debilitated children being sent on a fortnight's holiday to the seaside or country.

Review of General Working of the Scheme.

The School Clinic and Offices were transferred from Tuckey Street to the City Hall on the 30th June and a Dental Clinic was opened in the City Hall on the 1st October. The services of the two part-time Dentists, who had been treating the children at the Dental Hospital, were retained, pending the appointment of a whole-time Dentist. The Dentists work in three-hourly sessions, each doing four sessions per week. One session per week is devoted to extractions under general anaesthesia and nine cases are treated at each session. This should result in a material increase in the amount of dental work done yearly as the maximum number of general anaesthetic cases treated per session at the Dental Hospital ranged from six to seven. The services of a Nurse (who has been temporarily appointed) should markedly expedite dental treatment in future.

The School Clinic has been well attended, the total number of attendances for the year being 8,552.

The Nurses and Clerk have worked efficiently and conscientiously ; to them and to the Teachers, for their kind co-operation, I desire to express my thanks.

Hygiene of Schools.

A report on each school, as it was visited during the year, was made to the Medical Superintendent Officer of Health.

Unsatisfactory cloakroom accommodation and defective heating (which I mentioned last year as being the most common defects met with) have been ameliorated in one or two schools.

The following improvements were made during the year :—

New Buildings—A new school for the pupils of St. Patrick's Senior Boys was built in 1937 but had not been completed when I visited it last year. Two new schools—Clochar Chriost an Rí and Mainistir Chriost an Rí—were built at Turner's Cross. The three schools are

ideally situated, being well removed from high buildings and open to the sun. In this respect they are a striking contrast to many of the old schools in the City, which are in proximity to high buildings and with much of the eastern horizon blocked out. All the buildings are one storey—St. Patrick's is built on the pavilion plan with the class rooms grouped round a central hall; the class rooms of the other two schools open off well lighted, ventilated and heated corridors. All class rooms are central heated and are well ventilated and lighted. The *even* lighting of the rooms is a feature one cannot fail to contrast with the dark corners of many class rooms in the older schools. Other features which contrast strongly with those of the older schools are the spacious sunny playgrounds and the well lighted, ventilated and heated cloakrooms. The sanitary arrangements are modern and adequate; the toilets in Clochar Chroist an Rí are indoor and in Mainistir Chroist an Rí they adjoin the main building from which they can be approached by a covered passage. The covered shelter of the latter school can also be approached by this passage —this is a decided advantage in wet weather. Both St. Patrick's and Clochar Chroist an Rí have a large assembly hall which is very necessary for many common school purposes and has a psychological benefit in fostering an *espirit de corps*. The buildings are suitably and artistically painted and are equipped with modern furniture—in short, they fulfil the requirements for instruction with the minimum of fatigue.

Two new class-rooms, which are well equipped with modern furniture, were built for the pupils of the North Presentation Senior Girls' National School, also a modern cloakroom. The three rooms are well lighted and ventilated and are central heated. The central heating boiler was enlarged to ensure adequate heating of these rooms. A new playground (50 feet x 29 feet), a covered shelter with seats and an out-office, with four modern water closets and a lavatory basin, were also constructed.

Extra class room, cloakroom and playground accommodation was provided for the pupils of St. Patrick's Senior Girls' National School. Three class rooms of the school previously occupied by St. Patrick's Senior Boys were reconstructed and renovated to accommodate the pupils of the Senior Standard Girls. Another class room was converted into a cloakroom. The old sanitary arrangements were replaced by six modern water closets and a lavatory basin.

Painting and Distempering of School Premises:—The entire interior of St. Ann's Shandon, Presentation Brothers Greenmount, Central District and St. Finbarr's, Dean Street. Four class rooms, porch and staircase of the North Presentation Convent Infants. Two class rooms, corridor and cloakrooms of the North Presentation Convent Senior Girls. Three class rooms and entrance hall of St. Mary's, Eason's Hill. The entrance hall, cloakroom and doors of Summerhill. The walls, seats and covered shelter of the North Presentation Convent Infants' and Senior Girls' playgrounds. The out-offices of St. Patrick's Infants, North Presentation Convent Infants' and Senior Girls', St. Ann's Shandon and Summerhill.

Division of class rooms by wooden and glass partitions:—Three rooms of Christian Brothers, Blarney Street and one of Presentation Brothers, Greenmount.

Heating :—The heating of all class rooms of an Mhodh-Scoil supplemented by gas fires or gas radiators.

Cloakrooms :—A metal stand erected in each of three cloakrooms of the North Presentation Convent Senior Girls'.

Playgrounds :—St. Marie's of the Isle playground extended, part of St. Finbarr's, Dean Street, playground tar-macadamed.

Modern Desks Procured :—North Presentation Convent Infants' and Senior Girls' and St. Patrick's Senior Girls'.

Repairs :—New ceilings in four class rooms of the North Presentation Convent Infants.' Repairs to floors and doors of St. Patrick's Infants' and to the woodwork of one class room and to one lavatory basin of an Mhodh-Scoil.

Table 91.—Floor and Cubic Space per Pupil in Average Attendance.

NATIONAL SCHOOL	Average attendance	Sq. feet per pupil in average attendance	Cb. feet per pupil in average attendance
Angel Guardian, Mayfield	125.9	8.8	123.0
St. Patrick's Infants'	255.3	9.4	165.6
St. Mary's, Eason's Hill	302.4	9.6	114.3
The Cathedral	392.1	10.3	121.4
St. Nicholas' Boys' Blackpool	433.8	10.3	141.9
North Presentation Convent, Infants'	582.6	10.4	171.9
St. Mary's of the Rock	293.6	10.7	181.4
St. Marie's of the Isle	1,176.0	11.2	182.5
Bun Scoil Gobnatan	262.0	11.3	338.5
St. Nicholas' Girls,' Blackpool	296.3	11.4	163.3
Clochar Chriost an Rí	387.5	11.4	140.6
St. Francis' Boys	172.5	11.9	136.4
South Presentation Convent, Infant Boys'	187.9	12.0	202.3
North Monastery	639.4	12.1	197.3
Scoil Neasain Naomhtha	443.0	12.2	160.7
St. Vincent's Convent	1,348.5	12.2	179.3
Presentation Brothers, Greenmount	519.6	12.5	269.4
South Presentation Monastery	479.2	12.8	193.3
Strawberry Hill, Girls'	133.4	12.9	153.1
SS. Peter and Paul's Infant Girls'	149.9	12.9	193.1
St. Joseph's Monastery, Mardyke	377.4	12.9	183.5
Strawberry Hill, Boys'	124.8	13.0	155.6
North Presentation Convent Senior Girls'	666.7	13.2	206.1
Christian Brothers, Blarney Street	406.0	13.6	231.1
SS. Peter & Paul's Senior Girls'	141.9	13.8	414.0
South Presentation Convent Infant and Senior Girls'	1,231.2	14.3	157.7
SS. Peter and Paul's Infant Boys'	136.7	14.3	215.6
St. Patrick's Senior Boys'	231.6	14.9	193.2
St. Francis' Girls'	141.9	15.5	186.0
St. Patrick's Senior Girls	197.6	16.0	285.1
Mainistir Chriost an Rí	237.3	16.8	201.6
Ard Scoil Gobnatan	150.3	18.0	538.9
An Mhodh-Scoil	149.9	19.1	574.4
St. Mary's Shandon	22.2	60.5	967.2
St. Ann's Shandon	22.3	47.1	753.4
Scoil Ghaedhealac na mBuachailli	78.0	23.9	716.9
St. Finbarr's, Dean Street	41.6	37.5	450.0
St. Luke's	37.2	58.5	1,092.4
Central District	49.6	63.3	1,013,2
Summerhill	33.2	65.1	1,301.2
St. Nicholas', Cove Street	54.4	70.2	926.2

Appendix I.

OPERATION OF THE SCHEME FOR THE TREATMENT OF VENEREAL DISEASES.

Table 92—Record of Work done in the V.D. Treatment Centre

	Cork City		Cork County		Other Districts		Total		Total Male and Female Cases
	M.	F.	M.	F.	M.	F.	M.	F.	
New Cases (1st Time)									
Syphilis	7	8	8	3	3	–	18	11	29
Soft Chancre	–	–	–	–	–	–	–	–	–
Gonorrhoea	19	5	11	1	3	3	33	9	42
Not V.D.	11	4	10	4	5	–	26	8	34
Total	37	17	29	8	11	3	77	28	105
Total Attendances :—									
Syphilis	458	138	153	82	35	–	646	220	866
Soft Chancre	–	–	–	–	–	–	–	–	–
Gonorrhoea	536	80	248	4	13	19	797	103	900
Not V.D.	23	6	13	9	7	–	43	15	58
Total	1017	224	414	95	55	19	1486	338	1824
Cured :—									
Syphilis	–	–	–	–	–	–	–	–	–
Soft Chancre	–	–	–	–	–	–	–	–	–
Gonorrhoea	22	–	16	–	–	1	38	1	39
Total	22	–	16	–	–	1	38	1	39
Pathological Exams. :—									
Wassermann	30	6	19	9	1	–	50	15	65
Gonococci	36	9	14	1	1	1	51	11	62
Kahn	30	6	19	9	1	–	50	15	65
Dark Ground	1	–	1	–	–	–	2	–	2
Total	97	21	53	19	3	1	153	41	194
Therapy :—									
Stabilarsan	167	87	84	57	16	–	267	144	411
Bismostab	202	30	64	16	17	–	283	46	329
Irrigations	316	–	167	–	5	–	488	–	488
Mercury and Iodides	43	–	–	–	–	–	43	–	43
Vaccines, M. & B. 693....	196	71	132	2	10	18	318	91	409
Total	904	188	447	75	48	18	1399	281	1680

Appendix II.

OPERATION OF THE COUNTY BOROUGH SCHEME FOR THE WELFARE OF THE BLIND.

The following are the terms of the Scheme drafted for this purpose and now in operation within the Borough :—

In this scheme the term " Blind Person " shall mean any inhabitant of the County Borough who is so blind as to be either unable to perform any work for which eyesight is essential, or unable to continue his or her ordinary occupation ; the term " The Corporation " shall mean the Lord Mayor, Aldermen and Burgesses of the County Borough of Cork, acting by the City Manager ; the term " The Minister " shall mean the Minister for Local Government and Public Health.

2. The Corporation will establish and maintain a Register in which shall be entered the name and address, age, sex, religion and other necessary particulars of every blind person who shall produce a certificate from a recognised Ophthalmic Surgeon that the acuity of vision of such person (refractive error being corrected) is below 1/20th normal (3/60th Snellen), or that such person is so blind as to be unable to continue his or her ordinary occupation. Any person between the ages of 30 and 70 may, however, be registered without producing such certificate on furnishing evidence of being in receipt of a pension in pursuance of Section 6 of the Old Age Pensions Act, 1932. The Register shall be kept written up-to-date, and shall be revised annually in the month of January. The Corporation shall be empowered to pay reasonable fees to Ophthalmic Surgeons for certifying in cases of necessitious persons.

3. Arrangements will be made by the Corporation with the Authorities of one or more of the Institutions for the Blind mentioned in the Schedule hereto on such terms as may be approved by the Minister for the following purposes :—

(a) the education or industrial training of suitable blind persons between the ages of five years and thirty years ;

(b) the employment in workshops for the Blind of blind persons suitable for such employment, their maintenance in a Hostel, and the augmentation of their wages ;

(c) the maintenance in Homes of blind persons who, owing to age or infirmity, are incapable of work.

4. The Corporation may in cases of unemployed and necessitous blind persons ineligible for education or industrial training under Article

3 (a) of this Scheme and living in their own homes or in lodgings, grant assistance to such persons in accordance with the following scale:—

Classification of Blind Persons	Amount of weekly allowance
(a) Blind person over 15 years and under 30 years of age	12s. 6d.
(b) Blind person 30 years of age and upwards	6s. 0d. (with pension)
(c) Married man under 30 years of age with wife dependent on him	19s. 0d.
(d) Married man 30 years of age and upwards with wife dependent on him	12s. 0d. (with pension)
(e) Additional allowance for each child	2s. 6d.

In considering the grant of allowances on this scale to the classes of blind persons at (a) and (c) above, the Corporation will not take into account casual earnings of any such person where they are satisfied that such earnings do not exceed six shillings per week.

5. Nothing in this Scheme is to be construed as giving blind persons irrespective of their means or conduct, a right absolute to assistance The Corporation will not grant an allowance under Article 4 above to any blind person under 30 years of age who is capable of instruction and who declines without a satisfactory reason to take advantage of the facilities for education, training or employment under the Scheme, or who is by conduct or otherwise deemed unsuitable for assistance. No habitual mendicant shall be granted an allowance under the Scheme unless the practice of mendicancy is discontinued. No person shall be eligible to receive assistance under this Scheme who shall not have been resident within the County Borough for two years previous to date of application for assistance.

6. The Corporation may incur such expenditure in the execution of this Scheme as the Minister may from time to time approve.

7. This Scheme shall come into operation on the 1st October, 1932, and shall continue for a period of three years, but may during the period with the consent of the Minister be modified, extended or revoked by the Corporation, and with the like consent may be continued for such further time as may be deemed necessary. Any question, dispute or difference arising in connection with the interpretation of this Scheme shall be determined by the Minister whose decision shall be final.

SCHEDULE

Institutions for the Blind Approved by the Minister	Class of Blind Persons Received
1. St. Mary's Institution for Female Blind, Merrion, County Dublin	Females, also boys up to 7 years of age
2. St. Joseph's Asylum for Male Blind, Drumcondra, Dublin	Males
3. Richmond National Institution for Industrious Blind, 41 Upper O'Connell Street, Dublin	Males
4. Cork County and City Asylum for the Blind, Infirmary Road, Cork	Males and Females

The number of persons receiving weekly allowances from the Corporation during the year was 170, and the disbursements under the heading amounted to £3,216 17s. 0d. 25 applications were received for allowances. 3 blind persons were sent during the year for industrial training. Other disbursements amounted to £43 11s. 0d. (examinations and other expenses). In addition to the above-mentioned cases, there were 13 (7 females and 6 males) in the County and City Asylum for the blind who were not maintained by direct grants from the Corporation but indirectly through the Board of Public Assistance. So far as can be ascertained, the total number of persons receiving state pensions for blindness was 219, of whom 56 are totally blind.

The following note is contributed by the Hon. Secretary of the local branch of the National Council for the Blind of Ireland.

Home Teaching for the Blind.

Under the National Council for the Blind, this very essential service has been inaugurated in Cork City, to which the Corporation has granted a small annual contribution towards the expenses incurred by employing trained and qualified Home Visitors and Teachers.

The work of the Home Visitor is varied and broad, embracing social as well as mental instruction. She must help the blind to become active members in their homes, teach them to read embossed type, various handicrafts, such as knitting and rugmaking, and to bring an interest and hope into their otherwise hopeless lives.

The Home Visitor can help to prevent blindness in children, who often, through parental ignorance and negligence, or want of interest, lose their sight, which under proper care and supervision can be cured, by seeing that they are provided with glasses where necessary and sent for treatment. She also gives her assistance and advice over pension applications, appeals and better accommodation.

Wireless sets are distributed on loan where most required, entertainments organised and free seats at musical shows secured.

Voluntary visitors also give their services to read and spend some time talking to the lonely blind, who greatly appreciate these visits.

Classes are held weekly for instruction in basket making, chair-caning and other forms of handicraft. The finished articles are presented for sale only if up to standard—no inferior goods labelled "Made by the Blind" are passed for sale. Efficiency is the definite aim.

The Home Teacher becomes a real friend of the Blind, who turn to her in all their difficulties, knowing that they will obtain help and encouragement to become as useful and important as their sighted brothers and sisters.

Suitable cases are urged to enter institutions for the blind and arrangements made for this purpose.

The Home Teacher has office hours daily where any blind or defective sighted person can get in touch with her and make enquiries. Over

the Home Visitor is an Executive Council who meet monthly, receive the reports of the Home Visitor, deal with various cases, arrange the financial side of the work and follow closely and with interest the progress which is being made.

SUMMARY.

Number of city cases on Register on 31st December, 1938	272
Visits paid to the Blind	1,850
Interviewed at Office, City Hall	436
Number of Braille readers	14
Number of Moon readers	3
Number learning handicrafts at Men's weekly classes	10
Number of Home Workers whose work is of saleable standard	24
Number of bed-ridden and aged blind visited and helped in various ways	22
Number sent to Convalescent Home	1
Number sent to Royal Normal College, London	1
Number helped to obtain spectacles or artificial eyes	11
Number given special relief during illness	21
Number given clothing and blankets	81
Number given various Christmas gifts	57
Number given Wireless Sets on loan	54
Number given gramophone and records	3
Help given over dentures	5

Appendix III.

ROADS AND SEWERS.

WORK COMPLETED DURING 1938.

Concrete Roads—	No. Sq. Yards
Blarney Street	5,158
Catherine Street	333
Stephen Street	1,193
Eason's Hill	410
Upper John Street	800
Mulgrave Road	1,721
John Redmond Street	1,258
Harpur's Lane	728
Victoria Quay	1,943
Fort Street	1,048
Vicar Street	400
Dean Street	1,045
Faulkener's Lane	367
Connell Street	567
High Street	207
Morgan Street	475
Lavitt's Quay	3,734
Sullivan's Quay, Frenche's Quay	4,333
Victoria Quay	4,605
Mill Road	670
Boyce's Street	1,310
Hibernian Road (Part)	4,600
Phi'ip's Lane	375
Grafton Street	340
Mahoney's Avenue	1,310
York Street	733
Millard Street	506
Hanover Street	630
Industry Street	601
Douglas Street	152
Blackmore Lane	270
Albert Road	510
Lower John Street	695

Mastic Asphalt Roads—

	No. Sq. Yards
Oliver Plunkett Street	3,928
Winthrop Street	615
Princes Street	602
Merchant Street	897
Maylor Street	1,174
Lavitt's Quay	1,768
Pine Street	1,133
Clontarf Street	2,354
Southern Road	3,722

Streets and Highways—

No. of miles of Streets and Highways	76.25 Miles
	Sq. Yards
Total area of Road Surfaces	640,460
Area of Water Bound Macadam	1,000
Area of Bituminous Macadam	57,787
Area of Block Paving (Stone)	12,646
Area of Asphalt	303,163
Area of Concrete	264,864
Area of Block Paving (Wood)	1,000

STREET CLEANING AND DOMESTIC SCAVENGING.

(a) **Mechanical Street Cleaning (Karrier Sweeper)**

Total No. of miles travelled per annum	5,000
Surface Sweepings Collected and Disposed of	1,820 Tons
Average cost of collection and disposal	5/7 Ton

(b) **Night Service** (Mechanical Washer and Sweeper)

Area washed per night	50,000 sq. yards
Cost per 1,000 sq. yards per night	1/–

(c) **Scavenging and Surface Sweepings** (hand)

Number of Electric Trucks	13
Average Number of Miles travelled per annum	58,500
Surface Sweepings and Domestic Refuse collected and disposed of per annum	43,000 tons
Average cost of collection and disposal	11/9½

SEWERS.

Dimensions	Location	Description	Length in Yards
12″	Winthrop Street	Glazed Stoneware	100
12″	Old Youghal Road	Glazed Stoneware	120

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