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COUNTY BOROUGH OF BIRKENHEAD.

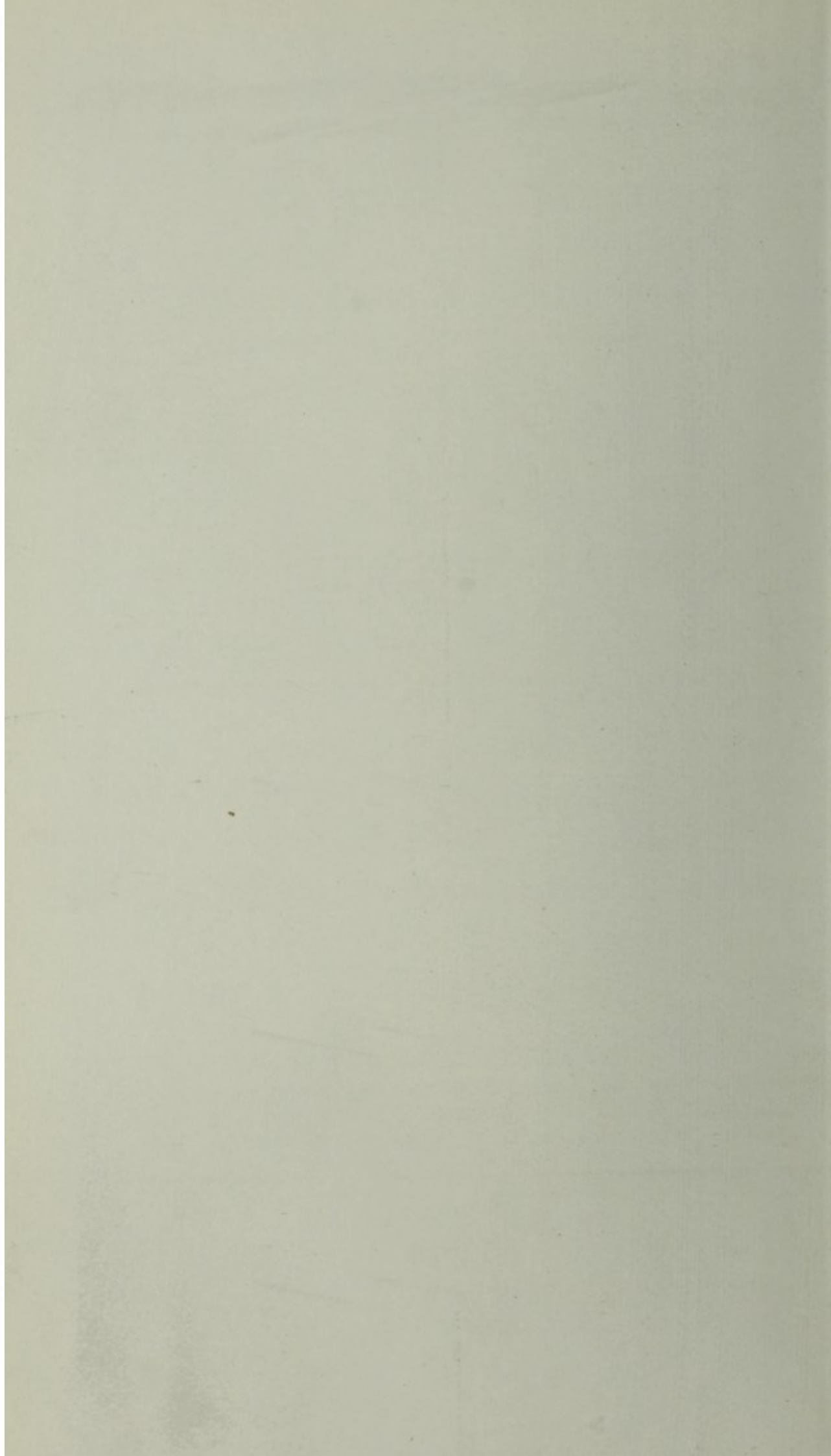


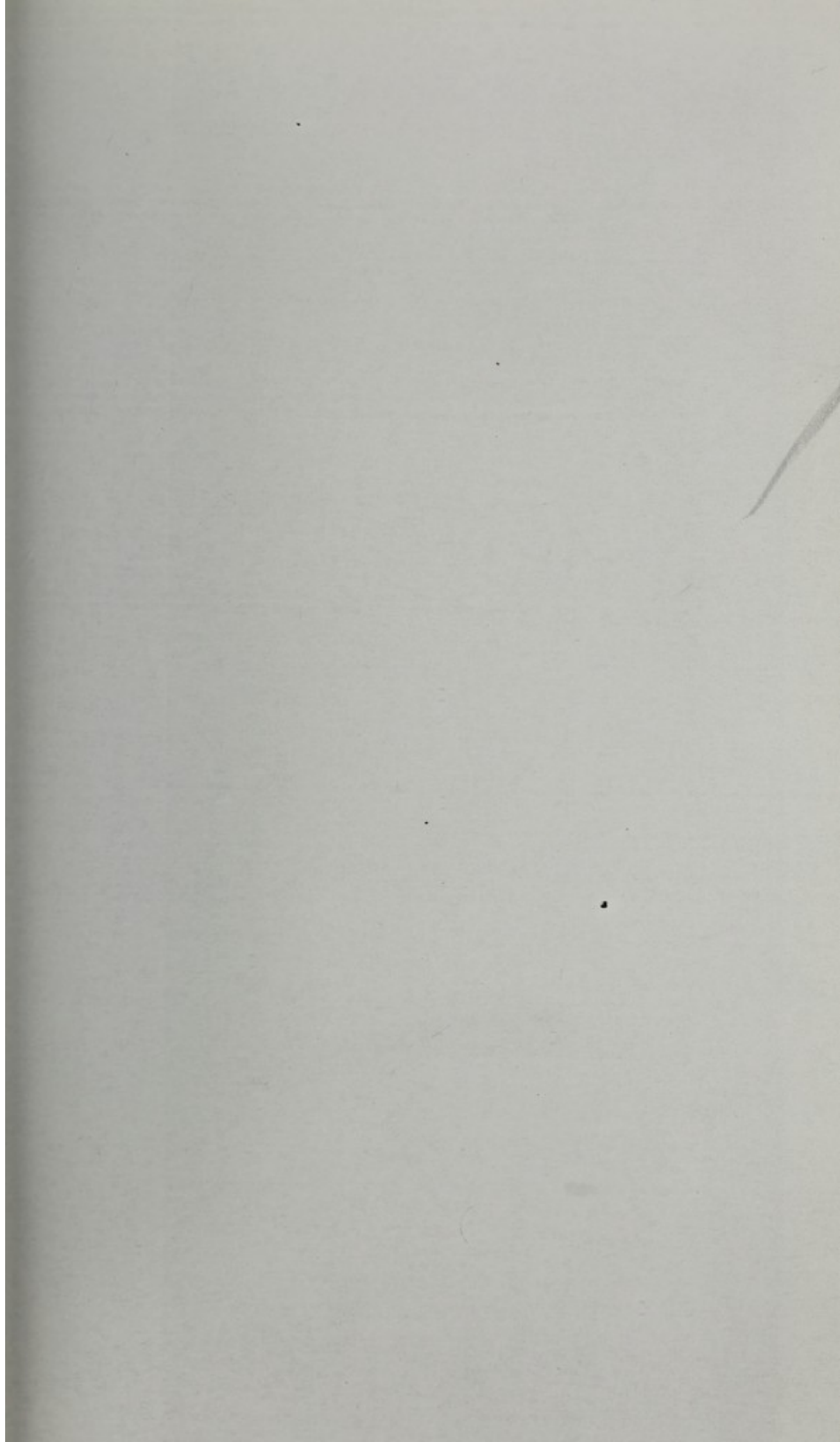
ANNUAL REPORT
OF THE
MEDICAL OFFICER
FOR
1922.

D. MORLEY MATHIESON, M.A., M.D., (Edin.), Ch.B., D.P.H.

Medical Officer of Health, and
Principal Medical Officer for the Municipal Tuberculosis, Mental Deficiency,
Maternity and Child Welfare, &c., Schemes, and for the School Medical Service.







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SHORT STATISTICAL SUMMARY.

1922.

Area of Borough	3,909 acres, or a little over 6 square miles
Estimated population (at midsummer)	149,200
Number of persons per acre (density of population)	38.1
Estimated number of houses in Borough	27,233
Number of inhabited houses at time of census, 1921*	26,630
Rateable value	£862,377
Birth-rate per thousand of the population	23.1
Death-rate ,, ,,	13.6
Average death-rate for last ten years	14.3
Phthisis death-rate per thousand of the population.....	0.94
Infantile mortality rate (per 1,000 births)	95
Percentage of total deaths which were uncertified	0.09
Average number of children in elementary schools.....	24,493
Total children medically inspected during year	9,737

PREFACE.

One of the most noteworthy public health events in the year under review was the outbreak of typhus fever which occurred in the Borough in March-April (see pp. 43-52). This disease (which has no connection whatever with the disease known as " typhoid " or " enteric " fever) had been for some time epidemic on the continent of Europe, notably in Poland and Russia, where large territories had been invaded and many thousands of deaths had occurred.

The grave risk of the importation of the disease via the great ports into this country, in view of the constant movement of refugees from infected areas, had been recognised ; and its eventual appearance, though anticipated, was a matter of serious concern. Fortunately, it was found possible to circumscribe the outbreak ; the total number of persons infected was 12, of whom 3 died ; and there was no spread from this area to other parts of the country.

The most important general agencies working to the detriment of the public health during the year have been unemployment, (referred to on page 22), and inadequate housing accommodation (page 58).

The lack of employment in the town meant, for thousands of workers and for their families, inadequate food, clothing, warmth, and comfort, and—most devitalising of all—mental depression.

The housing shortage has produced in Birkenhead (as in many industrial towns) an impasse. Incurably unhealthy dwellings, which the Health Authority wish to see emptied of their tenants, closed, and demolished, cannot be dealt with until alternative quarters are made available. Meantime the population increases, and congestion grows and will continue to grow until action is taken to wipe off arrears in house production.

The infantile mortality rate, though equal to the second lowest on record, was above that of the previous year ; the difference being due chiefly to an increase in bronchitis and pneumonia (see page 6) ; the death-rate for the year was 13.6, as against 11.6 in 1921. The Registrar-General's estimate of the mid-year population of the Borough was 149,200.

The results obtained at the ante-natal clinic during the year (page 68) have been highly satisfactory. A review of the first complete year's working at Thingwall Sanatorium will be found on page 35 *et seq.*

The Town Council, at a meeting held on the 6th April, 1922, adopted a scheme, prepared by the Health Committee, under Section 2 of the Blind Persons Act, 1920, to become operative on the 1st June, 1922. A provisional agreement was entered into with the Liverpool Workshops for the Blind and the Home Teaching Society for the Outdoor Blind, under which these societies engaged to carry out certain duties.

A register of blind persons resident in the Borough was compiled and at the end of the year there were 126 names entered on this register (71 males and 55 females). The Health Nurses on the staff of the department paid periodical visits to the homes of all blind persons.

Record has regretfully to be made of the death during the year of a much-valued member of the staff of the department—Mr. Dawson. For over fifty years Mr. Dawson had been in the Corporation service, and during the last thirty-three of these he had held the post of Chief Sanitary Inspector. He was a loyal, assiduous, and high-minded official, and had personal qualities which endeared him to all who had the privilege of associating with him.

D.M.M.

WEATHER.

METEOROLOGICAL RESULTS.

The mean barometer reading for the whole year was 29.917 inches, as compared with a mean of 29.924 for the past 55 years.

The number of wet days in 1922 was 177.

The total amount of rainfall at Bidston was 26.700 inches, as compared with an average annual rainfall for the past 56 years of 28.387 inches.

The mean temperature for the year was 48.2° Fahrenheit.

In Tables A 1 and A 2 monthly and weekly results are set out; those in Table A 2 being for the 52 weeks ending December 30th, 1922.

TABLE A 1.

Meteorological observations during 1922. Monthly results.

1922	Mean Temperature	Mean Barometer	Rainfall—1 ft above ground
	° F.	INCHES	INCHES
January	39.4	29.752	3.581
February	40.2	29.786	2.935
March	40.8	29.878	1.513
April	42.8	29.754	1.884
May	54.6	30.069	1.393
June	56.4	29.979	1.546
July	56.4	29.861	3.565
August	56.5	29.964	3.113
September	54.5	29.958	2.297
October	47.9	30.094	0.314
November	45.0	30.170	1.626
December	43.8	29.742	2.933

TABLE A 2.
Meteorological observations during 1922. Weekly results.

Weeks	Barometer means reduced to sea level & to 32°F.	Means of Evaporation.	Thermometer means.	Rainfall.		Average percent of cloud to clear sky.	Mean hourly horizontal motion of air in miles	Percent of time wind blew from S., SW. W. & NW.
				Hours.	Inches.			
1	29.913	40.88	42.34	25.6	0.893	75.7	28.3	84.50
2	30.042	38.72	40.91	10.9	0.581	52.8	21.4	70.80
3	29.468	35.55	37.17	30.3	1.080	71.4	16.9	42.80
4	29.764	35.40	36.44	13.9	0.599	78.5	22.4	23.80
5	29.393	39.15	40.31	45.3	1.959	74.2	16.5	36.90
6	29.807	37.90	39.57	26.0	0.491	84.2	14.7	76.10
7	29.601	48.77	46.34	19.2	0.566	64.2	20.2	92.80
8	30.244	31.88	33.22	—	—	61.4	15.1	9.52
9	29.690	48.48	45.02	15.5	0.641	77.1	18.7	88.90
10	29.617	40.51	43.25	5.6	0.355	77.1	19.8	77.97
11	30.291	39.08	41.87	—	—	62.8	12.1	10.70
12	29.888	34.41	36.90	17.7	0.535	72.8	12.2	23.20
13	29.743	35.15	38.08	6.3	0.329	77.1	13.3	41.70
1st Qr.	29.804	46.60	40.10	216.3	8.029	71.4	17.8	52.28
14	29.659	36.40	39.24	9.2	0.166	64.2	10.3	48.20
15	29.502	41.24	44.74	21.5	0.671	72.8	15.5	38.90
16	30.214	40.77	43.94	6.8	0.174	52.8	12.4	70.80
17	29.613	40.71	43.61	14.4	0.720	60.0	20.8	77.30
18	29.874	44.24	47.87	6.7	0.241	62.8	16.9	87.50
19	30.200	45.94	49.57	—	—	54.2	10.2	54.10
20	29.935	51.27	55.07	17.3	0.967	77.1	16.2	80.90
21	30.084	54.37	58.18	5.7	0.338	51.4	9.4	79.10
22	30.186	55.11	62.02	0.5	0.011	40.0	9.0	71.40
23	30.043	53.48	59.74	—	—	40.0	10.4	69.60
24	30.103	50.45	54.98	6.4	0.230	47.1	14.9	65.40
25	30.022	51.85	55.30	19.0	0.727	90.0	18.9	98.80
26	29.712	50.55	54.01	22.6	0.625	85.7	22.8	95.20
2nd Qr.	29.934	47.41	51.40	130.1	4.870	61.3	14.4	72.09
27	29.635	51.04	54.67	40.5	2.200	76.1	18.2	76.70
28	31.180	51.70	55.77	11.6	0.421	60.0	12.6	85.70
29	29.925	53.45	57.04	9.9	0.356	82.8	16.0	94.60
30	30.004	53.41	55.95	14.0	0.541	68.5	12.0	69.60
31	29.974	53.48	57.62	4.2	0.072	70.0	14.1	79.70
32	29.913	51.44	55.12	24.4	1.099	75.7	15.1	22.02
33	29.996	53.15	57.02	6.1	0.360	60.0	18.0	*
34	29.906	52.90	56.78	7.2	0.408	58.5	18.2	94.60
35	29.697	53.01	55.87	22.8	1.445	81.4	9.9	63.60
36	30.312	52.91	55.78	—	—	67.1	6.9	47.00
37	29.707	50.21	53.40	21.9	0.651	72.8	13.8	75.00
38	30.465	51.81	55.02	13.2	0.574	72.8	20.5	86.90
39	29.808	50.77	53.47	24.8	0.801	74.2	17.1	34.50
3rd Qr.	30.040	52.25	55.65	200.6	8.928	70.7	14.8	63.84
40	30.049	50.48	53.42	4.0	0.198	65.7	9.2	67.80
41	30.145	46.48	49.25	3.7	0.040	58.5	11.6	9.50
42	30.152	44.87	49.12	—	—	41.4	18.9	—
43	30.125	39.55	42.78	—	—	65.7	10.4	0.59
44	29.710	38.54	41.60	11.3	0.586	65.7	18.5	58.30
45	29.744	43.82	45.75	25.4	0.970	71.4	17.9	73.10
46	30.562	44.69	46.32	—	—	77.1	11.1	83.90
47	30.466	42.52	44.72	2.1	0.016	71.4	10.8	76.70
48	30.224	43.94	45.51	8.3	0.171	75.7	23.1	87.50
49	30.306	44.11	45.57	3.4	0.042	85.7	19.3	87.50
50	30.096	44.00	46.10	8.7	0.300	88.5	13.2	60.10
51	29.188	39.92	41.74	34.2	1.496	78.5	20.8	76.70
52	29.336	39.58	41.74	17.4	1.054	61.4	20.4	91.00
4th Qr.	30.008	43.27	45.66	118.5	4.873	69.7	15.7	58.74
Year ...	29.946	47.38	48.20	665.5	26.700	68.2	15.6	61.73

*Instrument out of order

POPULATION, BIRTHS, AND DEATHS.

POPULATION.

A full statement showing the growth of the population from 1801 onwards was given in my annual report for 1919.

Population.—The population of the Borough at the time of the 1921 census was 145,592. The estimated mid-year population, 1922, is 149,200

Density of population.—The density of the population of Birkenhead, mid-year, 1922, was 38.1 per acre.

The corresponding ratio of density for the 82 county boroughs of England and Wales (1921 census) was 19.6 persons per acre.

It will be seen that Birkenhead is, relatively to the other county boroughs, a densely populated area. There are indeed few parts of the town which are not built upon, and the need for extension of the Borough acreage is obvious.

Ward- and sex-distribution, &c.—Information regarding the census returns on these subjects is not yet available.

BIRTHS.

Births registered during 1922, and birth-rate.—During the year 3,451 births belonging to the Borough were *registered*. (This total includes 64 Birkenhead births registered in other areas and transferred to Birkenhead, and excludes 92 births belonging to other areas which occurred in Birkenhead and were transferred to the areas concerned. Among the latter are a large number of births which occurred at the Birkenhead Maternity Hospital and the Birkenhead Infirmary.)

This corresponds to a birth-rate of 23.1 per 1,000 of the population.

Birth-rate in recent years.—The birth-rates since 1911 (calculated on population figures not revised in the light of the 1921 census) are as follows:—

1911	28.4	per 1,000
1912	28.2	„
1913	28.7	„
1914	27.3	„
1915	27.4	„
1916	26.9	„
1917	22.4	„
1918	21.1	„
1919	22.5	„
1920	27.7	„
1921	25.8	„
1922	23.1	„

Comparison of birth-rate with rates for country generally.—

	Per 1,000 of population.
England and Wales	20.6
105 Great Towns (including London).....	21.4
155 Other Towns above 20,000 population	20.5
London	21.0
Birkenhead	23.1

Sex-distribution of births.—Of the 3,451 births, 1,751 were males and 1,700 females; a proportion of 1,030: 1,000.

Legitimacy.—Of the 3,451 births registered, 141 were illegitimate; a percentage of 4.0.

Births notified during 1922.—During the year 3,417 births were notified in the Borough under the Notification of Births Acts, 1907 and 1915. Of these, 131 were still-births, leaving a total of 3,286 live births. This total includes births which occurred in the Birkenhead Maternity Hospital, the Birkenhead Infirmary and the Birkenhead Borough Hospital, many of which were transferable to other areas.

The following is an analysis of the above births:—

Births in Public Institutions:—

Maternity Hospital	331	(20 still-births)
Infirmary	144	(8 „)
Borough Hospital	9	(2 „)
Other births (including those in nursing homes):—		
Notified by doctors	294	(11 still-births)
Notified by midwives	2639	(90 „)
	3417	(131 „)

Un-notified births.—The Registrars reported 126 cases of un-notified births. 51 of these were attended by medical practitioners, 59 by certified midwives and doctors, 15 by the Maternity Hospital staff, and 1 by the Birkenhead Infirmary staff.

DEATHS.

Death-rate.—2,044 deaths occurred during the year; the total figure includes 139 deaths of Birkenhead residents which occurred outside the Borough, but excludes 150 deaths of non-residents which occurred in the area. This gives a death-rate of 13.6 per 1,000.

Deaths in recent years.—The death-rates since 1911 are as follows (the rates for 1912-1920 have not been revised in the light of the 1921 census returns):—

1911	16.0 per 1,000
1912	14.7 "
1913	14.9 "
1914	15.6 "
1915	15.6 "
1916	14.2 "
1917	13.3 "
1918	17.6 "
1919	13.7 "
1920	13.3 "
1921	11.6 "
1922	13.6 "

Influenza and its complications were the main contributing factors in the high death-rate of 1918.

Seasonal deaths.—The following gives the deaths for each quarter of the years 1921 and 1922.

	No. of deaths	
	1921	1922
First quarter.....	481	731
Second quarter.....	384	490
Third quarter.....	409	358
Fourth quarter.....	442	465
Totals	1716	2044

Sex-distribution of deaths.—Of the total deaths 1,052 were males and 992 females, a proportion of 1,060: 1,000.

Coroners' inquests.—Coroners' inquests were held regarding 106 deaths—that is, in 5.1 per cent. of the total deaths during the year. There were no deaths due to overlaying during the year.

Uncertified deaths.—In 1922, out of the 2,044 deaths registered, 2 were marked "not certified," that is, 0.09 per cent. The causes of the 2 deaths were entered in accordance with the statements of persons giving information to the registrars, viz.:—

Fatty degeneration of the heart	1
Atelectasis	1

Causes of death.—From the beginning of 1920 the classification of causes of death hitherto employed was abandoned, and the recognised classification contained in the detailed international list was adopted. An analysis on this basis will be found in Tables P 1, P 2, and P 3.

Table P 1 (pages 8 to 17) shows the causes of death in detail, sub-classified according to age.

Table P 2 (page 18) is a condensed form of Table P 1.

Table P 3 (page 19) is similar to Table P 2 but shows a sub-classification according to districts instead of ages.

Infantile mortality.—There were 331 deaths of infants under 1 year old. This corresponds to an infantile mortality rate of 95 per 1,000 births.

There were 15 deaths in illegitimate infants under 1 year old; giving an illegitimate infant mortality rate of 106 per 1,000.

The causes of infant deaths, and the ages at which death occurred, are shown in Table P 4 (page 20).

The infantile mortality rate for the year—95 per 1,000 births—is the second lowest annual rate recorded in the Borough, equalling the rate for 1917. The lowest rate was that recorded last year—75 per 1,000 births. The increased rate for 1922 as compared with that for 1921 was due chiefly to a rise in the number of deaths from respiratory diseases:—

	1921	1922
No. of deaths from		
(a) Bronchitis	12	31
(b) Pneumonia	21	55
(c) Whooping cough	8	19

There was a marked decrease in the deaths from diarrhoea and enteritis in 1922 as compared with 1921: the figures being as follows:—

	1921	1922
No. of deaths from		
Diarrhoea and enteritis	72	29

Deaths from Tuberculosis.—Tuberculosis was responsible for 9 per cent. of all the deaths recorded in the Borough in 1922. The deaths from the disease were as follows:—

Deaths from tuberculosis of the lungs	141
Deaths from other forms of tuberculosis	50
Total	191

This gives a tuberculosis death-rate of 1.28 per 1,000 of the population.

Of the 141 deaths from pulmonary tuberculosis during 1922, 130 occurred in individuals between 15 and 65 years old—that is, of a wage earning age.

This subject is further dealt with in the “Tuberculosis” section of this report.

Deaths from epidemic diseases.—The seven “principal epidemic diseases” caused 138 deaths, as follows:—

Diarrhoea and enteritis (under 2 years)	39
Whooping Cough	52
Measles	31
Scarlet Fever	5
Diphtheria (including membranous croup)	10
“Fever” (enteric, typhus, and simple continued fever)	1
Smallpox	0

This corresponds to a death-rate from all these diseases of 0.92 per 1,000 of the population.

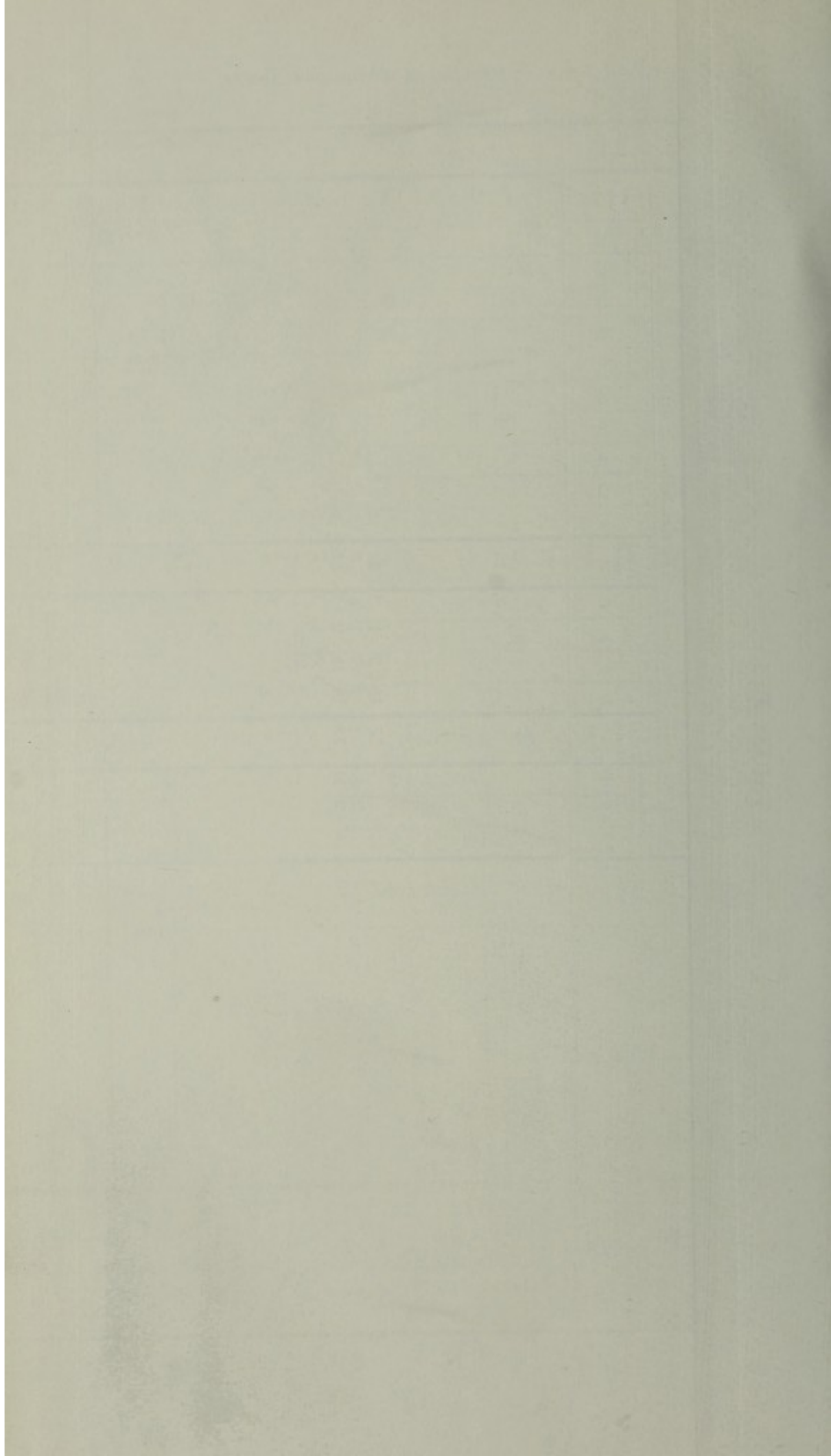
Deaths from other notifiable infectious diseases.—Pneumonia caused, in its various forms, 232 deaths; puerperal fever caused 3; erysipelas caused 2.

Deaths from certain non-notifiable infectious diseases.—Syphilis was returned as the cause of 9 deaths. With the existing system of death registration there is every likelihood that many deaths caused directly or indirectly by this disease are not so recorded in the death certificates.

Comparison of Birkenhead death-rates with those for country generally.—In Table P 5 (page 21) Birkenhead rates are shewn together with those for the country generally. The latter are provisional figures kindly supplied to me by the Registrar-General. Non-civilians are included in the figures for England and Wales, but not for other areas.

Deaths belonging to the County Borough of Birkenhead classified according to the detailed international list of causes, as adapted for use in England and Wales registered during the year ending 31st December, 1922.

[illegible][illegible]



[illegible]

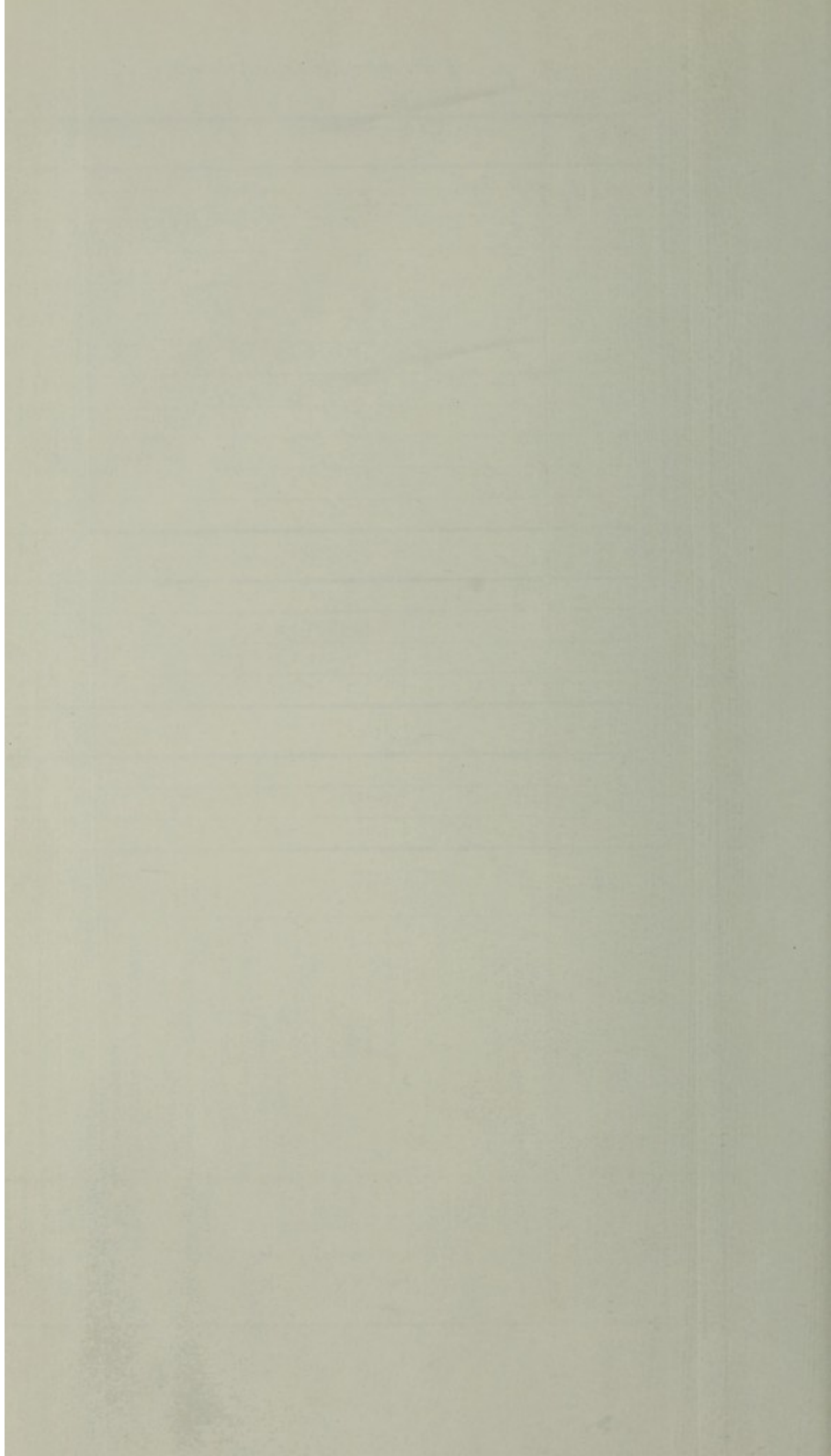
III.—Diseases of the nervous system and of the organs of special sense.

- 60A. Encephalitis lethargica
- 60B. Encephalitis
61. A. Cerebro-spinal fever
- B. Posterior basal meningitis
- C. Meningitis, other forms
62. Locomotor ataxy
63. Other diseases of the spinal chord
64. A. Atrophy
- B. Spongy degeneration
- C. Cerebral congestion

III.—Diseases of the circulatory system.

77. Pericarditis
78. A. Acute myocarditis
- B. Infective endocarditis
- C. Other acute endocarditis
79. A. Valvular disease
- B. Fatty degeneration of the heart
- C. Other organic diseases of the heart
80. Angina pectoris
81. A. Anoxaemia
- B. Arterial sclerosis
- C. Other diseases of arteries
82. A. Cerebral embolism and thrombosis
- B. Other embolism and thrombosis

[illegible]



[illegible]

Population, births and deaths.

V.—Diseases of the digestive system.
99. A. Diseases of the teeth and gums.....
B. Parotid, aphthous stomatitis
C. Periodontitis*
D. Other diseases of the mouth and anus..
100. A. Tonsillitis
B. Ludwig's angina.....
C. Other diseases of the pharynx.....
101. Diseases of oesophagus.....
102. Perforating ulcer of stomach.....7
103. A. Inflammation of stomach.....10
B. Other diseases of stomach.....2
04-105.A. Infective enteritis.....10
B. Diarrhoea (not returned as infective)....35
C. Enteritis " ".....7
D. Gastro enteritis " ".....8
E. Typhoid fever.....22
F. Cholera.....9
G. Ulceration of intestines.....1
H. Duodenal ulcer.....3
I. Dysentery.....4
106. Ankylostomiasis.....
107. Other intestinal parasites.....
108. Appendicitis.....12
109. A. Hernia.....6
B. Intestinal obstruction.....1
110. Other diseases of the intestines.....1
111. Acute yellow atrophy of liver.....4
112. Hydatid of liver.....6
113. A. Cirrhosis of the liver (not returned as alcoholic).....
B. Cholangitis of the liver (returned as alcoholic).....6
C. Other diseases of liver and gall bladder
114. Biliary calculi.....
115. Other diseases of the liver.....1
116. A. Infarction of spleen.....3
B. Other diseases of the spleen.....
117. Peritonitis (cause unstated).....1
118. A. Abdominal abscess, subphrenic abscess...3
B. Other diseases of the digestive system...1

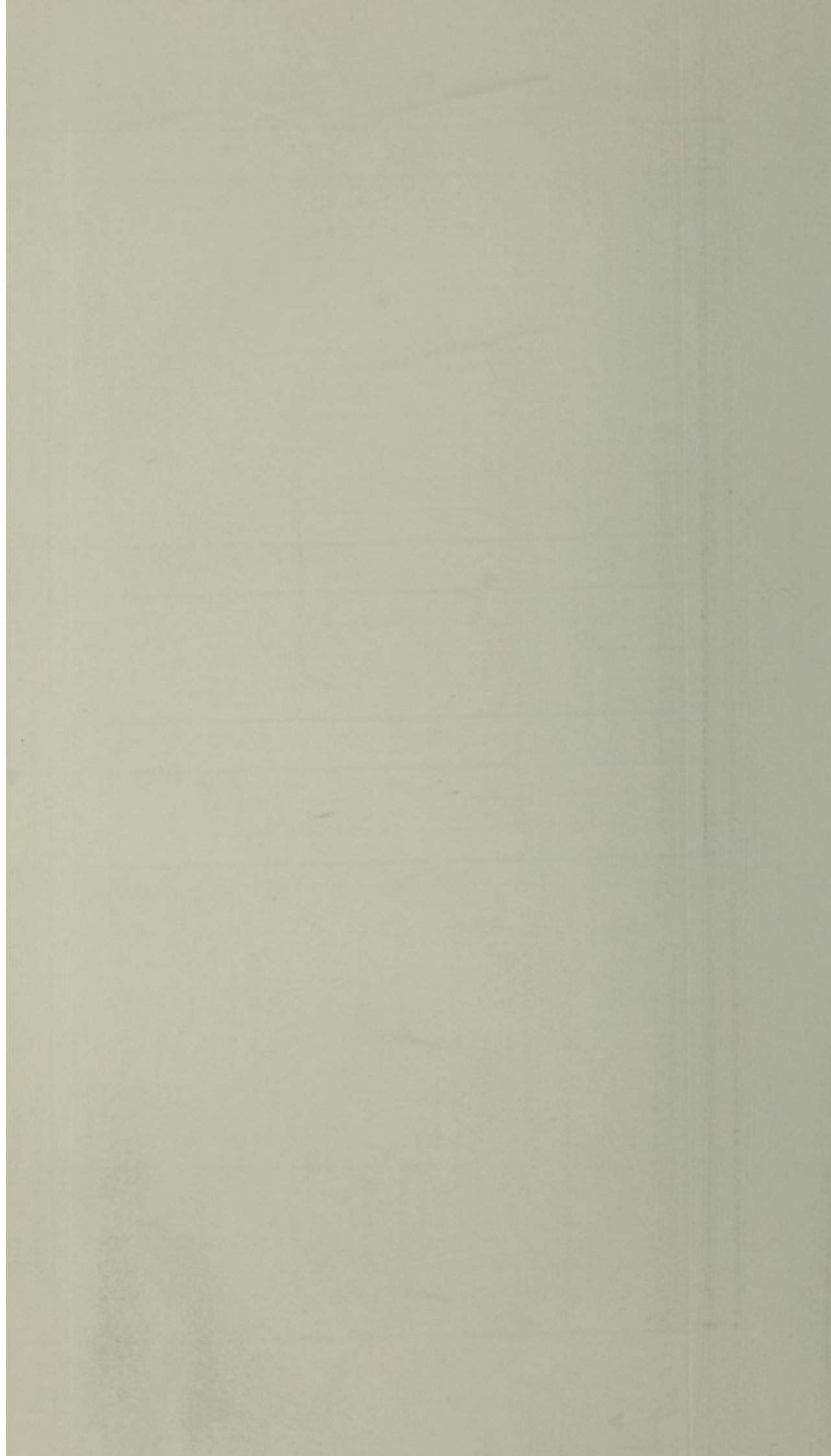


TABLE P 1.—Continued.

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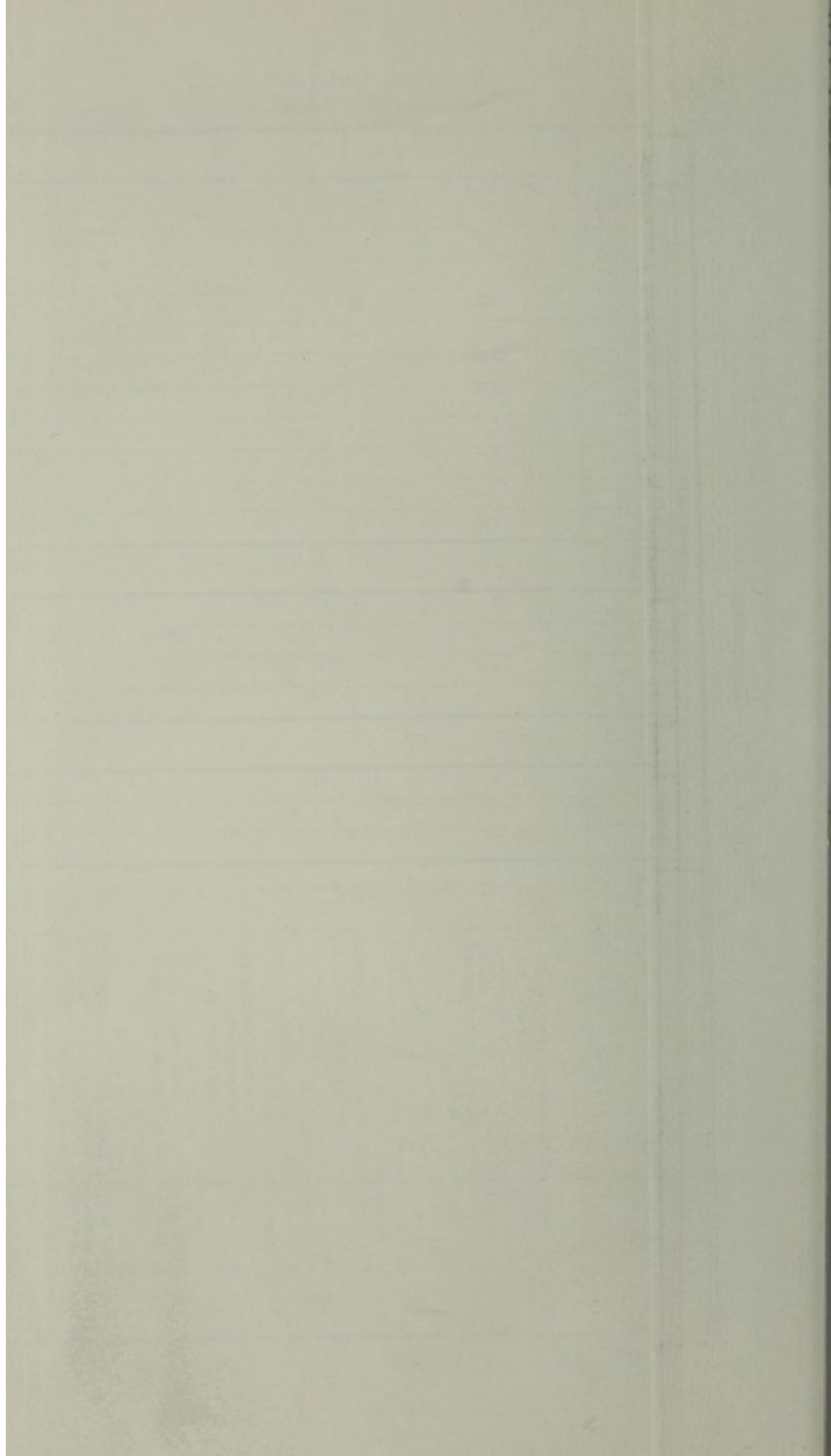


TABLE P 1.—CONTINUED.

Causes of death	All ages	Ages at death																		
		Months		Total under year	1-	2-	3-	4-	Total under 5 years	5-10-	15-	20-	25-	35-	45-	55-	65-	75-	85 and upwards	
0-3	3-6																			
X.—Malformations.																				
150. A. Congenital hydrocephalus	1							1												
B. Phimosis	10							10												
C. Congenital malformation of heart	14							14												
D. Other congenital malformations																				
XI.—Diseases of early infancy.																				
151. A. Premature birth	59							59												
B. Infantile atrophy, debility & marasmus	43							43												
C. Icterus neonatorum	1							1												
D. Sclerema and edema neonatorum																				
E. Want of breast milk																				
152. A. Diseases of umbilicus, &c.	1							1												
B. Atelectasis	7							7												
C. Injuries at birth	3							3												
D. Cyanosis neonatorum																				
153. Lack of care																				
XII.—Old age.																				
154. A. Senile dementia	1																			
B. Senile decay	110																			
XIII.—Affections produced by external causes.																				
155. Suicide by poison	2																			
156. " asphyxia	4																			
157. " hanging or strangulation																				
158. " drowning																				
159. " firearms																				
160. " cutting or piercing instruments																				
161. " jumping from high place																				
162. " crushing																				

163. Other suicides	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
164. Poisoning by food	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
165. Other acute poisonings	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
166. Conflagration	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
167. Burns (conflagrations excepted)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
168. Absorption of deleterious gases (conflagrations excepted)	4	1	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
169. Accidental drowning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
170. Injury by firearms	7	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
171. " cutting or piercing instruments	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
172. " fall	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
173. " in mines and quarries	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
174. " by machines	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
175. " other crushing (vehicles, railways, landslides, &c.)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
176. " animals	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
177. Starvation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
178. Excessive cold	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
179. Effects of heat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
180. Lightning	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
181. Electricity (lightning excepted)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
182. Homicide by firearms	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
183. " cutting or piercing instruments	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
184. " other means	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
185. Fractures (cause not specified)	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
186. Other violence	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
XIV.—Ill-defined causes.																					
187. Dropsy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
188. A. Syncope (aged 1 year and under 70)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
B. Sudden death (not otherwise defined)	20	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
189. A. Heart failure (aged 1 year and under 70)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
B. Atrophy, debility, marasmus (aged 1 year and under 70)	7	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
C. Tetanus	5	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
D. Pyrexia	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
E. Other ill-defined deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
F. Cause not specified	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	2044	185	46100	331	118	56	24	12	541	33	21	53	45	115	158	211	248	315	259	45	109

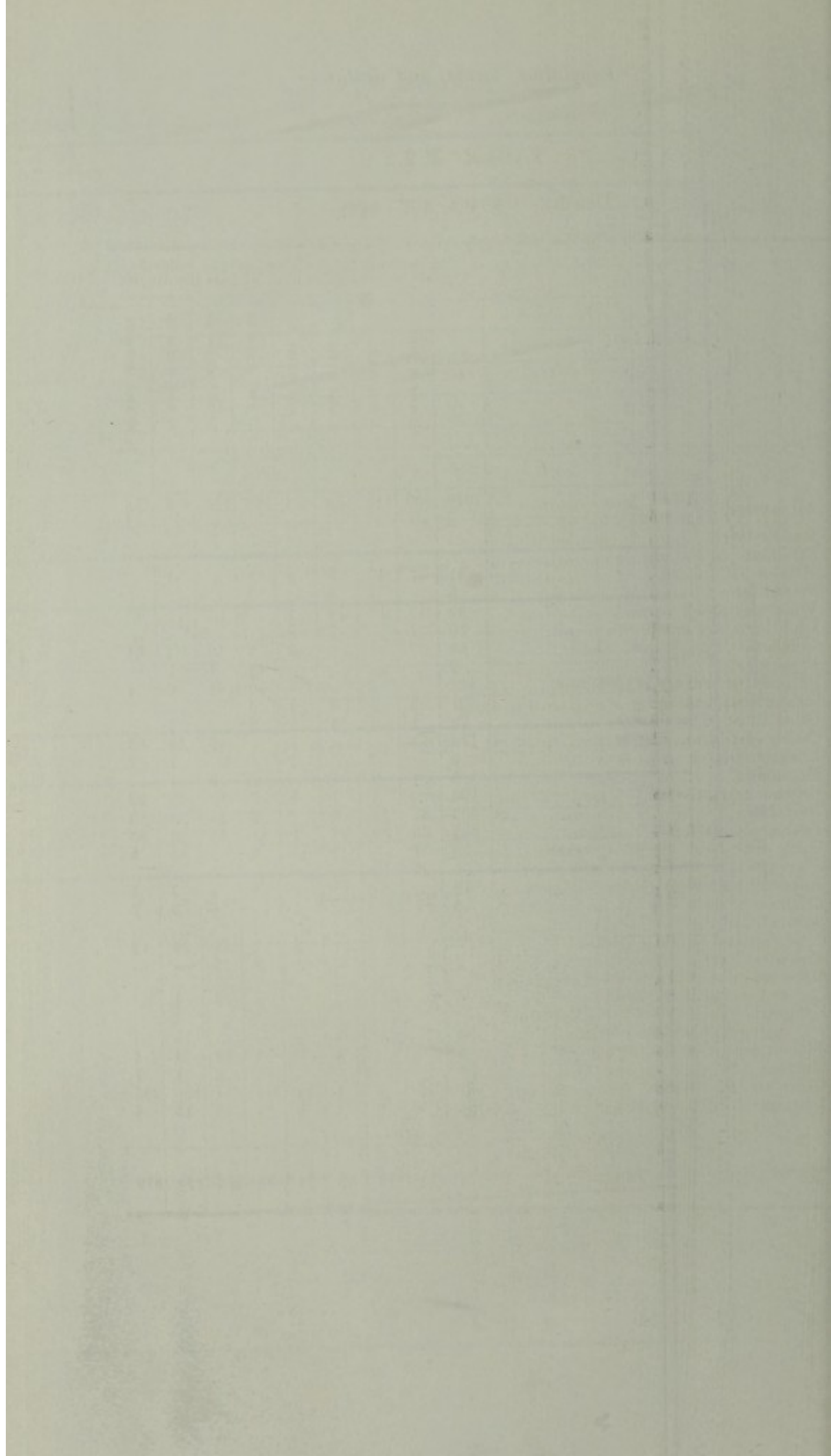


TABLE P 2.

Deaths: Causes and ages.

Causes of death	Net deaths at the subjoined ages of residents, whether occurring within or without the district.								
	All ages	Under 1 year	1 and under 2	2 and under 5	5 and under 15	15 and under 25	25 and under 45	45 and under 65	65 and upwards
All causes { Certified	2042	330	118	92	54	98	273	459	618
{ Uncertified	2	1	...	...	...	...	...	...	1
Enteric fever .....	...	...	...	...	...	...	...	...	...
Smallpox .....	...	...	...	...	...	...	...	...	...
Measles	31	7	10	9	4	...	...	1	...
Scarlet fever	5	...	1	2	...	2	...	...	...
Whooping cough	52	19	18	14	1	...	...	...	...
Diphtheria and croup	10	1	...	7	2	...	...	...	...
Influenza	65	8	1	...	2	6	10	14	24
Erysipelas	2	...	...	...	...	...	1	1	...
Phthisis (pulmonary tuberculosis)	141	...	3	...	4	30	64	36	4
Tuberculous meningitis	21	3	5	4	6	3	...	...	...
Other tuberculous diseases	29	1	4	4	5	2	9	4	...
Cancer (malignant disease) ...	172	...	...	...	1	1	19	82	69
Rheumatic fever ..	5	...	...	...	2	1	...	1	1
Meningitis	8	1	2	1	...	1	2	1	...
Organic heart disease ..	120	...	1	1	3	5	15	43	52
Bronchitis	239	31	12	8	...	2	18	53	115
Pneumonia (all forms) ..	232	55	38	26	1	11	35	36	30
Other diseases of respiratory organs	23	1	...	2	...	3	2	10	5
Diarrhoea and enteritis (under 2 years) ...	39	29	10	...	...	...	...	...	...
Appendicitis and typhlitis	12	...	...	...	1	6	2	2	1
Cirrhosis of liver	6	1	...	...	...	...	...	3	2
Alcoholism ..	...	...	...	...	...	...	...	...	...
Nephritis and Bright's disease	56	1	...	...	3	3	11	26	12
Puerperal fever ...	3	...	...	...	...	1	2	...	...
Other accidents and diseases of pregnancy and parturition ..	7	...	...	...	...	...	6	1	...
Congenital debility and malformation, including premature birth	128	127	...	1	...	...	...	...	...
Violent deaths, excluding suicide ...	33	2	...	4	3	4	12	4	4
Suicides	6	...	...	...	...	1	3	1	1
Other defined diseases ...	561	42	8	8	14	15	54	125	295
Diseases ill-defined or unknown	38	2	5	1	2	1	8	15	4
Totals	2044	331	118	92	54	98	273	459	619

TABLE P 3

Deaths: Causes and districts.

Causes of death	Deaths in or belonging to localities at all ages						Total deaths in Public Institutions in the district
	Whole Borough	Birkenhead*	Tranmere*	Claughton Ward	Oxton Ward	Bebington Ward	
All causes { Certified	2042	1198	641	92	60	51	643
{ Uncertified	2	1	1	...	...	...	...
Enteric fever .....	...	...	...	...	...	...	...
Smallpox .....	...	...	...	...	...	...	...
Measles	31	23	8	...	...	...	3
Scarlet fever.....	5	1	4	...	...	...	2
Whooping cough	52	41	10	1	...	...	13
Diphtheria and croup.....	10	5	5	...	...	...	6
Influenza	65	29	28	3	3	2	13
Erysipelas.....	2	1	1	...	...	...	...
Phthisis (pulmonary tuberculosis)	141	85	40	7	6	3	49
Tuberculous meningitis	21	11	8	...	1	1	10
Other tuberculous diseases.....	29	13	13	1	1	1	12
Cancer (malignant disease)	172	89	63	9	5	6	54
Rheumatic fever	5	1	3	...	...	1	1
Meningitis	8	5	2	1	...	...	5
Organic heart disease	120	53	46	15	...	6	24
Bronchitis	239	148	82	1	4	4	75
Pneumonia (all forms)	232	175	44	7	4	2	77
Other diseases of respiratory organs	23	14	7	1	1	...	8
Diarrhoea and enteritis (under 2 years)	39	34	5	...	...	...	23
Appendicitis and typhlitis	12	9	2	...	1	...	9
Cirrhosis of liver	6	4	1	...	...	1	1
Alcoholism .....	...	...	...	...	...	...	...
Nephritis and Bright's disease	56	26	22	4	1	3	27
Puerperal fever	3	2	1	...	...	...	1
Other accidents and diseases of pregnancy and parturition	7	4	3	...	...	...	3
Congenital debility and malformation, including premature birth	128	89	30	3	4	2	23
Violent deaths, excluding suicide	33	21	7	5	...	...	9
Suicides.....	6	3	1	...	1	1	...
Other defined diseases	561	290	193	33	28	17	193
Diseases ill-defined or unknown	38	23	13	1	...	1	2
Totals	2044	1199	642	92	60	51	643

*" Birkenhead " district comprises Argyle, Grange and Cleveland wards. "Tranmere " district comprises Clifton, Egerton and Mersey wards.

NOTE.—All deaths which occurred in institutions are classified in the district in which the patient resided.

TABLE P 4.

Infant deaths: Causes and ages.

Causes of death	Under 1 week	1-2 weeks	2-3 weeks	3-4 weeks	Total under 4 weeks	Over 4 weeks & under 3 months	3-6 months	6-9 months	9-12 months	Total under 1 year
All causes { Certified	74	30	22	14	140	44	46	52	48	330
{ Uncertified	1	...	...	...	1	...	...	...	...	1
Smallpox .....	...	...	...	...	...	...	...	...	...	...
Chickenpox .....	...	...	...	...	...	...	...	...	...	...
Measles .....	...	...	...	...	...	...	...	3	4	7
Scarlet fever .....	...	...	...	...	...	...	...	...	...	...
Whooping cough .....	...	...	...	...	...	5	3	4	7	19
Diphtheria and croup .....	...	...	...	...	...	...	1	...	...	1
Erysipelas .....	...	...	...	...	...	...	...	...	...	...
Tuberculous meningitis .....	...	...	...	...	...	...	2	...	1	3
Abdominal tuberculosis .....	...	...	...	...	...	...	...	...	1	1
Other tuberculous diseases .....	...	...	...	...	...	...	...	...	...	...
Meningitis (not tuberculous) .....	...	...	...	...	...	...	1	...	...	1
Convulsions	3	...	1	1	5	1	1	...	...	7
Laryngitis .....	...	...	...	...	...	...	...	...	...	...
Bronchitis .....	...	2	2	4	8	4	3	10	6	31
Pneumonia (all forms) .....	...	1	3	...	4	9	13	14	15	55
Diarrhoea and Enteritis	1	2	...	...	3	7	9	7	3	29
Gastritis .....	...	3	...	...	3	1	...	...	...	4
Syphilis .....	...	3	1	...	4	1	...	...	...	5
Rickets .....	...	...	...	...	...	...	...	...	...	...
Suffocation (overlying) .....	...	...	...	...	...	...	...	...	...	...
Injury at birth	1	...	1	...	2	...	...	1	...	3
Atelectasis	7	...	...	...	7	...	...	...	...	7
Congenital malformations	11	...	3	3	17	5	2	...	...	24
Premature birth	39	11	3	4	57	1	1	...	...	59
Atrophy, debility and marasmus	7	7	6	2	22	4	8	6	4	44
Other causes	6	1	2	...	9	6	2	7	7	31
Totals	75	30	22	14	141	44	46	52	48	331

Net births in the year—

Legitimate 3310

Illegitimate 141

Net deaths in the year—

Legitimate infants 316

Illegitimate infants ... 15

TABLE P 5.
Death-rates: Comparison with rest of country.

	Annual death rate per 1000 civilian population								Rate per 1000 births		Percentage of total deaths				
	All causes	Enteric fever	Smallpox	Measles	Scarlet fever	Whooping cough	Diphtheria	Influenza	Violence	Diarrhoea and enteritis (under 2 years)	Total deaths under 1 year	Deaths in public institutions	Certified causes of death	Inquest cases	Uncertified causes of death
England and Wales	12.9	0.01	0.00	0.15	0.04	0.16	0.11	0.54	0.44	6.2	77	25.6	92.7	6.2	1.1
105 Great Towns, including London (census population exceeding 50,000)	13.0	0.01	0.00	0.22	0.05	0.19	0.13	0.56	0.41	7.6	82	32.9	92.6	6.7	0.7
155 Smaller Towns	11.7	0.01	0.00	0.10	0.03	0.15	0.09	0.58	0.35	5.6	75	16.9	93.6	5.1	1.3
(census population 20,000 to 50,000)															
London	13.4	0.01	0.00	0.35	0.07	0.25	0.25	0.57	0.45	7.1	74	48.7	92.1	7.8	0.1
Birkenhead.....	13.6	0.00	0.00	0.20	0.03	0.34	0.06	0.43	0.26	11.3	95	31.4	94.7	5.1	0.9

LOCAL INDUSTRIES.

OCCUPATIONS.

The staple industries of the district are shipbuilding, ship-repairing and engineering. The 1921 census returns giving details regarding the number of residents engaged in different occupations had not been received at the time of writing this report.

UNEMPLOYMENT.

The Ministry of Health requests medical officers to give in their annual reports an indication of the extent of unemployment and of the amount of poor law relief in their areas.

The returns of unemployment for each month of the year are shown below:—

TABLE O 1.
Unemployment during 1922.

Month	Live register	Increase or decrease in live register	Applicants placed	
			Locally	In other districts
January	10633	Dec. 610	400	5
February	10930	Inc. 297	314	9
March	11311	Inc. 81	235	1
April	11424	Inc. 413	211	12
May	10808	Dec. 616	147	19
June	9979	Dec. 829	128	6
July	8903	Dec. 1076	159	35
August	7782	Dec. 1124	152	27
September	9068	Inc. 1286	194	17
October	10056	Inc. 988	130	20
November	9959	Dec. 97	91	5
December	10125	Inc. 166	168	3

AMOUNT OF POOR LAW RELIEF.

The following is a statement of the sums expended in the relief of the poor in the Birkenhead Union for the year ended 31st March, 1923:—

Union Institution	£9,603	17	5
Union Infirmary	15,458	1	7
Children's Homes	3,730	1	4
Outdoor relief (actual cash payments to recipients of)	28,273	5	1
Outdoor relief (on loan to unemployed)	39,352	3	3
Lunatics in asylums and licensed houses (total cost of maintenance)	26,327	0	3
	£122,744	8	11

The Birkenhead Union area covers the County Boroughs of Birkenhead and Wallasey, and the parishes of Bidston-cum-Ford and Noctorum. The populations of these three component parts were, in 1921:—

Birkenhead	145,592	(61.3 per cent.)
Wallasey	90,721	(38.2 per cent.)
Bidston and Noctorum ...	1,091	(0.5 per cent.)

WATER SUPPLY, FOOD, AND DRUGS.

WATER SUPPLY.

Particulars regarding the water supply of the Borough were given in detail in my annual report for 1921.

MILK SUPPLY.

Source.—Milk is supplied to the Borough chiefly from farms in Cheshire, Shropshire, Denbighshire and Flintshire.

Milkshops, etc.—The total number of milkshops in the Borough is 165. There are in addition 8 purveyors of milk, 5 cowsheds, and 62 farmers resident outside Birkenhead registered to purvey milk inside the Borough.

Milkshops are regularly inspected and the register of milk sellers is revised week by week.

During the year 337 notices to whitewash and efficiently to cleanse milkshops, cowsheds, and dairies were served on occupiers of such premises, and complied with.

Milk and Dairies Amendment Act 1922.—This Act, except where otherwise expressly provided, came into operation on the 1st day of September, 1922, and postponed for a further period the operation of the Milk and Dairies (Consolidation) Act, 1915. The Act makes further provision with regard to the sale of milk and matters connected therewith.

Prior to the coming into force of this Act, a local authority was bound to register any person making application to be registered as a purveyor of milk, and action could only be taken against him for infringements of the regulations and bye-laws.

This Act confers upon local authorities the very desirable power to refuse to place on, and also to remove from, the register any person on being satisfied that the public health is or is likely to be endangered by any act or default of such person.

Since the Act came into force 12 applications for registration have been received, 8 of which have been granted; 3 were refused, and 1 application was withdrawn.

Section 4 of the Act prohibits the addition of any colouring matter, or water, or any dried or condensed milk, or any fluid reconstituted therefrom, or any skimmed milk or separated milk, to milk intended for sale.

It was not necessary to take any action under this section during the year as no infringement had been reported.

Quality of milk.—The composition of the various samples of milk taken in the Borough and analysed during the year 1922 is set out in Table F 1 (page 26). From this table an indication of the general quality of the milk supply can be obtained.

Preservatives in milk and cream.—Samples taken under the Public Health (Milk and Cream) Regulations, 1912 and 1917, during the year showed the following results:—

1. *Milk, and cream not sold as preserved cream.*

Article	No. of samples examined for the presence of a preservative (a)	No. in which a preservative was reported to be present, and percentage of preservative found in each sample (b)
Milk	111	Nil.
Cream	4	3 { 0.45% 0.37% 0.65%

Nature of preservative in each case in column (b).....

Boric acid.

Action taken under the Regulations

The first sample was taken informally. This was followed by a formal sample, with regard to which the Vendor was asked for an explanation, which was accepted, and he was cautioned.

A sample was then obtained in course of delivery from the Wholesaler, who was fined £2 for selling preserved cream unlabelled and £2 for selling preserved cream to which an excess of preservative had been added.

2. *Cream sold as preserved cream.*

No samples were taken for analysis during the year, and no action was taken with regard to labelling, &c., under Articles V (1) and V (2) of the regulations.

3. *Thickening substances.*

The Public Analyst has not found evidence of the addition of any thickening substances to the samples of cream or preserved cream which have been analysed.

TABLE F 1.

Composition of milk samples taken during 1922.

Date of sample	Identification No. given in quarterly report	Percentage of fat	Percentage of solids not fat	Date of sample	Identification No. given in quarterly report	Percentage of fat	Percentage of solids not fat	Date of sample	Identification No. given in quarterly report	Percentage of fat	Percentage of solids not fat
Jan. 24	2	3.20	9.19	Mar. 24	63	3.40	8.82	July 28	171	4.20	8.51
31	7	3.55	8.89		64	3.27	8.89	Aug. 31	173	3.55	8.83
	8	3.53	8.65		65	3.55	8.69		174	3.71	9.12
	9	3.80	9.14		66	3.55	8.47		175	3.36	8.93
	10	3.65	8.75		67	3.75	9.12		176	5.09	8.79
	11	3.70	9.09	Apl. 11	81	3.30	8.60		177	3.10	8.70
	12	3.72	8.76		82	2.34	8.89		178	3.03	8.24
Feb. 6	13	3.68	9.12		83	2.85	8.82	Oct. 17	190	3.18	8.24
	14	3.65	9.01		84	3.80	8.50		191	2.87	7.48
	15	3.10	9.04		85	7.75	8.85	20	198	3.83	9.33
	16	3.70	9.30		86	3.52	8.80		199	3.16	8.25
	17	4.15	9.27	18	87	3.45	9.11		200	2.89	8.33
	18	3.55	9.49	19	88	3.61	8.95	24	216	3.62	9.14
24	32	3.80	8.86	25	91	2.70	8.91		217	3.85	8.98
Mar. 8	33	3.08	8.72	28	96	3.25	8.91		218	4.15	9.56
	34	2.88	8.74	May 9	103	2.07	7.90	25	227	3.52	8.99
	35	2.85	8.95		104	3.10	8.74		228	3.90	9.13
	36	3.00	8.86		105	3.10	8.76	Nov. 7	265	4.55	9.16
	37	3.50	8.74		106	2.88	8.90		266	4.00	9.05
11	38	2.73	9.05		107	3.50	9.06		267	3.85	9.37
13	39	3.27	8.91		108	3.40	8.86		268	3.85	9.16
	40	3.03	8.95		109	3.05	8.67		269	3.98	9.22
	41	2.91	8.77	11	118	3.95	8.93		270	3.62	9.08
15	42	3.40	8.62		119	3.03	7.91	10	271	3.68	9.09
	43	3.58	8.70		120	3.14	8.00		272	4.15	9.34
	45	3.52	8.54	June 8	127	3.45	8.95		273	5.80	8.94
	46	4.13	8.51		128	3.33	8.63		274	3.75	9.29
	47	3.78	8.67		129	3.70	9.06		275	3.87	9.07
23	48	3.45	9.03		130	3.18	9.08		276	3.12	9.20
	49	3.65	8.87		131	3.10	8.82	Dec. 5	307	3.20	8.70
	50	3.35	9.01		132	3.59	8.65		308	3.50	8.85
	51	3.80	9.20	13	139	2.70	8.53		309	3.90	9.00
	52	3.40	8.99	15	140	2.91	8.81		310	2.70	9.28
	53	3.60	8.82	July 28	166	4.65	8.80		311	3.40	8.90
24	60	3.47	8.75		168	3.65	8.56		312	3.45	8.72
	61	3.55	9.31		169	3.50	8.67	8	314	3.55	9.16
	62	3.25	9.17		170	3.02	8.58		315	3.53	9.27

Average percentage Fat, 3.51 ... Solids (not fat), 8.86

OTHER FOODS.

Abattoirs in Birkenhead.—Particulars regarding these—the abattoir within the Woodside Lairages and the Corporation abattoir at Tranmere—were given in my annual report for 1920. There are no private slaughterhouses in the Borough.

Food inspection.—The Meat and Food Inspector reports that during the year there were killed 63,403 oxen, 366 calves, 4,791 pigs, 1,746 sheep, 2,923 lambs, and 2 goats; as set out in Table F 2.

TABLE F 2.
Animals dealt with during 1922.

	Oxen	Calves	Pigs	Sheep	Lambs	Goats	Total
No. of animals remaining over in lairages from 1921 (slaughtered in 1922) .....	...	2	108	4	...	...	114
Total no. of animals landed from vessels at Birkenhead during the year 1922—							
(a) From Ireland	262609	...	31257	418432	...	162	712460
(b) From other places abroad	38649	..	..	5	...	...	38654
Total.....	301258	2	31365	418441	...	162	751228
The above animals were dealt with as follows—							
A—Slaughtered in Birkenhead—	62923	...	506	363	...	2	63794
(1) At Woodside lairages							
(2) At nos. 4 and 5 sheds	42	...	4	686	...	...	732
B—(1) Removed alive from the district	237661	2	30301	416889	...	160	685013
(2) Not slaughtered by end of 1922 (still in lairages) ...	632	...	554	503	...	...	1689
Total	301258	2	31365	418441	...	162	751228
No. of animals slaughtered in Birkenhead not included in the above statement—							
At Municipal Abattoir... ..	438	366	4281	697	2923	...	8705
Total animals slaughtered in Birkenhead.....	63403	366	4791	1746	2923	2	73231

The total number of carcasses seized was:—

At Woodside	433	weighing	151,644 lbs.
At "Wallasey Stage," B'head .	2	..	1,454 lbs.
At nos. 4 & 5 Sheds	24	..	4,003 lbs.
At Tranmere Abattoir	24	..	2,781 lbs.
At shops	3	..	75 lbs.
At other premises	1	..	30 lbs.
Total	487	..	159,987 lbs.

162 of the above carcasses were seized on account of tuberculosis; their aggregate weight being 72,451 lbs. The remainder were seized on account of transit injuries, dropsy, sepsis, &c.

The number of parts of carcasses seized was:—

At Woodside	646	weighing	34,522 lbs.
At "Wallasey Stage," B'head ..	—	„	—
At nos. 4 & 5 Sheds	—	„	—
At Tranmere Abattoir	19	„	489 lbs.
<hr/>			
Total	665	„	35,011 lbs.
<hr/>			

Of the above, 621 were seized on account of tuberculosis; the aggregate weight being 33,542 lbs. 27 heads and 44 tongues, weighing 1,052 lbs., were seized on account of actinomycosis and actinobacillosis.

The total weight of offal seized was 140,830 lbs

Other articles of food.—The total weight of articles of food seized at various premises in the Borough was 2,544 $\frac{3}{4}$ lbs. One prosecution was taken under Section 117 of the Public Health Act, 1875, against a shopkeeper for exposing for sale unsound fruit; a penalty of £3 being imposed.

SALE OF FOOD AND DRUGS ACTS.

During the year 328 samples were taken. Of these 184 were formal and 144 informal. The articles sampled are set out in the following table.

TABLE F 3.

Samples taken during 1922.

Article	No. samples taken formally	No. samples taken informally	Article	No. samples taken formally	No. samples taken informally
Milk	110	1	Egg powder	1	—
Butter	22	13	Tinned tomatoes.....	—	6
Coffee	6	9	Honey	—	6
Malt vinegar	6	3	Cheese	—	6
Rice	5	1	Glycerine	—	5
Self-raising flour.....	4	7	Camphorated oil.....	—	5
Jam	4	6	Condensed milk	—	4
Margarine ..	3	8	White pepper	—	4
Lard	3	3	Borax	—	3
Evaporated milk	3	1	Cod-liver oil ..	—	3
Fresh cream	3	1	Epsom salts	—	2
Sausage	2	9	Castor oil ..	—	2
Sweets	2	5	Am. tincture quinine...	—	2
Olive oil	2	5	Canned pineapple	—	2
Custard powder	2	3	Canned apricots	—	1
Ground rice	2	0	Canned peaches ..	—	1
Zinc ointment.....	1	5	Canned pears ..	—	1
Cocoa	1	4	Peas ..	—	1
Baking powder	1	2	Bi-carbonate of soda ..	—	1
Cream of tartar	1	2	Comp. liquorice powder	—	1

Samples analysed formally 184

Samples analysed informally 144

Total samples analysed during the year 328

Of the total number of samples analysed

- 19 samples of milk
- 4 samples of sausage
- 3 samples of fresh cream
- 2 samples of malt vinegar
- 2 samples of zinc ointment
- 1 sample of cream of tartar
- 1 sample of butter
- 1 sample of margarine

were reported adulterated, and proceedings were taken in respect of:—

- 14 samples of milk
- 1 sample of fresh cream
- 1 sample of sausage

With reference to the remaining samples reported adulterated the Health Committee, after consideration and hearing the vendors' explanations, decided that it was inadvisable to institute proceedings, and the vendors were subsequently cautioned.

Informal samples.—All the samples taken informally for analysis during the year were found pure, with the following exceptions:—

- No. 165—Fresh cream... A formal sample was subsequently obtained and proceedings instituted.
 „ 179—Sausage A formal sample was subsequently obtained and proceedings instituted.
 „ 197—Sausage A formal sample was subsequently obtained and proceedings instituted.
 „ 225—Margarine ... Efforts to obtain a formal sample failed.
 „ 261—Sausage A formal sample was obtained which, on analysis, proved to be genuine.
 „ 289—Zinc ointment. A formal sample was found to be similarly adulterated, and vendor was cautioned.

Particulars of the defects found in those samples with regard to which proceedings were taken, and the result of the proceedings, are set out in Table F 4.

The composition of each sample of milk analysed during the year will be found in Table F 1.

TABLE F 4.

Samples with reference to which proceedings were taken.
 Nature of adulteration and result of proceedings.

1922 Quarter ending	Article	No. of sample	Adulteration	Fine inflicted
Mar. 31	Milk	34	4 per cent deficient in fat	10/- including costs
	Milk	35	5 per cent deficient in fat	Dismissed on warranty
	Milk	38	9 per cent deficient in fat	Case dismissed
	Milk	41	3 per cent deficient in fat	Case dismissed
June 30	Milk	82	22 per cent deficient in fat	£2 including costs
	Milk	83	5 per cent deficient in fat	£1 „
	Milk	91	10 per cent deficient in fat ...	£2 „
	Milk	103	26 per cent deficient in fat and 7 per cent added water	10/- „
	Milk	119	7 per cent added water	£1 „
	Milk	120	6 per cent added water	£3 1/- „
	Milk	139	10 per cent deficient in fat	£1 „
	Milk	140	3 per cent deficient in fat	Case dismissed
Sept. 30	Fresh cream.	172	0.65 per cent boric acid	£4 including costs
Dec. 31	Milk	191	12 per cent added water ...	£1 „
	Sausage	215	8 per cent deficiency of meat...	£2 „
	Milk	310	10 per cent deficient in fat ..	£1 „
	Malt vinegar	121	Obstruction of Inspector	£10 „
			Sample genuine	

TUBERCULOSIS.

ADMINISTRATIVE ARRANGEMENTS.

The arrangements made by the Birkenhead Corporation for dealing with tuberculosis in the area include

(a) The provision of a dispensary or clinic, opened in 1913. (This clinic is used on one half-day each week in connection with cases from the area of the administrative county of Chester.)

(b) The provision of garden shelters (two) for suitable cases at a small rent.

(c) The retention since August, 1914, of twelve beds at Leasowe Hospital for cases of surgical tuberculosis in children.

(d) A joint arrangement with the Cheshire County Council, and the Councils of the County Boroughs of Wallasey, Chester, Stockport, and Stoke-on-Trent, for the provision of a sanatorium at Burntwood.

(e) The provision of a residential institution at Thingwall, Cheshire.

Staff.—The medical and health visiting staff for tuberculosis at the end of 1922 was as set out in the annual report for 1921.

The Corkhill Fund.—Under the will of the late Mr. John Lloyd Corkhill, of Oxton, a sum of money was provided for the assistance of persons suffering from consumption. By arrangement with the trustees, persons applying for help from the charity are passed through the municipal clinic for classification; and the trustees have been largely guided by the recommendations of the medical staff of the clinic.

PREVALENCE OF, AND MORTALITY FROM, TUBERCULOSIS.

Notifications.—The total number of primary cases of tuberculosis notified during 1922 was 257—191 pulmonary and 66 non-pulmonary. An analysis of these cases with reference to age and sex will be found in Table T 1 (page 37).

Mortality.—The total number of deaths, certified as due to tuberculosis, of patients who had previously been notified as suffering from the disease was 121—101 pulmonary and 20 non-pulmonary.

The total number of deaths, certified as due to tuberculosis, of patients who had *not* previously been notified as suffering from tuberculosis was 70—40 pulmonary and 30 non-pulmonary.

Adding these together, the total number of deaths certified as due to tuberculosis was as follows:—

Pulmonary	141
Non-pulmonary	50
Total	191

The number of deaths, certified as due to *other causes*, of patients who had previously been notified as suffering from tuberculosis was 1; the certified cause of death being pneumonia.

An analysis of the tuberculosis mortality for the past ten years will be found in Table T 2 (page 38).

Number of known cases.—After making deductions for patients who had died during the year, or who had permanently left the district, or whose names have been taken off the register as provisionally cured (cases who have shown no signs or symptoms of active tuberculosis during two complete calendar years), the total number of known cases of tuberculosis in Birkenhead at the end of 1922 was as follows:—

	Insured persons		Dependents of insured person	Neither insured persons nor dependents	Total
	Ex-service men	Others			
Pulmonary.....Male	98	293	95	54	540
Female	—	126	59	196	381
Non-pulmonary...Male	5	34	166	5	210
Female	—	26	166	20	212
Total...Male	103	327	261	59	750
Female	—	152	225	216	593
Total	103	479	486	275	1343

Efficiency of system of notification.—As was stated in the last annual report the notification of tuberculosis is of comparatively little practical value unless cases are notified in the earliest stages of the disease.

Article V. of the Public Health (Tuberculosis) Regulations, 1912, provides that “. . . Every medical practitioner . . . attending on or called in to visit any person (whether at an institution or otherwise) shall, *within forty-eight hours* after first becoming aware that such person is suffering from tuberculosis ” (pulmonary or non-pulmonary) “ make and sign a notification of the case . . . and shall transmit the notification to the medical officer of health for the district within which the place of residence of the person is situate. . . . ”

An inquiry regarding the observance of these regulations in Birkenhead was begun in 1920, and continued throughout last year. A summary of the facts relating to 1922 is given below:—

Of the 141 patients who died from pulmonary tuberculosis during 1922, those who had been notified

Over four years numbered ...	12 (8.5% of total)
Under “ “ “ “ ...	6 (4.2 “)
“ three years “ “ “ “ ...	5 (3.6 “)
“ two years “ “ “ “ ...	11 (7.8 “)
“ one year “ “ “ “ “ ...	5 (3.6 “)
“ six months “ “ “ “ “ ...	15 (10.6 “)
“ three months “ “ “ “ “ ...	21 (14.9 “)
“ one month “ “ “ “ “ ...	14 (9.9 “)
“ one week “ “ “ “ “ ...	12 (8.5 “)
and those who had not been notified numbered	40 (28.4 “)

Thus only 53.3% of these cases were notified to this department three months or more before death. This is a slight improvement on the two preceding years, which showed percentages of 48.2 and 48.1 respectively. But obviously there is still only a small proportion of the cases which develop in the Borough notified early enough to allow of measures being taken by the local authority to secure effective treatment.

Of the 50 patients who died from non-pulmonary tuberculosis during 1922 those who had been notified

Over three years numbered ...	2 (4% of total)
Under three years ,, ...	1 (2 ,,)
,, two years ,, ...	1 (2 ,,)
,, one year ,, ...	1 (2 ,,)
,, three months ,, ...	3 (6 ,,)
,, one month ,, ...	3 (6 ,,)
,, one week ,, ...	9 (18 ,,)
and those who had not been notified numbered	30 (60 ,,)

CASES DEALT WITH THROUGH THE TUBERCULOSIS CLINIC.

Attendances of patients at the clinic.

(a) During the year 1,111 patients made 1,474 attendances at the clinic for the purpose of medical examination. Of these, 606 had not been examined before at the clinic.

505 patients (who made 868 attendances) were cases who had previously been examined and were re-examined one or more times during the year for observation, treatment, or after-care purposes.

(b) In addition to attendances made for the purpose of medical examination, 410 other attendances were made by patients for weighing, interview, advice, or certification, and by patients' relations in connection with questions arising as to treatment, removal, home conditions, &c.

Examination of patients who were notified for the first time during 1922.—Of the 257 new patients notified in 1922, 191 were examined at the clinic during the year. Of these

109 had been sent down to the clinic by their own doctor for examination;

2 were ex-servicemen referred to the clinic as tuberculous cases by the Ministry of Pensions;

17 were sent for as contacts;

63 came on their own initiative;

66 were not referred to, or did not attend at, the clinic.

257

Classification of new cases.—The 606 new patients who attended during the year were classified as follows:—

		Insured		Dependent	Neither	Total
		Ex-service men	Others			
Classed as tuberculous.....	Males	2	57	37	3	99
	Females	—	19	46	27	92
Classed as non-tuberculous...	Males	1	41	93	—	135
	Females	—	14	114	36	164
Classed as "suspect"	Males	2	20	26	4	52
	Females	—	12	38	14	64
Total... ..		5	118	156	7	286
	Females	—	45	198	77	320
Total		5	163	354	84	606

Pensions cases.—Included in the 606 new patients were 5 patients examined for pensions purposes, with the following results:—

Found to be suffering from pulmonary tuberculosis	2
Classed as suspects	2
Found to be free from active tuberculosis	1
	5

In addition to the above 71 old cases were examined for pensions purposes.

During the year the following reports were made in connection with the examination at the tuberculosis clinic (or at their own homes) of ex-servicemen:—

War Pensions Cttee.	M.P.M.S., D. 23	M.P.M.S., D. 23A	36 T.O.	N.W.F., 36	M.P.M.S., D. 122	Total
Birkenhead	26	*55	*16	—	—	97
Manchester	—	—	—	11	11	22
Liverpool	—	—	—	15	22	37
Total	26	55	16	26	33	156

* Includes 1 visit paid to pensioner's home.

Examination of contacts.—230 persons who had been in close contact with known cases of tuberculosis were examined either at the clinic or at their own homes. Of these 12 were found to be suffering from pulmonary tuberculosis, 5 were found to be suffering from non-pulmonary tuberculosis, 136 were not suffering from tuberculosis, and 77 were classified as "suspect."

HOME VISITING, DISINFECTION, ETC.

During the year the health nurses paid 234 first visits and 2,987 re-visits to the homes of patients.

The number of houses disinfected after death or removal of patients was 159.

Spitting flasks were provided free of charge to 5 patients.

LEASOWE HOSPITAL.

Full use has been made during the year of the twelve beds reserved by the Corporation at Leasowe Hospital for cases of surgical tuberculosis among Birkenhead residents.

There were 12 cases in hospital at the beginning of the year; 12 new cases have been admitted during the year, and 12 have been discharged or died; leaving 12 patients in hospital at the end of December.

The localisation of the disease in the 24 patients under treatment during the year was as follows:—

Tuberculosis of cervical glands	4
„ hip	4
„ spine	5
„ peritoneum	2
„ knee	1
„ neck glands	1
„ elbow	2
„ face	1
„ left knee joint	1
„ knee and wrist	1
„ left femur	1
„ bones	1
	<hr/>
	24
	<hr/>

The 12 cases discharged or died were as follows:—

Tuberculosis of spine	1	removed by parents against advice of Medical Officer
„ cervical glands	3	2 quiescent; 1 discharged for misbehaviour
„ hip	2	1 quiescent; 1 died
„ elbow	2	quiescent
„ knee & wrist	1	quiescent
„ femur	1	quiescent
„ l. knee joint	1	quiescent
„ peritoneum	1	quiescent

THINGWALL SANATORIUM.

The Sanatorium was opened for the admission of patients on 4th November, 1921.

Accommodation.—The accommodation available at the beginning of 1922 consisted of 20 beds. In May, the equipment of the Sanatorium was brought up to full complement of 40 beds and 3 cots.

The available accommodation was fully utilised until October, when the number of patients was reduced to 23 owing to shortage of nursing and domestic staff.

Type of cases dealt with.—The cases dealt with during the year have mainly been patients in the early and moderately advanced stages

of disease. Acute cases and patients with advanced tuberculosis have also been admitted, but it is not considered desirable to deal with such cases as a routine measure owing to the lack of side-wards and the distance of the Sanatorium from Birkenhead. Two cases of purely surgical tuberculosis were admitted for treatment during the year.

The selection of patients for treatment in a residential institution for tuberculosis is a matter of considerable difficulty, calling for wide experience in dealing with the disease and the exercise of much clinical skill. Even with every precaution taken, it from time to time happens that a patient selected as likely to do well fails to make progress; while on the other hand patients in whom the disease is firmly established may improve considerably under a sanatorium regime.

Nature of treatment.—The treatment given at the Sanatorium includes graduated rest and exercise, an open-air life, regular recreation and ample diet. Complete rest in bed for varying periods—as long as three months in some cases—may be necessary. Subsequently patients are allowed to sit up for gradually increasing periods, and later to take measured walks—increasing from 100 yards to 5 or 6 miles, attention being paid to gradient.

Medicinal and serological treatment given includes special measures selected for particular patients, such as tuberculin injections, &c.

The use of Paget's insufflation treatment and of Dreyer's vaccine were under consideration at the end of the year.

Patients dealt with.—At the commencement of the year there were 13 cases under treatment in the Sanatorium.

79 patients were admitted during the year; 69 were discharged, 1 patient died; and 22 patients remained under treatment at the end of the year.

	Men	Women	Children (under 16)	Total
In Sanatorium January 1, 1922 .....	..	1	12	13
Admitted during year	39	24	16	79
Discharged during year	29	19	21	69
Died in Sanatorium	1	...	...	1
In Sanatorium December 31, 1922 ...	9	6	7	22

Results of treatment.—Results of treatment in an institution for pulmonary tuberculosis cannot safely be finally assessed until some considerable time after a patient's discharge; certainly not for two or three years.

All patients who have passed through Thingwall Sanatorium are being kept under careful observation. They are examined from time to time at the municipal clinic, progress or retrogression being noted; and an estimate of the amount of benefit derived as a direct result of sanatorium treatment is made in each case.

A general statement as to the condition *at the time of discharge* of 69 patients who left the Sanatorium during the year may be given here:—

Disease quiescent	19
Much improved	18
Improved	17
Not improved	7
Worse	5
Admitted for observation, and found free from active tuberculosis	3
	<hr/>
	69

Average duration of stay.—The average length of stay in the Sanatorium of patients discharged during the year was 20 weeks.

Open-air teaching of children.—The institution of an open-air class of modest dimensions, conducted by two of the women patients, has proved very successful. Some of the children of school age who could not read or write on admission to the Sanatorium could do so at the end of the year.

Accommodation and facilities for recreation and occupation.—The work of the Sanatorium is handicapped by the absence of facilities for recreation and suitable work for patients.

A recreation and dining room is greatly needed, and also workrooms where male patients may engage in light carpentry work, &c., and female patients in basket-making, sewing, &c. A bowling green is also urgently required.

Nothing could be worse for a patient who must be kept for a long period in an institution, isolated from friends and from the ordinary activities of everyday life, than to be without such healthy occupation for body and mind as may be permitted by his physical condition.

TABLE T 1.

New cases notified for first time during the year.

PRIMARY NOTIFICATIONS												
Age periods.....	0-1	1-5	5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65 and up	Total
Pulmonary—Males	—	4	5	5	12	8	23	29	15	4	1	106
Females ..	—	3	2	7	6	17	23	21	2	1	3	85
Non-pulmonary—Males.....	4	19	13	3	1	1	1	—	—	—	—	32
Females ..	2	11	5	2	4	4	3	1	2	—	—	34
Totals.....	6	37	25	17	23	30	50	51	19	5	4	257

TABLE T 2.

Deaths from tuberculosis during the past ten years.

Year	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
Deaths from tuberculo- sis of the lungs—										
Number	168	141	173	177	172	167	146	116	154	141
Rate per 1000.....	1.23	1.02	1.23	1.24	1.18	1.13	0.97	0.76	1.04	0.94
A Males—										
Number	104	75	105	104	89	97	73	55	68	77
Rate	0.76	0.54	0.74	0.72	0.61	0.65	0.48	0.36	0.46	0.51
B Females—										
Number	64	66	68	73	83	70	73	61	86	64
Rate	0.47	0.47	0.48	0.51	0.57	0.47	0.48	0.40	0.58	0.42
Deaths from other forms of tuberculosis—										
A Males (all ages)										
Number	32	23	44	36	36	40	24	36	21	25
Rate.....	0.23	0.16	0.31	0.25	0.24	0.27	0.16	0.23	0.14	0.16
B Females (all ages)										
Number	27	23	23	25	33	26	14	20	19	25
Rate	0.19	0.16	0.16	0.17	0.22	0.17	0.09	0.13	0.13	0.16
C Children (un. 5 yrs)										
Number	39	27	42	44	44	36	22	26	17	21
Rate.....	0.28	0.19	0.29	0.30	0.30	0.24	0.14	0.17	0.11	0.15

VENEREAL DISEASES.

ADMINISTRATIVE ARRANGEMENTS.

The arrangements for diagnosis and treatment of venereal diseases were referred to in the annual report for 1920.

The question of the revision of the Corporation's agreement with the Borough Hospital was under consideration during 1922, but a new agreement was not completed by the end of the year.

On 6th November, 1922, Dr. Lovell took up duties at the Venereal Diseases Clinic, Dr. Dalzell having resigned the appointment of medical officer to the clinic held by him since 1916.

TREATMENT CARRIED OUT AT THE CLINIC.

During the year 1,086 persons were dealt with as out-patients at the clinic. These made 3,832 attendances.

The aggregate number of " in-patient " days was 1,856.

Full details are set out in Tables V 1 and V 2.

TREATMENT OF BIRKENHEAD PATIENTS CARRIED OUT AT OTHER TREATMENT CENTRES.

So far as has been ascertained from official returns which have been received from other areas, 37 Birkenhead patients attended other treatment centres as shown in Table V 3.

ISSUE OF SALVARSAN SUBSTITUTES.

Salvarsan substitutes were issued during the year by the Medical Officer of Health

To the Medical Officer of the treatment centre at the Borough Hospital

To the Medical Officer, Birkenhead Union Infirmary

To one approved local practitioner.

BACTERIOLOGICAL WORK.

Professor Beattie examined 693 specimens, 495 of these being sent from the clinic, and 198 from private medical practitioners. Of the specimens sent 683 were for the Wassermann reaction, 9 for the detection of gonococci, and 1 for the detection of spirochetes.

PROPAGANDA.

The following lecture was given under the auspices of the Merseyside Boroughs Branch of the National Council for Combating Venereal Diseases, to which the Birkenhead Corporation pays an annual contribution:—

October 19th—Film " How Life Begins," shown to Birkenhead School Teachers at the Y.M.C.A. Hall, Grange Road; lecturer, Dr. J. E. Nevins.

TABLE V 1.

Statement showing the services rendered at the Venereal Diseases Clinic during the year, classified according to the diseases dealt with.

	Syphilis		Soft chancre		Gonorrhoea		Conditions other than venereal		Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1. Number of persons who, on the 1st January, 1922, were under treatment or observation for ...	410	96	4	—	158	18	11	23	583	137
2. Number of persons dealt with during the year in the out-patient clinic for the first time and found to be suffering from—										
Syphilis only	133	77	—	—	—	—	—	—	133	77
Soft chancre only	—	—	—	—	—	—	—	—	—	—
Gonorrhoea only	—	—	—	—	85	9	—	—	85	9
Syphilis and soft chancre	2	—	2	—	—	—	—	—	4	—
Syphilis and gonorrhoea	5	4	—	—	5	4	—	—	10	8
Gonorrhoea and soft chancre	—	—	—	—	—	—	—	—	—	—
Syphilis, soft chancre & gonorrhoea	—	—	—	—	—	—	—	—	—	—
Conditions other than venereal ...	—	—	—	—	—	—	16	24	16	24
Total—Item 2	140	81	2	—	90	13	16	24	248	118
Total—Items 1 and 2	550	177	6	—	248	31	27	47	831	255
3. Number of persons who ceased to attend the out-patient clinic										
(a) before completing the first course of treatment for	86	77	1	—	65	20	10	31	162	128
(b) after one or more courses, but before completion of treatment for	—	—	—	—	—	—	—	—	—	—
(c) after completion of treatment, but before final tests as to cure, of	—	—	—	—	—	—	—	—	—	—
4. Number of persons transferred to other treatment centres after treatment for	1	2	—	—	—	—	2	2	3	4
5. Number of persons discharged from the out-patient clinic after completion of treatment and observation for	—	—	—	—	—	—	—	—	—	—
6. Number of persons who, on the 1st January, 1923, were under treatment or observation for ...	463	98	5	—	183	11	15	14	666	123
Total—Items 3, 4, 5 and 6	550	177	6	—	248	31	27	47	248	255
7. Total attendances of all persons at the out-patient clinic who were suffering from	1811	735	19	—	1170	45	17	45	3017	815
8. Aggregate number of "in-patient days" of treatment given to persons who were suffering from	551	631	—	—	495	79	—	—	1046	810
9. Examinations of pathological material—										
(a) Specimens which were examined at, and by the medical officer of, the treatment centre										
(b) Specimens from persons attending at the treatment centre, which were sent for examination to an approved laboratory										
					For detection of			For Wassermann reaction		
					Spirochetes	Gonococci	Other organisms			
					—	2	—			
					—	6	—		487	

TABLE V 2.

Statement showing the services rendered at the Venereal Diseases Clinic during the year, classified according to the areas in which the patients resided.

	Birkenhead	Wallasey	Cardiff	Manchester	Denbigh	Bootle	London	Cheshire	Liverpool	Lancashire	Stockport	Total
A. Number of persons from each area dealt with during the year, at or in connection with the out-patient clinic for the first time, and found to be suffering from—												
Syphilis	209	2	—	1	—	—	1	3	2	2	1	221
Soft chancre	2	—	—	—	—	—	—	—	—	—	—	2
Gonorrhœa	100	1	1	—	1	—	—	—	—	—	—	103
Conditions other than venereal	39	—	—	—	—	1	—	—	—	—	—	40
Total	350	3	1	1	1	1	1	3	2	2	1	366
B. Total number of attendances at the out-patient clinic of all patients residing in each area	3757	10	38	7	4	1	1	9	2	2	1	3832
C. Aggregate number of "in-patient days" of all patients residing in each area	1780	22	54	—	—	—	—	—	—	—	—	1856
D. Number of doses of salvarsan substitutes given in the—												
1. Out-patient clinic	2060	61	—	—	—	1	—	83	—	—	—	2205
2. In-patient department	—	—	—	—	—	—	—	—	—	—	—	—
to patients residing in each area												

The salvarsan substitutes used in the treatment of syphilis are—

Novarsenobillon—Initial dose, '3 gms. Final dose, '9 gms.
Galyl....., 10 cgs. „ 30 cgs.

TABLE V 3.

Statement showing particulars of Birkenhead cases treated at Venereal Diseases Clinics in other areas.

Name of town	No. of patients	Disease	Attendances at out-patient clinic	No. of in-patient days	Doses of salvarsan substitutes given in	
					Out-patient clinic	In-patient department
Liverpool	22	Syphilis	10	332	—	92
(David Lewis Northern Hos.)		Gonorrhœa	8			
		Conditions other than venereal	4			
Liverpool	9	Syphilis	5	71	66	10
(Royal Southern Hospital)		Gonorrhœa	3			
		Conditions other than venereal	1			
Wallasey	5	Syphilis	1	21	—	11
		Gonorrhœa	3			
		Conditions other than venereal	1			
South Shields ...	1	Gonorrhœa	1	1	—	—

OTHER INFECTIOUS DISEASES.

INFECTIOUS DISEASES WHICH ARE NOTIFIABLE.

The infectious diseases which (in addition to tuberculosis, already dealt with) were compulsorily notifiable to the Medical Officer of Health at any time during the past year are as follows:—

Smallpox.
Scarlatina.
Diphtheria and membranous croup.
Erysipelas.
Typhus fever.
Typhoid fever.
Continued fever.
Relapsing fever.
Cerebro-spinal meningitis.
Acute encephalitis lethargica.
Acute polio-encephalitis.
Acute poliomyelitis.
Puerperal fever.
Ophthalmia neonatorum.
Cholera.
Pneumonia (acute primary and influenzal).
Malaria.
Dysentery.
Trench fever.

Cases notified in 1922.—During the year 1,070 cases of infectious diseases other than tuberculosis were notified to me. These are set out in Tables I 1 and I 2.

TABLE I 1.

Infectious diseases other than tuberculosis notified during 1922;
showing seasonal incidence.

Disease	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Smallpox	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlatina	25	13	36	31	53	35	37	24	26	29	27	28	364
Diphtheria and membra- nous croup	14	10	15	11	17	12	7	4	6	8	19	11	134
Erysipelas	13	10	7	5	7	2	6	6	3	4	6	4	73
Typhus fever	—	—	—	10	—	—	—	—	—	—	—	—	10
Typhoid fever	—	—	—	—	2	—	—	1	2	6	3	—	14
Continued fever.....	—	—	—	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebro-spinal meningitis	—	—	1	—	—	—	—	—	—	—	1	—	2
Encephalitis lethargica (acute).....	—	—	—	2	—	—	—	1	—	—	—	—	3
Polio-encephalitis (acute)	—	—	—	—	—	—	—	—	—	—	1	—	1
Poliomyelitis (acute)....	—	—	—	—	—	—	—	—	—	1	1	—	2
Puerperal fever	1	3	2	2	1	1	1	1	—	—	—	—	12
Ophthalmia neonatorum	1	2	3	2	8	2	3	6	5	1	5	7	45
Cholera	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia	55	81	59	30	22	23	21	14	19	26	23	37	410
Malaria	—	—	—	—	—	—	—	—	—	—	—	—	—
Dysentery	—	—	—	—	—	—	—	—	—	—	—	—	—
Trench fever	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	109	119	123	93	110	75	75	57	61	75	86	87	1070

TABLE I 2.

Infectious diseases other than tuberculosis notified during 1922; showing ages.

Disease	und. 1 yr.	1-2 yrs.	2-3 yrs.	3-4 yrs.	4-5 yrs.	5-10 yrs.	10-15 yrs.	15-20 yrs.	20-35 yrs.	35-45 yrs.	45-65 yrs.	65 yrs. up	Total
Smallpox	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlatina	3	6	20	24	26	163	56	33	31	2	—	—	364
Diphtheria and membra- nous croup	4	4	9	9	12	44	20	19	12	—	1	—	134
Erysipelas	1	—	—	—	—	4	3	5	18	20	19	3	73
Typhus fever	—	—	—	1	—	—	—	—	6	2	1	—	10
Typhoid fever	—	—	—	—	1	3	2	3	2	1	2	—	14
Continued fever	—	—	—	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebro-spinal meningitis	—	—	—	—	—	1	—	1	—	—	—	—	2
Encephalitis lethargica (acute)	—	—	—	—	—	—	—	—	—	—	3	—	3
Polio-encephalitis (acute)	—	—	1	—	—	—	—	—	—	—	—	—	1
Poliomyelitis (acute) ..	—	—	—	—	—	1	—	—	1	—	—	—	2
Puerperal fever	—	—	—	—	—	—	—	1	10	1	—	—	12
Ophthalmia neonatorum	45	—	—	—	—	—	—	—	—	—	—	—	45
Cholera	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia	58	80	38	17	8	45	11	18	51	28	37	19	410
Malaria	—	—	—	—	—	—	—	—	—	—	—	—	—
Dysentery	—	—	—	—	—	—	—	—	—	—	—	—	—
Trench fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	111	90	68	51	47	261	92	80	131	54	63	22	1070

Encephalitis lethargica.—3 cases were notified during the year, viz.:—

Female, 47 years of age; treated at home, and subsequently died.

Male, 49 years of age; treated at home, and subsequently died.

Female, 52 years of age; treated at home, and subsequently died.

Typhus.—On 29th March, 1922, nine patients were admitted to the Birkenhead Infectious Diseases Hospital, suspected to be suffering from typhus fever.

Seven of the patients were removed from the Birkenhead Poor Law Hospital at Tranmere, where they had been under treatment for varying periods. Two of these were convalescent, having been in hospital 30 and 20 days respectively; the remainder were recent cases—one had been in hospital 4 days, two 2 days, and two 1 day. Of the other two patients, one had been presented for admission at the Poor Law Hospital on 29th March, after the other cases had been removed, and was sent on to the Infectious Diseases Hospital. The other was taken direct from her home.

The two convalescent cases, admitted to the Poor Law Hospital at a time when the recent influenza wave was at its height, had been dealt with as cases of influenza, several of their symptoms being suggestive of this disease. It had been recognised, however, that certain unusual features were present; and with the appearance from the same or neighbouring houses of fresh cases which showed a similar clinical

picture the suspicion was aroused that some other infectious disease of a specific character was being handled, and the Medical Officer of Health was communicated with. The cases were seen in consultation with Dr. French, the medical superintendent of the Poor Law Hospital, on the evening of Tuesday, 28th March, and were removed to the Infectious Diseases Hospital on the following day.

A short observation of the patients in the Infectious Diseases Hospital, particularly of the two most recent cases, confirmed the suspicion that they were suffering from typhus fever; and further corroboration followed when a positive reaction to the Weil-Felix test* was obtained.

The history of two other patients who had been admitted to the Poor Law Hospital on 28th February and 2nd March, and who had died there on 6th and 7th March respectively, leaves little doubt that they succumbed to the same disease. Finally, a boy of four years of age, a son of one of the above cases, who was admitted to the reception ward at the Infectious Diseases Hospital for quarantine on 31st March, developed symptoms of typhus on 7th April, having been infected prior to admission. The total number of recognised cases was, therefore, twelve. It would be unreasonable, however, to expect that this represents in its totality the extent of the outbreak, and that no cases escaped identification.

Tabular list of cases.—Particulars of the twelve cases, with regard to homes, dates of onset, &c., are shown in the following table.

TABLE I 3.

Typhus cases: Age, sex, &c.

Case No.	Home	Initials	Age	Sex	Probable date of onset	Admission to P. L. Hospital	Admission to I. D. Hospital	Result
1	A	M. L.	32	F	20/2	27/2	29/3	Recovered
2	B	T. O.	18	M	23/2	28/2	—	Died 6/3/22
3	B	H. O.	53	F	23/2	2/3	—	Died 7/3/22
4	B	I. O.	24	F	2/3	9/3	29/3	Recovered
5	B	J. O.	52	M	20/3	27/3	29/3	Recovered
6	B	L. O.	20	F	23/3	27/3	29/3	Recovered
7	B	J. O.	28	M	23/3	28/3	29/3	Recovered
8	B	W. O.	24	M	27/3	28/3	29/3	Died 12/4/22
9	C	M. R.	31	F	23/3	—	29/3	Recovered
10	D	M. R.	44	F	19/3	25/3	29/3	Recovered
11	E	C. D.	44	F	23/3	—	29/3	Recovered
12	(C)†	J. R.	4	M	7/4	—	7/4	Recovered

* The technique recommended by Professor Wilson, of Belfast, was followed.

† Developed disease after admission to reception ward, to which he was admitted on 31st March; having presumably contracted infection at home.

- Homes:—A 7, Oliver Place.
 B 6, Oliver Place.
 C 4, Oliver Place.
 D 15, Briardale Road.
 E 98, Brook Street.

Clinical features.—The clinical features of the 10 patients treated at the Infectious Diseases Hospital differed considerably. It might, in fact, be said that among this comparatively small number all types of cases were seen, from the mild case which, had it not been for the history and the diagnostic tests applied, would certainly have escaped detection, to the severe form resulting in a fatal issue.

One outstanding feature given in the history of all the patients was *headache* generally coming on suddenly and in a severe form. Other symptoms were not so constant. The cases may be classed as follows:—

Convalescent.—No symptoms of disease on admission to		
Infectious Diseases Hospital	2	(Cases 1 & 4)
Mild	2	(Cases 9 & 12)
Moderate severity	2	(Cases 5 & 6)
Severe	4	(Cases 7, 8, 10 & 11)

The individual cases, however, showed such differences that it will be best to describe each separately. Acknowledgment and thanks are due to Dr. French, medical superintendent of Tranmere Infirmary, for certain clinical data collected regarding patients during their period of stay in that institution; and to Dr. Percival Letts, of the Ministry of Health, and Dr. Stallybrass, both of whom kindly discussed the cases and outbreak generally.

Case No. 1.—M.L. Female, 32. Took ill 20/2/22. Headache. Sore throat. Went to bed at once. Patient was admitted to Tranmere Infirmary on 27/2/22, but does not remember this. On admission to Infectious Diseases Hospital she was not complaining; appeared in ordinary health, gave a faint positive Diazo reaction* and presented no other features of clinical interest. Discharged cured 13/4/22.

Case No. 4.—I.O. Female, 24. Took ill, 23/2/22. Took suddenly ill when in a shop, went "light-headed," kept on feet for a week, but on 2/3/22, feeling "ill all over" and having pains in the chest, went to bed. On admission to Infectious Disease Hospital patient was not complaining, and beyond a faint positive Diazo reaction* which persisted for four days after admission there were no features of clinical interest. Discharged cured 13/4/22.

Case No. 5.—J.O. Male, 52. Took ill 18/3/22, complaining then of pains in head and back, shivering, cough. Pains spread all over and "couldn't get out of bed." Was treated at home for a week and admitted Tranmere Infirmary 27/3/22. On admission to the isolation hospital on 29/3/22 this man looked ill, was complaining of headache and cough and had some expectoration. T 102.2, P 96.

* A doubtful reaction. In the following table only quite definite positive findings have been entered as "positive" and doubtful ones regarded as "negative."

Evidence of arterio-sclerosis; slight bronchitic signs throughout the chest, slightly deaf, dazed and rather resentful of questions. There were one or two indefinite spots on the back but no real rash. Diazo reaction positive. He remained in much the same state, chest symptoms being prominent, till 2/4/22, when there was a sudden improvement, the patient seeming to be better in every way. The next day not only was he demanding food vigorously, but was most anxious to get up. After this crisis he rapidly improved and convalescence was uneventful. Discharged as cured 27/4/22.

Case No. 6.—L.O. Female, 20 years. Took ill on 23/3/22, when she complained of headache, swollen glands in neck and a pain in the right shoulder. Took to bed 25/3/22, as she was feeling much weaker and worse in every way. Admitted Tranmere Infirmary 27/3/22 and Infectious Diseases Hospital 29/3/22. On admission patient was mentally quite clear and was complaining of headache, sore neck, weakness and cough. On examination no rash was seen. Diazo reaction brilliantly positive; patient looked ill, under-nourished and anæmic. T 102.4, P 100. Headache and cough persisted for a few days, but by 4/4/22 she was definitely improving, and was practically convalescent by 6/4/22. On 7/4/22 complained of pain in left calf, which was tender on palpitation, and the whole leg markedly swollen—a diagnosis of *popliteal thrombosis* was made. This complication cleared up after about a week when the patient made a good recovery. Discharged cured 9/5/22.

Case No. 7.—J.O. Male, 28 years. Took ill on 21/3/22 with shivering, cough and headache. On admission to the Infectious Diseases Hospital on 29/3/22 he complained of "being sore all over," but could not give a connected account of how he felt as he was distinctly delirious—a low muttering stupor. He was obviously ill, had a cough and markedly dilated pupils. The tongue was furred and there was a definite rash. The rash was general, it was profuse on the trunk, being more marked on the back than on the chest and abdomen, it was well marked on the legs and also on the arms, the forearms showing the fewest spots. The face was blotchy but showed no spots. The individual spots at this stage resembled those of enteric. Two days later the rash was even more marked, fresh enteric-like spots appeared and in addition deeper subcuticular spots were showing up well, giving the skin a distinctly mottled appearance. During this time patient was very ill. Delirium continued and the bowels were rather loose, tremor of lips and hands noted. On 6/4/22 rash began to fade and there was a distinct improvement in general condition—the patient being clear mentally and complaining of hunger for the first time. Next day the improvement was maintained and the patient was practically convalescent. The change, in a day or two, from a profoundly ill, to an almost well, man was very striking. There were no special features of interest during convalescence and patient was discharged cured on 27/4/22.

Case No. 8.—W.O. Male, 24 years. History given by patient was that on waking up on 25/3/22 he felt ill, having a headache, cough, pains all over, and a shivering attack. Nevertheless he was up during the next two days though feeling ill all the time. On 28/3/22 he took his brother (Case No. 7) up to Tranmere Infirmary, and, it being noticed

that he was ill, he was detained there. On admission to the Infectious Diseases Hospital he was complaining of intense headache, cough, and pains in the back and hips. Although he was obviously ill, his mental condition was clear. Slight deafness. T 104.2, P 96. Brilliant Diazo. There was a well marked rash on sides of the neck and the trunk (most profuse on back). Spots were noted on the arms but none on the legs. The individual spots were small, lenticular, slightly raised, pinkish papules not unlike enteric. None were seen on the face. Next day the patient was much the same but the rash was markedly petechial on the right forearm, being obviously brought out by the application of the tourniquet for vein-puncture on the previous day. On 2/4/22 the rash was still more marked, and subcuticular elements were made out, the distribution remaining as before. On 3/4/22 the condition of the patient was worse. He still complained chiefly of headache and was markedly cyanosed. He was restless and delirious at times. Next day much worse, semi-conscious, restless, more cyanosed; constant hiccough. Rash well marked. He continued much in this state for several days, rash well marked, mental condition very confused, with struggling, muttering, and shivering fits. On 8/4/22 the rash was still very marked and fresh spots were noted on the arms, general condition as before. On 10/4/22, as his condition was getting desperate, it was decided to give him whole blood intramuscular injections from a typhus convalescent—adopting the technique which has been used with success by Zingler in cases of toxic scarlet fever. The donor was his father (Case No. 5), then in the 24th day of disease and the 10th of his convalescence; 125 c.c. of whole blood was transferred—the temperature fell to normal within 12 hours (? artificial crisis) but there was no real improvement in the other symptoms. On 11/4/22 he was still very ill, but more drowsy and not so restless. He died 12/4/22.

Case No. 9.—M.R. Female, 30 years. On 22/3/22 this patient complained of severe headache and went to bed—the only other symptom complained of was some stiffness in all joints. On admission to the Infectious Diseases Hospital (29/3/22) she still had some headache but otherwise did not complain. The face was flushed and tongue furred. She was 7½ months pregnant. Diazo positive. There was an indefinite rash present consisting of a few papules on the chest and rather more on the back—under normal conditions they would hardly have attracted attention. She slept well and showed no further symptoms during the next few days. By 6/4/22 the temperature was normal and the patient convalescent. Discharged as cured 27/4/22.

Case No. 10.—M.E.R. Female, 44 years. This patient was too ill to give any definite history. She was in Tranmere Infirmary from 30/1/22 to 4/3/22 suffering from pneumonia. She returned home on 4/3/22 and took ill again on 19/3/22, when she collapsed, had severe headache and malaise. She was re-admitted to Tranmere on 25/3/22, and on that date was stated to have had a rash. On admission to the Infectious Diseases Hospital on 29/3/22 she was very ill and exhausted, too weak to speak and with rapid respirations. There were a few spots on the abdomen and chest, and rather more on the back—none were noted on the limbs. T 100, P 129. Diazo brilliantly positive. This patient lay in an absolutely exhausted state until 6/4/22, when she showed signs of more life and gradually began to pick up strength.

Case No. 11.—C.D. Female, 44 years. This patient took ill on 23/3/22, when she suddenly began to vomit, had pains all over, and a severe headache. On admission to Infectious Diseases Hospital (29/3/22) she only complained of a "thick feeling in the throat." The face was flushed and somewhat bloated. Distinct deafness, pink conjunctivæ and small pupils. Cough. Slightly cyanosed. T 100.2, P 116. Diazo brilliantly positive. She had a well marked rash on chest, abdomen, back and upper arm. It was most profuse on the back and there was none on the legs. The elements were somewhat large and persisted after pressure—subcuticular mottling was well seen—i.e., spots resembling faint indefinite petechiæ. The patient was dull, stupid, and obviously ill. On 31/3/22 the rash was definitely petechial on the forearms, particularly so on the right side, where the tourniquet had been applied; there were also a few petechial spots on the legs, the stools were loose and light yellow in colour. For three days this patient was acutely ill—marked rash with the subcuticular element very obvious, dusky red face, red eyes, small pupils, tremors, stupid, deaf, muttering. On 4/4/22 she showed a distinct improvement and smiled for the first time. The rash was beginning to fade. Steadily improved, but on 11/4/22 (20th day of disease) she developed a left otorrhœa. This gave rise to no trouble and was dry within a week, after which she made an uneventful recovery. Discharged as cured 27/4/22.

Case No. 12.—J.R. Male, 4 years. This boy was a son of Mrs. M.R. (Case No. 9). He was admitted to Reception Ward 8 on 31/3/22 together with other typhus contacts. On 7/4/22 he had a temperature 100.8, was fretful, and there was a definite rash on the trunk and limbs. The spots were widely separated, resembled enteric spots, and were very distinct. The constitutional symptoms were slight. He was transferred to the typhus ward. The Diazo reaction was strongly positive. The next day the rash was more profuse, though the elements were not so distinct, this being due to the development of subcuticular mottling. Both the trunk and limbs were involved—it was most marked on the buttocks, more on the back than the front and more on the legs than the arms. The throat was slightly congested and the tongue slightly furred, the mucous membranes of mouth were clear and shiny, the face blotchy and showing a slight tremor. Slight cough; child still fretful though not really ill. Sleeping and eating well. No further symptoms. Rash began to fade 9/4/22, and was gone by 12/4/22. Uneventful convalescence. Discharged cured 9/5/22.

Diagnostic features.—The difficulties in the way of the early diagnosis of a disease with which few practitioners in this country have had any practical acquaintance are, naturally, very great. At the same time, once it was recognised that it might be typhus we were dealing with, the diagnostic difficulties became very much less. Once typhus was in mind, the history of a sudden onset, the presence or history of a rash, positive Diazo and Weil-Felix reactions left no room for doubt that a case *was* typhus. Here it must be emphasised that clinical and laboratory findings must be taken together—it is a mistake to speak of clinical as opposed to laboratory diagnosis, and a diagnosis can only be arrived at by a careful summing up of all factors.

With regard to the differential diagnosis, only two other diseases needed seriously to be thought of: influenza and enteric. (a) With regard to the former it is wise to adopt an attitude of caution; as a convenient term for describing an acute febrile condition without specific character it may be very useful, but apart from epidemics such as occurred in 1918-19 it may be seriously questioned whether the disease is a clinical entity. At all events, in every case of so-called influenza every other possibility must be reviewed. In the outbreak dealt with, the presence of a rash, the appearance of this rash, and the presence of a positive Diazo reaction were sufficient to exclude influenza. (b) Enteric is more difficult, and the distinction mainly clinical, the important points being sudden onset, type of rash, particularly as to its distribution, and the presence of subcuticular and hæmorrhagic elements, the absence of abdominal symptoms, and, though too late to be of much practical importance, the crisis, and the remarkable sudden improvement that occurs then. The Widal test is of no distinctive value as it is frequently positive in typhus. The Weil-Felix reaction is of great practical value, though being a non-specific reaction further experience of its presence or absence in enteric is to be desired.

So much stress has been laid upon the laboratory helps to diagnosis that it will be well to give a summary of the findings in each case in the form of a table.

TABLE I 4.
Typhus Cases—showing results of laboratory findings.

NOTE.—All days referred to are days of disease. The figures in the agglutination tests show the highest dilution in which the test was positive. A series of dots after the figure (e.g., 1000....) indicate the limit of the test, and it is possible that a higher end-point would have been obtained had this been tested for.

Case No.	The Weil-Felix Reaction	The Diazo Reaction	The Widal Reaction
1	Positive 1000.... 39th day Negative 50th day	Negative 38th day	Negative 50th day
4	Positive 1000 35th day	Negative 37th day	
5	Positive 1000.... 13th day Positive 1000 23rd day	Positive 12th & 14th days Negative 16th day	Negative T.A.B. 23rd day
6	Positive 1000.... 12th day Positive 100 21st day	Positive 8th & 13th days Negative 17th day....	Negative T.A.B. 21st day
7	Positive 100000 14th day Positive 1000 21st day	Positive to 17th day Negative 21st day	Positive T. 100 21st day
8	Negative 6th day Positive 100 12th & 1000 17th days	Positive 6th to 19th day (Died)	Positive T.A.B. all 100.... 17th day
9	Positive 1000.... 13th day Positive 100 22nd day	Positive 10th & 11th days Negative 13th day	Negative T.A.B. 22nd day
10	Positive 1000.... 13th day Positive 100 25th day	Positive 12th & 15th days Negative 17th day	Negative T.A.B. 25th day
11	Positive 1000.... 8th day Positive 100 21st day	Positive 8th to 15th days Negative 17th day....	Positive T. 100.... 21st day
12	Positive 1000 6th day	Positive 2nd to 10th days Negative 11th day	Negative T.A.B. 6th day

It will be seen that the Weil-Felix test was positive in all cases. It was not present in one case on the 6th day, but appeared later, and another previously positive was negative on the 50th day. The Diazo reaction was positive, generally speaking, throughout the febrile period and became negative after the crisis. The Widal was irregular, being positive in three out of the nine cases investigated.

Method of spread.—It has always been recognised that typhus tends to flourish and spread in places where dirt abounds—rooms with dirty floors, dirty walls, dirty bedclothes, calling for the use of soap and water; and dirty air, calling for the use of open windows. It has also long been known that another disease is fostered by the same conditions—the disease known as pediculosis, whose manifestations are the crawling louse and the louse-egg or “nit.” The facts that in the twentieth century the latter disease is still widely prevalent among certain sections of the community, and that its presence is regarded with complacency instead of with horror and disgust, are difficult to explain or to excuse.

Recent investigations have shown that these two diseases are associated to this extent at least, that the infection of typhus fever is carried from person to person in one way and in one way only—by lice. After feeding on and absorbing blood from a typhus patient they transfer their attention to a healthy individual; and in due course the latter develops the characteristic symptoms of typhus fever.

Nits from an infected louse can hatch out young lice which are infected and can carry the disease.

Administrative action taken to check spread of outbreak.—The chief steps taken in dealing with the outbreak under consideration may be briefly indicated.

(a) Removal of all recognised cases to the Infectious Diseases Hospital.

All patients were passed through a delousing room before entering the ward. Here hair was shaved and all measures taken to remove all lice and lice eggs (nits).

Protection in the form of special overalls, &c., were devised for the nurses, medical staff, porters, &c.

(b) Removal of contacts from patients' homes to an emergency quarantine station fitted up in the Infectious Diseases Hospital.

All these individuals were also deloused and bathed before admission.

(c) Search for all persons who had been in contact with known cases of the disease, and constant watch for new cases.

The following letter was sent to medical practitioners in the area:—

Dear Sir,

Nine patients have been removed to the isolation hospital suspected to be suffering from typhus fever. The houses where these patients have been resident are as follows:—

7, Oliver Place
6, Oliver Place
4, Oliver Place
15, Briardale Road
98, Brook Street.

The main features exhibited are briefly,

- (1) Onset sharp, with
chilliness
headache
sickness (with or without vomiting)
rising temperature.
- (2) Deafness.
- (3) Mental condition dull.
- (4) Conjunctivæ injected.
- (5) Rash appearing about 3rd or 4th day; distribution general, but more marked on trunk and absent from face. The rash consists of superficial spots (somewhat resembling enteric) together with subcuticular mottling.
- (6) Temperature reaches its height (approximately 103°) in about three days. Continued fever from this point onwards. Crisis may occur on 13th day, but termination may be in the nature of lysis, and may take place earlier.

The symptoms exhibited may show very considerable divergence from the standard text-book description of typhus, and mild cases (especially where opportunities for continuous observation have been absent) may easily have escaped detection. I shall be much obliged if you will be good enough to let me know by return whether you have recently seen any cases showing the constitutional symptoms referred to above (perhaps suggesting influenza) together with an indefinite rash.

It will also be of great assistance if you will let me have information at once regarding any fresh cases showing suspicious features which may occur in your practice.

Yours faithfully,

D. MORLEY MATHIESON,

Medical Officer of Health.

31st March, 1922.

To the Medical Practitioners in Birkenhead.

P.S.—It is now generally agreed that the chief, if not the only, method of transference of infection from patients to healthy individuals is by lice.—D.M.M.

(d) Disinfection by steam of all clothing, &c., used by patients and contacts.

Destruction of rags and other rubbish—present in abundant quantities in many houses where space is limited.

(e) Disinfection and disinfestation of houses.

Most of the houses were of a very poor and dirty type. The disinfection and disinfestation had to be carried out at considerable risk to the men engaged. Walls, ceilings, floors, and furniture were washed with corrosive sublimate solution, and sulphur fumigation was carried out.

Similar steps were also taken in connection with the wards, &c., at the Tranmere Infirmary which had been occupied by patients suffering from the disease.

Cerebro-spinal fever.—2 cases were notified during the year, viz.—

Male, 7 years of age; treated at Infectious Diseases Hospital, Birkenhead, and subsequently recovered.

Male, 19 years of age; treated at Infectious Diseases Hospital, Birkenhead, and subsequently died.

Smallpox.—There were no cases of smallpox notified during the year.

VACCINATION.

The following is the latest completed information relative to vaccination in the Borough and relates to the period 1st January, 1921, to 31st December, 1921 viz.:—

No. of births	3833
Successfully vaccinated	2653
Insusceptible	17
Had smallpox	—
Number in respect of whom statutory declarations of conscientious objection have been received	683
Died unvaccinated	343
Postponements, removals or cases not found	237

DISINFECTION.

Books.—92 Public Library books were collected from infected houses and disinfected.

Dwellings.—770 house-disinfecting notices were served; 761 houses or parts of houses were disinfected during the year.

Bedding and clothes.—Infected bedding and clothes were collected from 811 dwellings and disinfected at the disinfecting station. In 245 further cases infected or discarded bedding and clothes were destroyed.

Visits and revisits paid to houses, etc., by Disinfecting Inspector.—Inspector Taylor paid 3,926 visits and revisits to property during the year in connection with disinfection after infectious diseases (including tuberculosis).

Cleansing of persons.—A special bath is provided at the disinfecting station in Corporation Road for dealing with persons who *voluntarily* apply under the Cleansing of Persons Act, 1897. During the year no cases were dealt with.

ISSUE OF DIPHTHERIA ANTITOXIN.

During the year, in accordance with the provisions of the Diphtheria Antitoxin (outside London) Order, 1910, diphtheria antitoxin was issued to 12 medical practitioners; 23 phials of 2,000 units each being given out, a total of 46,000 units.

THE INFECTIOUS DISEASES HOSPITAL.

Cases treated during 1922.—At the beginning of the year there were 32 patients in hospital. New cases admitted during the year numbered 388, making a total of 420 patients dealt with. 32 patients were in hospital at the end of the year.

The diseases treated, together with the sex of the patients and particulars as to recoveries and deaths, are shewn below.

TABLE I 5.

Patients sent in as suffering from	In hospital at beginning of year	Admitted during year	Died during year	Discharged cured during year	Remaining in hospital at end of year
Scarlet fever M.	6	105	2	99	10
..... F.	16	143	2	146	11
Diphtheria M.	4	50	5	43	6
..... F.	6	46	1	47	4
Enteric fever M.	—	1	—	1	—
..... F.	—	4	—	4	—
* Enteric fever (?) M.	—	1	1	—	—
..... F.	—	1	—	1	—
Cerebro-spinal meningitis ... M.	—	2	1	—	1
..... F.	—	—	—	—	—
Typhus fever M.	—	4	1	3	—
..... F.	—	6	—	6	—
Typhus fever contacts M.	—	16	—	16	—
..... F.	—	9	—	9	—
Total	32	388	13	375	32

* The two query cases of enteric fever were upon admission to hospital found not to be suffering from that disease, and the female patient was returned to her home. The male patient died in the hospital from pneumococcal meningitis.

E. P. Smith memorial fund.—One suitable case received benefit from this fund during 1922.

HOME NURSING.

An arrangement made between the Corporation and the Birkenhead District Nursing Society, dating from 1st July, 1919, provides for the home nursing of cases of influenza and pneumonia. During the year 1922 the Society's nurses paid 1,927 visits in respect of 125 cases.

MUNICIPAL LABORATORY.

The nature and number of the examinations, etc., made at the Municipal Laboratory during 1922 is shown in the following table:—

Examination	Pos.	Neg.	Total
Sputum for B. tuberculosis	87	283	370
Other material for B. tuberculosis	—	8	8
Cultures for B. Diphtheriæ	116	252	368
Blood tests (Widal) against enteric group	9	12	21
	212	555	767

Other examinations were made as follows:—

Blood for Weil-Felix reaction	26
Cerebro-spinal fluid	12
Miscellaneous	15
	<hr/> 53

MENTAL DEFICIENCY.

ADMINISTRATIVE ARRANGEMENTS.

The work of dealing with cases of mental deficiency in the Borough in accordance with the provisions of the Mental Deficiency Act, 1913, is carried out under the Mental Deficiency Committee, with the Town Clerk as clerk to the committee.

Mentally defective children between the ages of 7 and 16 are dealt with by the Education Committee under the Elementary Education (Defective and Epileptic Children) Acts, 1899 and 1914.

At the end of 1922 the medical staff engaged on the work of ascertainment of cases, certification, etc., consisted of the Medical Officer of Health and Assistant Medical Officers; and 14 nurses gave part time to home visiting.

CASES DEALT WITH UNDER MENTAL DEFICIENCY ACT, 1913.

During the year 9 new cases were reported; bringing the total number of cases dealt with under the Mental Deficiency Act, 1913, since that Act came into force, to 185.

3 cases were sent to institutions by judicial order.

1 case was sent into an institution as an "election" patient.

1 case was placed under supervision pending institutional vacancy arising; 1 case was placed under home supervision; 23 cases were admitted to the workhouse as poor law cases; 6 cases were removed to hospitals under Lunacy Acts.

3 cases died during the year.

7 first visits and 429 revisits were paid to the homes of mental defectives by the health nurses.

CASES DEALT WITH UNDER THE ELEMENTARY EDUCATION (DEFECTIVE AND EPILEPTIC CHILDREN) ACTS, 1899 and 1914.

Reference to this subject will be found in the school medical inspection section of this report (page 83).

HOUSING AND GENERAL SANITATION.

STAFF.

The staff engaged on the work of housing inspection consisted, until February, 1922, of the Chief Inspector, one general housing inspector, and four district sanitary inspectors. On the death of the late Chief Inspector, which occurred on the 25th February, 1922, Mr. Longstaff, the housing inspector, was appointed Chief Inspector; the position of housing inspector has not since been filled.

The four district sanitary inspectors devote such time to the work of housing inspection as their multifarious other duties permit.

NUMBER OF DWELLING HOUSES, ETC., IN BOROUGH.

At the time of the 1911 census the number of inhabited houses was 24,343, giving an average number of persons per house of 5.3; the number of houses in the Borough at the time of the 1921 census was 26,630, giving an average number of persons per house of 5.4.

The approximate number of dwelling houses of all descriptions within the Borough, excluding institutions, at 31st December, 1922, was 27,233.

The approximate number of schoolrooms, warehouses, etc., was 1,473.

NEW HOUSES ERECTED AND INSANITARY HOUSES DEMOLISHED.

During 1922, 92 new houses were erected in the Borough, 58 of which were erected under the Corporation's housing schemes. The figures for the past nine years are as follows:—

			Erected	Demolished
January 1st to December 31st, 1914	246	18		
" " 1915	136	32		
" " 1916	28	1		
" " 1917	1	18		
" " 1918	Nil	36		
" " 1919	Nil	7		
" " 1920	112	1		
" " 1921	167	Nil		
" " 1922	92	4		
			<hr/>	<hr/>
			782	117
			<hr/>	<hr/>

The number of houses not complying with the building byelaws erected with the consent of the local authority under Section 25 of the Housing, Town Planning, etc., Act, 1919, was 58.

UNINHABITED PROPERTY.

The following is a return of uninhabited property in Birkenhead for the past year:—

District	Half-year ended 30th June, 1922					Half-year ended 31st Dec., 1922				
	Private houses	Shops	Cottages	Dock cottag's	Total	Private houses	Shops	Cottages	Dock cottag's	Total
Birkenhead.....	10	5	1	—	16	18	15	1	—	34
Claughton and Oxtan	53	3	2	64	122	60	1	3	52	116
Tranmere and Bebington ...	27	1	—	—	28	37	—	2	—	39
Totals ..	90	9	3	64	166	115	16	6	52	189

The total uninhabited and unoccupied property, 31st December, 1921, was 151, so that there was an increase of 38 at the end of 1922 as compared with the previous year.

ADMINISTRATIVE ACTION TAKEN IN CONNECTION WITH HOUSING AND GENERAL SANITATION.

(a) Mainly under Housing Acts.

During the twelve months ending December 31st, 1922, work was carried out by the department under the provisions of the various Housing Acts, and the regulations made by the Local Government Board dated 2nd September, 1910. The particulars of this work are as follows (the arrangement is based on that suggested by the Ministry of Health):—

Inspection.

- | | |
|---|-----|
| (1) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts. All these houses were also recorded under the Housing (Inspection of District) Regulations, 1910..... | 456 |
| (2) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation | 3 |
| (3) Number of dwelling-houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation | 181 |

Remedy of defects without service of formal notices.

Number of defective dwelling-houses rendered fit in consequence of <i>informal</i> action by the local authority or their officers	—
--	---

Action under statutory powers.**A. Proceedings under section 28 of the Housing, Town Planning, etc., Act, 1919.**

- | | |
|---|-----|
| (1) Number of dwelling-houses in respect of which notices were served requiring repairs | 181 |
|---|-----|

(2) Number of dwelling-houses which were rendered fit—	
(a) by owners	113
(b) by local authority in default of owners	—

(3) Number of dwelling-houses in respect of which closing orders became operative in pursuance of declarations by owners of intention to close	—
--	---

B. Proceedings also taken under the Public Health Acts in connection with above properties.

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	283
--	-----

(2) Number of dwelling-houses in which defects were remedied—	
(a) by owners	271
(b) by local authority in default of owners	—

C. Proceedings under sections 17 and 18 of the Housing, Town Planning, etc., Act, 1909.

No proceedings were taken during the year under sections 17 and 18 of the Housing, Town Planning, etc., Act, 1909.

(b) Mainly under Public Health Acts.

In addition to the housing work outlined above, other work, of which the following is a summary, was carried out by the inspectors during the year. (The work of scavenging, removal of refuse, flushing of drains, and care of sewers is entirely dealt with by the Borough Surveyor's department.)

Number of houses inspected (not included in preceding section)	3787
Number of re-inspections of houses (not included in preceding section)	12970
Number of unhealthy conditions reported and investigated	9416
Number of formal notices given	3324
Number of informal notices given	1679
Number remedied after formal notice and without proceedings	3324
Number of cases in which proceedings had to be taken	—
Number abated after proceedings	—
Defects referred for action:—	
(a) to Borough Surveyor	464
(b) to Water Engineer	156
(c) to Borough Treasurer	74
(d) to Director of Education	16
(e) to West Cheshire Water Co.	6
Number of excavations made for the purpose of testing the condition of house drains	32
Number of smoke tests applied to drains of premises reconstructed under the supervision of this department	53
Number of water tests applied to drains.....	77

Number of smoke tests applied to the drains of new buildings, in conjunction with the Borough Surveyor's department	17
Number of smoke observations taken	25
Number of smoke nuisances from factory and other chimneys reported to the Health Committee	4
Number of schools specially examined by the district inspectors	31
Number of cowsheds inspected	8
Number of dairies and milkshops inspected	498
Number of inspections <i>re</i> offensive trades	204
Number of sewer ventilators inspected	6
Number of street gullies inspected	20
Number of caravans inspected	43
Number of caravans re-inspected	293
Number of back passages inspected	83
Number of investigations regarding the keeping of pigs, fowls, and other animals	29
Miscellaneous inspections (not included above)	57

(c) **Actual defects in domestic dwellings dealt with under (a) and (b) above.**

As a result of the inspection of domestic dwellings carried out during the year, the following defects were found, and notices served with reference thereto:—

<i>Brickwork—</i>		<i>Ashpits and ashbins—</i>	
Walls defective	129	Roofs defective	56
Fireplaces defective.....	104	Walls defective	69
Washing boilers defective	93	Deep and insanitary ...	59
		Inside walls not cemented	44
<i>Fireplaces—</i>		Without doors.....	57
Ironwork defective	131	Without roofs	30
Jambs defective	67	Doors defective	8
Hearthstones defective...	42	Premises without ashpits	
Flues defective	45	or ashbins	205
		Ashbins defective	566
<i>Windows—</i>		Ashpits abolished	75
Woodwork defective ...	200	<i>Drainage—</i>	
Sashcords broken	296	Drains obstructed	1057
Fasteners defective	105	Drains defective	176
<i>Water closets—</i>		Gully traps defective ...	23
Roofs defective	205	Gully traps without grates	39
Walls defective	126	Gully traps without guards	13
Cisterns defective	150	Soilpipes defective ..	53
Without water supply ...	181	Downspouts connected	
Floors defective	54	to drains	8
Seats defective	107	Gutters defective.....	227
Risers defective	38	Gutters obstructed	130
Basins broken	160	Downspouts defective...	188
Imperfect connections ..	305	Downspouts obstructed .	88
Doors defective	153	Smoke tests applied ...	53
Doors unhinged	64	Water tests applied..	77
		Openings for examina-	
		tions.....	32

<i>Sinks—</i>		<i>Doors—</i>	
Defective	47	Woodwork defective ...	115
Waste pipes defective...	152	Unhinged.....	36
Waste pipes too short...	44	Fasteners defective	164
• Piers defective.....	16	<i>Staircases—</i>	
<i>Baths—</i>		Treads defective	11
Waste pipes defective...	25	Handrails defective.....	11
Waste pipes obstructed..	21	Balusters missing.....	20
<i>Yards and paths—</i>		<i>Cleansing—</i>	
Surfaces defective	315	Walls	145
Accumulations of refuse.	84	Ceilings	213
<i>Plasterwork—</i>		<i>General—</i>	
Walls	416	Floors defective	234
Ceilings	75	Skirtings defective	19
Round windows	23	Dampness of walls	45
Round fireplaces	17	Roofs defective	190
		<i>Miscellaneous—</i>	
		(Items not enumerated	
		above)	373

(d) Increase of Rent and Mortgage Interest (Restriction Act, 1920.

During the year 47 applications for certificates under section 2 of the Act were received and considered by the Health Committee. 47 certificates were granted.

Enquiries were subsequently made in order to keep a record of the work carried out after the granting of the certificates. 165 revisits were paid in this respect, and in 28 instances the whole of the defects stated in the certificates had been remedied and the houses put into a satisfactory state of repair.

(e) Theatres, music halls, &c.

(Ministry of Health Circular No. 120, dated 25th August, 1920). 21 visits were made to theatres, music halls and other places of entertainment in which the conditions as to ventilation, structure of dressing rooms, &c., had been found not to be satisfactory and which were reported upon to the Health Committee and to the Clerk to the Borough Justices for the information of the licensing authorities in October, 1920.

(f) Rats and mice.

The following is a summary of the work carried out by the district inspectors under the provisions of the Rats and Mice (Destruction) Act, 1919.

No. of premises inspected	104
No. of visits and revisits	318
No. of notices served on occupiers	86
No. of notices served on owners	31
No. of premises satisfactorily dealt with	63
No. of premises still under observation or where work is being carried out	35

(g) Inspection of lodging houses, &c.

During the year the inspector of common lodging houses, &c., paid regular visits to common lodging houses, and houses let in lodgings, and to the Corporation tenement dwellings. The following is a summary of the work done:—

Registered common lodging houses (15 in number):

Day inspections	3494
Night inspections	101
Insanitary conditions reported and dealt with.....	23

Houses let in lodgings (778 in number):

Day inspections	1161
Night inspections	—
Insanitary conditions reported and dealt with	89

Corporation tenement dwellings (132 in number, visited weekly): No. of visits

Insanitary conditions reported and dealt with	5148
	214

SHOPS, FACTORIES, AND WORKSHOPS.

SHOPS ACTS, 1912—1921.

Visits paid.—The total number of visits paid to the various shops in the Borough under the provisions of the above Acts, and Orders made thereunder, during the year was 1,248.

Infringements reported and proceedings taken.—15 infringements were reported and 8 letters of warning sent in connection therewith. In 7 cases proceedings were taken for failing to close shops for the sale of certain articles on the weekly half-holiday. Three convictions were recorded and four cases were dismissed.

Transference of duties under the Shops Acts.—On the recommendation of the Special Committee appointed by the Council on the 5th April, 1922, and set out in their second interim report, the duties under the Shops Acts were transferred to the police at the end of the year.

POISONS AND PHARMACY ACT, 1908, AND ORDERS, 1909.

Visits were made to 8 shops and premises in the Borough in which insecticides containing poison were likely to be kept for sale. Only 2 shops were found where poisonous insecticides were sold and both retailers were in possession of licenses.

FACTORY AND WORKSHOP ACTS, 1901 AND 1907.

Inspection.—2,467 inspections were made during the year—factories 39, workshops 2,381, workplaces 47.

11 written notices were sent in respect of workshops.

There were no prosecutions during the year.

Defects.—The defects found in factories, workshops and workplaces were as follows:—

	No. of defects			Number of prosecutions
	Found	Remedied	Referred to H.M. Inspector	
Want of cleanliness	28	28	—	—
Other defects (P. H. Acts)	9	9	—	—
Sanitary accommodation—				
Insufficient	1	1	—	—
Unsuitable or defective	28	28	—	—
Not separate for sexes	—	—	—	—
Breach of special sanitary requirements for bakehouses	66	66	—	—
Other offences (F. & W. Acts)	5	5	—	—
Total.....	137	137	—	—

Home work.—Lists were received from employers as follows:—

From employers sending twice in the year—3 lists (14 workmen).

From employers sending once in the year—6 lists (1 contractor, 6 workmen).

In each case the work handled was the making of wearing apparel.

Registered workshops.—The workshops on the register at the end of the year were:—

Bakehouses	61
Confectioners	51
Laundries	42
Other workshops	335
Workplaces	21
	<hr/>
	510
	<hr/>

Other matters.—During the year 4 instances of failure to affix the abstract of the Factory and Workshop Acts were dealt with.

At the end of the year there were 26 underground bakehouses in use in the Borough.

RAG FLOCK ACT, 1911.

Pursuant to the provisions of the above Act, 20 visits were made.

At the time of these visits the rag flock being used or stored on the premises was to all appearance in a satisfactory condition; no samples were, therefore, taken for the purpose of analysis.

MATERNITY AND CHILD WELFARE.

The essential objects of the maternity and child welfare work of local authorities are

- (1) the prevention of mortality, and
- (2) the maintenance of health

among expectant and nursing mothers, and children up to five years of age.

It is common knowledge that, in the past, there has been much wastage of life which might have been prevented, and much of the suffering, incapacity, and consequent economic loss which first attracts attention in later life is traceable to causes operating before and shortly after birth.

ADMINISTRATIVE ARRANGEMENTS.

Arrangements have been made by the local authority for carrying out the provisions of:—

1. The Notification of Births Acts, 1907 and 1915.
2. The Midwives' Acts, 1902 and 1918.
3. The Maternity and Child Welfare Act, 1918.

The authority's scheme now includes:—

1. Inspection of midwives practising in the area.
2. Health visiting.
3. The provision of three post-natal clinics.
4. The provision of an ante-natal clinic.
5. The supply of free milk, etc., for necessitous mothers and infants.
6. Home visiting in connection with cases admitted to the Birkenhead Day Nursery.
7. The provision of 4 beds at the Birkenhead Borough Hospital for cases referred from the clinics.
8. The provision of 3 beds at the Leasowe Hospital Baby Annexe for wasting infants.
9. The provision of home nursing for children under five suffering from certain diseases, and for expectant and nursing mothers.
10. Financial support of certain institutions engaged in work in the interests of mothers and infants belonging to the Borough, namely, St. Paul's Eye Hospital, Birkenhead Day Nursery, Birkenhead and District Rescue Association, The Birkenhead and Wirral Invalid Children's Association, and The Birkenhead Maternity Hospital.

The infant welfare or post-natal clinics are held at Hamilton Square, Brassey Street, and St. Paul's Road. The Hamilton Square clinic was opened in 1916; the other two clinics in 1919.

The ante-natal clinic, which is held at No. 9, Hamilton Square, was opened in 1920.

The arrangements for home nursing came into force on 1st July, 1919. An agreement between the Corporation and the Birkenhead District Nursing Society provides for the nursing at home of cases of ophthalmia neonatorum; of measles, whooping cough, epidemic diarrhoea, and poliomyelitis in children under the age of five years; and of illnesses of women associated with pregnancy and confinement.

Further arrangements contemplated or suggested.

Extension of post-natal clinics.—It is hoped that at an early date an additional post-natal clinic will be opened at the Mount Grove premises, which are in many ways well adapted for the purpose.

STAFF.

The executive medical staff engaged on maternity and child welfare work at the end of the year consisted of Dr. Lovell, at the post-natal clinics; and Dr. Deacon, who has throughout the year given one afternoon per week to the ante-natal clinic.

Dr. Brewer, who had been associated with the work of the clinics since 1919, and whose work was very highly valued both by the Maternity and Child Welfare Committee and by his patients, terminated his duties in November.

In addition to the Chief Health Nurse and the Inspector of Midwives the equivalent of the whole time of six nurses was, at the end of the year, available for infant welfare work.

INSPECTION AND SUPERVISION OF MIDWIVES.

Work under this section is concerned with the administration of the Midwives' Acts, 1902 and 1918; the visiting of the homes of midwives, inspecting their instruments, etc., advising them on the details of their work and on their duties as set out in the above Acts, and in the rules issued by the Central Midwives' Board.

Number of midwives.—During the year 1922, 84 midwives entered their names on the local register as practising in the Borough. Of these, 17 subsequently left the district, and their names have been removed from the register accordingly. 4 midwives gave notice of change of addresses. 2 Birkenhead midwives died during the year.

Of the 84 midwives, 75 were trained and 9 untrained.

Number of cases attended by midwives.—The cases attended by midwives alone (no doctor being in attendance) numbered 2,638; just over three-quarters of the total births in the Borough.

Visits of inspection.—The inspector of midwives paid 148 quarterly and 130 special visits of inspection.

Interviews in office.—39 midwives were interviewed during the year.

Complaints against midwives.—Complaints against midwives received numbered 3. These were investigated by the inspector.

Cases of puerperal fever in practice of midwives.—The inspector investigated 12 cases.

Cases requiring medical help.—463 cases were notified by midwives in which medical aid had been called in, as against 419 last year. The inspector made 298 special inquiries regarding cases requiring medical help.

Notifications received from midwives.—59 cases of stillbirths were notified; 20 cases were notified of infants receiving artificial feeding; 8 cases were notified in which death had occurred in the practice of midwives; 7 cases of laying out dead bodies were notified.

Supply of silver nitrate to midwives.—Supplies of a colloid preparation of silver nitrate were issued to 11 midwives at cost price.

HOME VISITING OF EXPECTANT MOTHERS, MOTHERS, AND YOUNG CHILDREN.

Home visiting.—The following is a summary of the visits paid by the health nurses in connection with expectant mothers, mothers, and young children:—

- 2845 routine first visits were paid to infants
- 6391 routine revisits were paid to infants under one year
- 11909 routine visits were paid to children over 1 year and under 5 years old.
- 46 first visits and 41 revisits were paid in connection with the investigation of stillbirths
- 538 visits were paid in connection with cases of pneumonia
- 34 cases of ophthalmia neonatorum were visited and kept under supervision.
- 242 first visits were paid to expectant mothers
- 297 first visits were paid to expectant mothers
- 18 visits were made in connection with deaths of infants
- 3 special inquiries were made in connection with cases for admission to the Day Nursery

Cases reported for special action.—The following cases after being visited were reported for special action:—

- 69 cases of sanitary defects in houses were passed to the Chief Sanitary Inspector
- 1 case was referred to the Charity Organisation Society
- 6 cases were reported to the Society for the Prevention of Cruelty to Children
- 4 cases were referred to the Invalid Children's Association
- 4 cases were referred to the Poor Law Relieving Officers

POST-NATAL CLINICS.

At the end of the year the clinics were being held as follows:—

- Hamilton Square clinic: Monday and Wednesday afternoons, 2 to 5 p.m.
- Brassey Street clinic: Thursday afternoon, 2 to 5 p.m.
- St. Paul's Road clinic: Tuesday afternoon, 2 to 5 p.m.

The following table gives an indication of the work done at the clinics during the year:—

	Hamilton Square (93 sessions)		Brassey Street (51 sessions)		St. Paul's Road (51 sessions)	
	1st visits	Revisits	1st visits	Revisits	1st visits	Revisits
Attendances made by infants under 12 months	371	3998	191	2385	205	3044
Attendances made by children aged 1—2 years	18	787	15	660	9	647
Attendances made by children aged 2—5 years	1	59	—	81	—	74
Children examined by Doctor ...	342	1534	166	1024	184	854
Mothers advised by Doctor regarding their own health ...	31	24	28	49	21	12

Voluntary Workers.—Throughout the year the voluntary helpers have given their services ungrudgingly to the clinics and have contributed to a very great extent to their success. It would be difficult to over-estimate the value of this assistance and of the keenness and enthusiasm which prompts it.

Sewing classes.—41 sessions were held during the year. 15 mothers attended and paid 168 visits.

Supply of Milk.—Dried milk was sold at the clinics to suitable cases.

During the year supplies of milk were given free under the Milk (Mothers and Children) Order, 1919, to

132 expectant mothers

104 nursing mothers

70 children.

The income scale was the same as that set out in my annual report for 1921.

The need for the very strictest economy in connection with the expenditure involved has been fully realised. Applications for free milk are allowed to go forward only where the doctors at the clinics have satisfied themselves, by a medical examination of the cases on whose behalf the applications have been made, that the supply is essential on grounds of health.

Milk is given only to—

- (a) Nursing mothers who are actually suckling their children ;
- (b) Expectant mothers in the last three months of pregnancy ;
- (c) Children up to twelve months whose mother is unable to nurse them.

ANTE-NATAL CLINIC.

At the ante-natal clinic 51 sessions were held during the year ; 333 new cases were seen, and 1,207 revisits were made. The total attendances thus numbered 1,540 visits.

Condition with regard to pregnancy.—The condition of the 333 cases with regard to pregnancy, at the time of their first attendance, was as follows:—

- (a) 31 were in their first pregnancy (1 aged 40; 1 had been married 7 years)
- (b) 215 were in their second or subsequent pregnancy (9 of these had attended the clinic during a previous pregnancy)
- (c) 87 were not pregnant (3 of these had attended the clinic last year)

333

Attendances.—The attendances made by these three classes of case were:—

- (a) 179
- (b) 1193
- (c) 168

1540

Abnormalities.—The abnormalities or diseases found to be present were as follows:—

- (a) Women who came to the clinic in their first pregnancy

Complication	No. of cases
Umbilical hernia.....	1
Hæmorrhage (baby had talipes)	1
Tuberculosis	1
Suspected tuberculosis	1

- (b) Women who came to the clinic in their second or subsequent pregnancy

Abnormality	No. of cases
Breech presentation	1
Brow presentation	1
Prolapse	1
Albuminuria (marked)	4
Hæmorrhage	3
History of previous miscarriages	6
Persistent vomiting of pregnancy	1
Venereal disease	4
Enlarged veins	4
Inflamed leg	1
Oedema (marked)	4
Tuberculosis (1 case hæmorrhage, necessitating Cæsarean section).....	2
Extreme debility	4
Goitre	1
Cardiac disease	3
Pleurisy	2
Bronchitis	2
Various other conditions	11

(c) Women who were not pregnant when they first attended the clinic

Abnormality	No. of cases
Retroversion of uterus (2 after miscarriage, 1 had operation)	7
Uterine prolapse	5
Uterine abnormalities requiring curettage ..	4
Uterine adhesion.....	1
Ovarian abnormalities	6
Fibroid tumour	2
Swelling in fornices.....	3
Excessive hæmorrhage	6
Kidney disease	3
Venereal disease	5
Vaginal stricture.....	1
White leg.....	1
Post-natal oedema	1
Enlarged veins	2
Hernia	1
Anæmia.....	6
Cardiac disease	5
Tuberculosis.....	1
Pleurisy	1
Neuritis	2
Hæmorrhoids ..	2
Rheumatism	4
Tumour in old scar.....	1
Various other conditions	5

Progress of pregnancies.

(a) Of the 31 women who came in their first pregnancy

- 21 were confined before the end of the year, having 12 boys and 9 girls—one of the latter premature
- 1 has left the town
- 1 cannot be traced
- 8 were not delivered at the end of the year.

(b) Of the 215 in their second or subsequent pregnancy

- 74 had boys (2 had Caesarean section, in 1 case baby died after operation for imperforate anus).
- 72 had girls (1 premature and 1 died after operation for spina bifida)
- 2 had twins (boy and girl—in one case the girl died)
- 2 had stillborn children (in one case the mother had cardiac disease)
- 6 had miscarriages
- 1 was tuberculous and mother died at six months—of hæmorrhage
- 5 cannot be traced
- 53 were not delivered before the end of the year.

That the ante-natal clinic is appreciated by the mothers of the town can be readily seen by the marked increase in the numbers attending. Many of the new patients are sent or brought by the older ones.

Of the 333 mothers attending the clinic during the year 132 benefited from the free supply of dried milk, 940 packets being issued to them. In many of these cases this milk has been their chief source of nourishment and the benefit to their health has in several cases been most noticeable. The assistance of the ante-natal clinic to these mothers is very largely in the minor troubles of pregnancy—all those little troubles which at such a time may make life a burden and which can so frequently be corrected by advice or by very simple remedies.

These minor troubles are very common. Fortunately, the more serious ones are much more rare. Much help can be given for these latter also, if taken in time—(a) by testing the urine—the tragedy of being too late is illustrated in the case of a woman suffering from kidney disease, who did not attend the clinic or seek advice elsewhere until two days before her death. Had her condition been discovered earlier her life would in all probability have been saved. (b) by detecting abnormalities. (c) by correcting displacements.

Co-ordination with Borough Hospital.—Of the cases requiring operative treatment those which were considered suitable were referred to the Borough Hospital, the staff of which have co-operated very readily with the work of the ante-natal clinic.

Maternity outfits.—22 outfits were lent out during the year; 19 were returned and 3 were in use at the end of the year.

OTHER PROVISION MADE BY THE LOCAL AUTHORITY.

Cases dealt with at Borough Hospital.—During the year, under the Corporation's agreement, no cases were dealt with at the Borough Hospital.

Cases dealt with at Leasowe Hospital.—The three beds reserved by the Corporation at Leasowe Hospital were in occupation throughout the year.

Cases dealt with by the Birkenhead District Nursing Society.—During the year the society's nurses paid 1,181 visits to 72 cases, as per agreement between the society and the Corporation. In addition 1,441 visits were paid to 102 cases in children under 5 years of age not included in the agreement.

Cases of confinements attended by medical practitioners.—In 67 cases where doctors were called in to difficult cases of confinement the doctors' fees were paid by the Corporation under the provisions of the Midwives' Act, 1918. In 1 case the Corporation requested the patient to repay the fee paid.

Cases of confinement where fees were paid by the Corporation to midwife.—In 2 cases where a midwife was unable to obtain payment the fees were paid to her by the Corporation.

AGENCIES ASSISTED BY THE LOCAL AUTHORITY.

The Corporation gives financial support to certain other institutions, etc., for general services rendered in connection with maternity and child welfare work.

Birkenhead Maternity Hospital.—Here 15 beds are provided for maternity cases, but no beds are specially set apart for patients sent from this department. Under the direction of the Hospital Committee a clinic for mothers and babies is held at Grange Mount, Birkenhead.

St. Paul's Eye Hospital, Liverpool.—Cases of ophthalmia neonatorum are treated at this hospital. During the year ten infants suffering from ophthalmia neonatorum were admitted to the hospital from this area.

Birkenhead Day Nursery.—Here accommodation is provided for 24 day children and 3 boarders.

Birkenhead and Wirral Invalid Children's Association.—Arrangements are made by this association to send children to convalescent homes, and to provide massage treatment for cases of infantile paralysis, etc.

Birkenhead and District Rescue Association.—This association provides 34 beds at St. Faith's Home for unmarried mothers and their children—20 beds for babies and 14 for mothers.

The grants made by the Corporation to the above agencies for the current financial year were as follows:—

Birkenhead Maternity Hospital.....	£200
St. Paul's Eye Hospital	30
Birkenhead Day Nursery	75
Birkenhead and Wirral Invalid Children's Association	30
Birkenhead and District Rescue Association	50
	<hr/>
	£385
	<hr/>

AGENCIES NOT PROVIDED OR ASSISTED BY THE LOCAL AUTHORITY.

Other agencies whose work in Birkenhead touches the welfare of mothers and infants, but which are not provided or assisted by the Birkenhead Corporation, are the following:—

- The Birkenhead Union.
- The Birkenhead and Wirral Children's Hospital.
- The Charity Organisation Society.
- The Society for the Prevention of Cruelty to Children.
- The Naval and Military War Pensions Committee.
- The Sisters of Charity (St. Elizabeth's) Welfare Centre, Cloughton Road, Birkenhead.
- The Gynæcological Clinic at the Borough Hospital (opened in April, 1920, with Dr. Dalzell as honorary gynæcologist).

HEALTH OF SCHOOL CHILDREN.

ADMINISTRATIVE ARRANGEMENTS.

The arrangements made by the Birkenhead Education Committee for promoting the health of the children attending elementary and secondary schools in the Borough have been carried out during the past year on the lines indicated in my annual report for 1921.

Staff.—Dr. Mary Deacon, Assistant Medical Officer, was engaged in medical inspection and treatment throughout the year.

Dr. Macewen, who joined the staff in April, 1921, resigned on 1st January, 1922, and terminated his duties on 31st March, 1922.

The Education Committee decided that, in filling the vacancy caused by Dr. Macewen's resignation, they should obtain if possible an officer whose qualifications and experience would enable him to carry out, in addition to general medical inspection and treatment, the examination at the Eye Clinic of children with defective vision and the prescribing of spectacles. Dr. F. W. Campbell Brown was selected as a suitable candidate and, with the approval of the Board of Education, appointed; and the appointment of Dr. Grimshaw as part-time oculist, which terminated on 31st March, 1922, was not renewed. Dr. Campbell Brown took up duty on 1st June, 1922.

Mr. Wilson Smith, L.D.S., has throughout the year carried out the work of dental inspection and treatment.

Co-ordination with other health work.—The Board of Education request that a statement as to the co-ordination of the work of the School Medical Service with that of other health services in the area should appear in this annual report. In the great majority of areas throughout the country full co-ordination exists, one principal Medical Officer being responsible for the organisation and administration of the health and medical services provided by the Education, Health, Mental Deficiency, and Maternity and Child Welfare Committees. This arrangement obtains in Birkenhead.

Extensions in administrative arrangements.

1. *Cleansing station.*—Provision has now been made for the cleansing of verminous children and for the disinfection of their clothing, a Lolean Sack Disinfector having been installed at the Gertrude Street Clinic. The work of the Health Nurses in connection with the cleanliness of children in the schools will be greatly assisted by this arrangement.

It is recognised, however, that in dealing with such a contagious condition as pediculosis it is in many cases desirable that not only should the child be cleansed but the other members of the household, the bedding, and the rooms occupied should be disinfested. In the Birkenhead Corporation Bill, which will be before Parliament this year, clauses have been inserted which will give powers to deal with such cases.

2. *X-ray treatment of ringworm.*—Arrangements having been made with the Birkenhead and Wirral Children's Hospital for the use of the X-ray apparatus in that institution, this work was commenced in the latter part of the year.

MEDICAL INSPECTION AND TREATMENT (ELEMENTARY SCHOOLS).

(A) INSPECTION.

Number of elementary schools and school children.—The number of elementary schools in the borough is:

Council Schools	15
Voluntary Schools	19 Total 34

The recognised accommodation of these schools on the 31st December, 1922, was:

Council Schools	13,896
Voluntary Schools	12,715 Total 26,611

The average number of scholars on the rolls during the year was:

Council Schools	11,534
Voluntary Schools	12,959 Total 24,493

The average attendance was:

Council Schools	10,223
Voluntary Schools	11,255 Total 21,478

Children inspected.—The following elementary school children were medically inspected during the year:—

1. At Routine Inspections	9019
2. At Special Inspections in the ordinary schools	309
3. As prospective entrants to the Higher Elementary School, the Institute for Boys, the Girls' Secondary School, St. Francis Xavier's College and the Catholic Institute ...	267
4. As entrants to the Cloughton Road Special School for Mental Defectives	35
5. As candidates for Student-Teacherships	13
6. Under the Employment of Children Bye-laws	94
Total	9,737

The numbers examined in each school are given in Table S 9.

Re-examination of defective children.—During the year 5,055 children who at a previous examination had been found to require medical care were re-examined by the Assistant Medical Officers. This was an increase of 3,183 on last year's number.

Co-operation of parents.—Parents attended at the examination of 5,336 (59.2 per cent.) of the 9,091 children dealt with at routine inspections; and 228 (85.3 per cent.) of the 267 prospective entrants to secondary schools.

Vaccination.—In the ordinary inspections children were examined as to vaccination marks. Of the 9,019 children examined

1752 (19.4%) showed no marks.
 2906 (32.2%) showed one mark.
 991 (11.0%) showed two marks.
 555 (6.2%) showed three marks.
 2815 (31.2%) showed four or more marks.

Infectious diseases.—Enquiry was made at each inspection as to the infectious diseases from which the children had suffered in the past. The information elicited is summarised in Table S 7.

Defects found requiring medical or dental treatment.—Out of the 9,328 children inspected at routine and special inspections, 2,227 were found to have defects requiring medical attention. The defects found were as follows:—

	Code Group.	Special Cases.
<i>Skin Conditions.</i>		
Ringworm	18	3
Scabies	90	6
Impetigo	25	6
Other diseases	12	3
<i>Eye Defects.</i>		
Defective vision and squint (for further details see Table S 2)	703	128
External eye disease	23	21
<i>Ear Defects</i>		
Defective hearing	45	9
Ear disease	51	16
<i>Teeth Defects</i>	702	32
<i>Nose and Throat Defects.</i>		
Enlarged tonsils	167	21
Enlarged tonsils and adenoids	110	3
Adenoids	48	9
<i>Non-Pulmonary Tuberculosis.</i>		
Glands	10	7
<i>Other Defects or Diseases</i>	395	72

A full statement regarding the defects found setting out the number of defective children is given in Table S 6. In Table S 9 the defective children are classified according to the schools attended.

(B) TREATMENT.

The following procedure is observed as a routine in connection with all cases found on medical inspection to require treatment or supervision, in addition to informing the parents of the nature of defects found and the need for securing treatment:—

1. All cases where defects have been found are "followed up," visits to the homes being paid by the Health Nurses, and the parents urged to secure treatment.

2. Re-examinations of cases of defect are made by the Assistant Medical Officers from time to time, both in the schools and at the clinics.

During the past year the Health Nurses paid 4,885 visits to the homes of defective children in connection with "following up"—3,532 first visits and 1,353 re-visits; and 5,055 defective children were re-examined by the Assistant Medical Officers. In addition the Nurses paid 54 special visits.

It should be noted that in every case where medical defects requiring treatment are found the parents are urged in the first instance to

consult the family doctor. Every effort is made to secure that the organised scheme of medical inspection provided by the education authority does not in any way take the place of, or interfere with, the established relationship between the family and their private medical attendant.

The results obtained are invariably more satisfactory in those schools where the Head Teacher takes an active and practical interest in the work of school medical inspection, and realises to the full the importance from an educational standpoint of the health of the children.

Treatment of children found, at medical inspections held during 1922, to be suffering from defects which required medical attention.—As has been stated above, 2,227 out of the 9,328 children examined at routine or special inspections in elementary schools during 1922 were found to be suffering from defects requiring medical attention; of this 2,227, 742 or 33 per cent. received treatment before the end of the year.

Details of the various types of ailment treated will be found in Table S 4.

Treatment carried out at Eye Clinic.—Children who were found by the Assistant Medical Officers to require spectacles, and whose parents were not in a position to provide the necessary attention privately, were seen at the Eye Clinic; in the early part of the year by Dr. Grimshaw, and in the latter part by Dr. Campbell Brown. Glasses were prescribed and fitted for the new cases, and as many re-examinations made as opportunity and time permitted.

During the year 329 new cases were examined, and of these 302 were supplied with spectacles. In addition, 246 children attended for re-examination, and of these 147 were given prescriptions for new or altered spectacles. The total cost of all the spectacles which were supplied by the Education Committee amounted to £96 3s. 7d.; of this £61 8s. 5d. had, up to 31st December, 1922, been recovered from the parents.

Prior to 1st June, when Dr. Campbell Brown took up his appointment, the Eye Clinic had been closed for some time, and a number of outstanding cases of visual defect requiring spectacles had therefore accumulated. These were rapidly dealt with after Dr. Brown's coming on duty, and at the end of the year all arrears had been overtaken.

During the latter part of the year it was found possible to reduce the cost of the spectacles supplied to the children, a more favourable tender having been obtained.

The following is a summary of the condition of the eyes of new cases for which spectacles were prescribed during the year:—

Total number of cases of Hypermetropia (Simple and Astigmatic)	268
Total number of cases of Myopia (Simple and Astigmatic)	57
Total number of cases of Mixed Astigmatism	55

<i>Hypermetropia.</i>	
Both eyes	50
Right eye	22
Left eye	32
<i>Simple Hypermetropic Astigmatism.</i>	
Both eyes	4
Right eye	10
Left eye	8
<i>Compound Hypermetropic Astigmatism.</i>	
Both eyes	88
Right eye	25
Left eye	29
<i>Myopia.</i>	
Both eyes	17
Right eye	8
Left eye	3
<i>Simple Myopic Astigmatism.</i>	
Both eyes	2
Right eye	5
Left eye	3
<i>Compound Myopic Astigmatism.</i>	
Both eyes	8
Right eye	5
Left eye	6
<i>Mixed Astigmatism.</i>	
Both eyes	23
Right eye	15
Left eye	17

The following conditions were also recorded among the children who attended the clinic:—

<i>Obstructive Blindness.</i>	
Corneal ulcers	1
Nebulæ	11
Cataract	1

Treatment carried out at General School Clinic.—At this Clinic treatment is given for such defects as otorrhœa, external eye disease, impetigo, scabies, ringworm, etc.

The scheme for the treatment of cases of malnutrition, etc., was continued, as described in the annual report for 1920.

Details of the work done at this clinic will be found in Tables S 4, S 5, and S 8.

It is worthy of note that the number of children who have received treatment at this clinic has risen from 2,752 in 1921 to 4,265 this year, while the total number of attendances has increased by 5,646.

Treatment of uncleanness.—The average number of visits paid during 1922 by the Health Nurses to each school was 13.

The total number of examinations of children made by the nurses in the schools was 13,480.

The number of individual children found unclean was 4,309.

The attention of the parents was directed to the condition of these children, and a considerable improvement was, in the aggregate, obtained.

282 home visits were paid; 191 first visits and 91 re-visits.

DENTAL INSPECTION AND TREATMENT (ELEMENTARY SCHOOLS).

Scheme adopted in 1921.—The Education Committee's scheme for dental inspection and treatment of school children came into operation early in 1921; its main features are set out in my annual report for that year.

The Committee's original intention was that the arrangements for this work should be developed gradually, but steadily, until comprehensive facilities were provided for the periodical dental inspection of all the school children in the area, and for the provision of treatment in those cases where the parents could not afford to obtain this privately.

It was decided that the first step should consist of a preliminary inspection throughout all the schools in the area of children aged 6 and 7 years (the age when the secondary or permanent teeth are appearing), the inspection to be followed by treatment in those cases where defects were found.

The Committee estimated that only a part of this preliminary inspection could be overtaken during 1921—the number of children on the rolls aged 6 and 7 being 5,564; it was considered, however, that midsummer of 1922 would see the completion of this initial survey, and that the information then available would enable the Committee to decide on those extensions of staff, etc. which would be required from time to time for the full development of the scheme.

The anticipated lines of progress were as follows:—

Second year—examination and treatment of new children aged 6,
re-examination and treatment of children aged 7 and 8,
Third year—examination and treatment of new children aged 6,
re-examination and treatment of children aged 7, 8 and 9
and so on; the question of instituting inspection of children aged 5 years being an additional matter reserved for future consideration.

Development on these lines would have meant that after the scheme had been in operation about six years every child in the elementary schools, aged six years and onwards, would be undergoing examination annually; and that by then the Committee would have had the satisfaction of knowing that practically every child leaving school to take up work would have a clean, healthy and efficient dentition.

Curtailment of scheme.—The first inspection of six- and seven-year-olds and the treatment of defects at the dental clinic occupied the time of the Dental Surgeon until the summer holidays in 1922.

With the results of this inspection available the Committee went carefully into the question of future arrangements. In view of the pressing need for financial economy it was reluctantly decided that the developments originally contemplated should not be proceeded with; and that, for the present, the work should be limited practically to the periodical re-inspection and treatment of those children who had been examined in the original survey.

Scope of the past year's work.—During 1922, therefore, the time of the Dental Surgeon has been taken up as follows:—

(a) In the first part of the year, with the inspection and treatment of children aged 6 and 7 years—the latter portion of the original survey of these age groups; the earlier part having been carried out in 1921 and reported on in my annual report for that year.

(b) From September onwards, with the inspection and treatment of children aged 7 and 8 years—the majority of these now being examined for the second time.

It may here be observed that the method of keeping records of children examined and treated is based on the schools attended, and that during the past year an extensive redistribution of the children in the elementary schools took place. This occasioned a large amount of additional clerical work—the transference of dental records, tracing of children removed from one school to another, etc.

The clerical work normally involved in a school dental scheme is very considerable; lists of children have to be prepared, communications sent to parents about defective children, appointments made for treatment at the clinic, and accurate records kept of the results of each inspection and of all treatment carried out.

No clerical help is, at present, available for this work, which, in consequence, has to be carried out by the Dental Surgeon and the nurse on duty at the clinic.

(A) INSPECTION.

Number inspected.—3,222 children were dentally inspected during the year; made up as follows:

Aged six years	1061
Aged seven years	1646
Aged eight years	515
	<hr/>
	3222
	<hr/>

The number of sessions devoted to inspections in the schools was 45.

Number requiring dental treatment.—Of the 3,222 children inspected, 2,197 (68.1%) were selected as requiring treatment, the parents being advised to obtain this treatment privately, or, if unable to do this, at the Dental Clinic.

Cleanliness of teeth.—The children examined were classified according to cleanliness of teeth as follows:—

Clean	1222
Fairly clean	1268
Dirty	732
	<hr/>
	3222
	<hr/>

Condition of gums.—The following figures show the condition of the gums of the children examined:—

Gums healthy	2206
Gums inflamed	674
Gums septic	342
	<hr/>
	3222
	<hr/>

Condition of bite.—This was found to be as set out below:—

Bite good	1571
Bite fair	1144
Bite bad	507
	<hr/>
	3222
	<hr/>

Notes on the completed survey of children aged 6 and 7 carried out in 1921 and 1922.—The children examined in this survey numbered 4,785, as follows:—

Age 6—inspected in 1921	1321	
inspected in 1922	1061	
	<hr/>	2382
Age 7—inspected in 1921	1374	
inspected in 1922	1029	
	<hr/>	2403
		<hr/>
		4785
		<hr/>

From these, 3,149, or 65.8%, were selected as requiring treatment:—

Age 6	1377 out of 2382	(57.8%)
Age 7	1772 out of 2403	(73.7%)

Notes on the examination of children aged 7 and 8.—The majority of these children had been examined a year earlier as 6- and 7-year olds.

The total number inspected was 1,132, made up as follows:—

Age 7	617
Age 8	515
	<hr/>
	1132
	<hr/>

From these, 799 or 71.1% were selected as requiring treatment:—

Age 7	423 out of 617	(66.7%)
Age 8	376 out of 515	(71.5%)

Comparing this with the findings recorded in the preceding paragraph, it will be seen that the percentage of children requiring treatment shows no tendency to decrease as we pass from the 6 year old to the 8 year old groups—even though many of the latter had been inspected and treated a year earlier. There are comparatively few areas where a complete system of dental inspection is in force, or has been in force for any length of time, with annual examinations of every child on the school registers. No great bulk of experience has, therefore, been recorded as to the relative incidence of caries, dental deformity, etc. at different ages. It is possible, however, that when such information becomes available it will be found that between the ages of 6 and 9 there is no appreciable increase in the percentage of cases requiring no treatment, but that improvement in this respect becomes increasingly apparent from the age of ten years onwards.

(B) TREATMENT.

Notices were sent out to the parents of the 2,197 children found to require dental treatment, with the following results:—

Refused to have treatment done	284	(12.9%)
Stated that treatment would be obtained privately ...	653	(29.7%)
Requested treatment at the Dental Clinic	1259	(57.3%)
Left Borough shortly after date of inspection	1	
	<hr/> 2197	

Treatment at the Dental Clinic.—Of the 1,259 children for whom treatment at the clinic was requested

989 were treated before the end of the year
187 did not attend when sent for
83 were awaiting treatment at the end of the year
<hr/> 1259

In addition to the above 989 children treated at the clinic following on inspections held in 1922, 61 were treated who had been inspected in 1921 and had not been treated before the end of that year; and 175 children who were brought by the parents of their own initiative to the clinic were also treated. The total number of children treated at the clinic during 1922 was therefore

Following on 1921 inspections	61
Following on 1922 inspections	989
Brought by parents of their own initiative	175
	<hr/> 1225

Details of treatment carried out.—This was as follows:—

Temporary teeth extracted	1676
Temporary teeth filled	183
Permanent teeth extracted	15
Permanent teeth filled	533
Total extractions	1691
Total fillings	716
Anæsthetics—general	—
local	1128
Scalings	733
Dressings	240

The total attendances at the clinic numbered 1,391.

Willingness of parents to take steps to obtain treatment.—In the annual report for 1921 reference was made to the fact that the parents of 51.3% of the children who had been found on inspection to require treatment had requested treatment at the clinic. This was a highly satisfactory index of the success of Mr. Wilson Smith's work in its initial stages.

This year, as has been stated above, the parents of 57.3% of the defective children asked for treatment at the clinic, a marked increase on last year's percentage.

Further, it may be noted that, while the percentage for the earlier part of the year (when the initial survey was being completed) was

56.3, that for the latter part of the year (largely taken up with the second round of inspections) this percentage rose to 59.2.

What is even more striking is the fact that while, in 1921, 79.3% of the parents who asked for treatment at the clinic actually brought their children when appointments were made, in 1922 this percentage rose to 92.8.

Again, in 1921 the percentage of cases where parents refused to take any steps to obtain dental treatment was 14.1. In 1922 the corresponding percentage was 12.9.

MEDICAL INSPECTION AND TREATMENT (SECONDARY SCHOOLS).

Secondary schools and school children.—These schools, with the average number of children on the rolls, are as follows:—

The Birkenhead Institute (Boys)	494
The Girls' Secondary School	444

(At the Higher Elementary School there are on the rolls approximately 220 boys over the age of 14 whose medical inspection is called for on the same lines as that of the older children in secondary schools. These numbers are included in the total of 24,493 elementary school children given above.)

Scope of medical inspection.—The existing arrangements provide for the examination of every child in the secondary schools once in each year; and for re-examination of children found to be defective.

Birkenhead Institute.—At the annual inspection (held in July, 1922) 436 children were inspected. Of this number 125 were found to have defects requiring medical or dental advice, the defects found being as follows:—

Defective teeth	65
Defective vision	21
Nose and throat defects	26
Defective heart	10
Deformities (spinal curvature, pigeon chest, etc.)	7
Other defects	14

All the children found to be defective were kept under observation and re-inspected later in the year. By the end of the year 59 out of the 125 had received appropriate treatment, as shown below:—

	Boys.	Percentage.
Defective teeth	29	45
Defective vision	11	52
Nose and throat defects	5	19
Defective hearts	5	50
Deformities (spinal curvature, pigeon chest, etc.)	3	43
Other defects	6	43

Girls' Secondary School.—At the annual inspection (held in January, 1922) 413 girls were examined—298 in the senior school and 115 in the junior school.

• Included in the above total (413) there were 88 children now examined for the first time as secondary school children.

Of the 413 children examined, 92 were found to have defects requiring medical or dental attention; the defects found being as follows:—

Defective teeth	49
Defective vision	3
Deformities (spinal curvature, pigeon chest, etc.)	72
Heart and circulation defects	6
Nose and throat defects	3
Skin disease	4
Other defects	7

No cases of pediculosis were found at this inspection. This disease has been practically eliminated from the school. In 1921 11.3 per cent. of the junior children and 1.2 per cent. of the senior children were found to be suffering from pediculosis.

All the children found to be defective were kept under observation, and re-inspected later in the year. By the end of the year 82 out of the 92 had received appropriate treatment as shown below:—

	Total cases.	Treated by end of year.	Percentage.
Defective teeth	49	8	16
Defective vision	3	3	100
Deformities	72	72	100
Heart, etc., defects	6	6	100
Nose and throat defects	3	3	100
Skin diseases	4	3	75
Other defects	7	4	57

MISCELLANEOUS.

Examination of entrants to the Girls' Secondary School, the Birkenhead Institute, Higher Elementary School, St. Francis Xavier's College, and the Catholic Institute.—During the year 267 elementary school children were examined with a view to their admission to the above schools. 82 were found to require treatment for 89 defects, the latter being as follows:—

Defective teeth	49
Eye defects	18
Nose and throat defects	6
Other defects	16
	<hr/>
	89
	<hr/>

The Special School for Mentally Defective Children.—The accommodation at the Special School for the year 1922 was 130. The average number on the rolls during the year was 123, and the average daily attendance 103.

Eight visits were paid to the school during the year by the Assistant Medical Officer. At these visits examinations were held of children

suspected to be mentally deficient, with reference to their suitability for admission to the Special School. The results were as follows:—

Total number examined—Boys	25	
Girls	10	
	<hr/>	35
Number certified for admission—Boys	18	
Girls	7	
	<hr/>	25
Number not certified for admission—		
(a) Regarded as fit for ordinary school—Boys...	6	
Girls..	3	
	<hr/>	9
(b) Notified to the Local Authority under the		
Mental Deficiency Act—Boys	1	
Girls	—	
	<hr/>	1

As it is not possible to admit all the children nominated for the Special School, a careful selection is made from those presenting themselves for examination. Those children who are found capable of profiting from the ordinary instruction of their own school are not admitted, nor, on the other hand, are totally ineducable children.

10 children were permitted to leave the school after medical examination, as follows:—

Fit for work	7
Left over 16 years of age	2
Sent to Institution	1
	<hr/>
Total	10

Of the 7 cases who left to take up work—

- 1 is employed in a coalyard;
- 1 is employed as a shoe repairer;
- 1 is employed in a brickyard;
- 1 is employed as a domestic servant;
- 1 is employed on a farm;
- 1 is employed in a bakery.
- 1 is usefully employed at home.

The average ages of the children attending the school, and their classification, are shown below:—

CLASS.	BOYS AVERAGE AGE.	GIRLS AVERAGE AGE.
Class 1—Boys.....	14	—
Class 2—Boys and Girls	12	14
Class 3—Boys and Girls	11	12
Class 4—Boys and Girls	10	11
Class 5—Boys and Girls	9	10
Class 6—Boys and Girls	8	9

School dinners have been provided throughout the year at a cost to the parent of 2d per day.

Daily average supplied	75
Total cost for the year	£130

The weekly menu was:—

Monday Scotch broth; boiled raisin pudding.

Tuesday Stew—meat, onions, potatoes, carrots; rice pudding.

Wednesday... Hot pot; boiled syrup pudding.

Thursday Irish stew; sago pudding.

Friday..... Hot pot.

Physical training: School baths.—No organiser of physical training in school has as yet been appointed in Birkenhead and no schools have been furnished with school baths. (Information on these points is asked for by the Board of Education.)

It would be highly advantageous if more provision could be made in the nature of cleansing baths and swimming baths for school children. Although the number of cases of infectious skin conditions is somewhat lower than last year, there is still a very high total recorded this year. Conditions such as pediculosis, scabies, ringworm, and impetigo could be prevented by the systematic use of soap and water, and much of the time lost by exclusion from school saved, and money spent on treatment, etc., put to better use. The suggestion is still sometimes made—an erroneous one—that skin infections are spread by the use of baths. Water is not the natural habitat of the germs of skin diseases.

Provision of meals.—No figures are available for the calendar year 1922. During the financial year—1st April, 1922, to 31st March, 1923—2,100 children have been supplied with 182,353 meals at an average cost per head of 19s. 4d., per meal of 2.6d., and at a total approximate cost of £2,030. Meals were provided five days per week, with the exception of Bank and Public Holidays.

Birkenhead and Wirral Invalid Children's Association.—During the year cases of deformity, paralysis, etc., were from time to time referred to this Association, and invariably the fullest assistance was given—massage and other suitable treatment being provided.

The following table shows the number of massage cases among children of school age dealt with by the Association during the year:—

	Sent from School Clinics	Other cases	Total
Children under treatment at the end of 1921	23	18	41
New children treated during the year	41	14	55
Children discharged during the year—Sent to hospitals or died	14	2	16
Children who ceased attending before completion of treatment or left the town ..	20	10	30
Children under treatment at end of 1922	30	20	50

The 64 cases referred from the school clinics to the Association were as follows:—

Disease	No. of cases
Scoliosis	9
Spinal curvature and round shoulders	16
Spinal curvature or chest deformity and bronchitis (chronic)	3
Chest deformity	5
Infantile paralysis	4
Bronchitis (chronic)	3
Rickets and pigeon chest	14
Depressed sternum	4
Cyanosis	1
Talipes	1
Stiff elbow joint from old fracture	1
Loss of power right arm	1
Deafness	1
Chilblains	1
	<hr/> 64

Assistance has also been given to children of school age in the following ways:—

	Sent from School Clinics	Other cases	Total
Children supplied with milk.....	106	93	199
Children supplied with tonics	150	73	223
Children supplied with surgical apparatus.. ..	2	70	72
Children sent to convalescent and country hospitals	35	33	68

In every case the parents pay something towards the cost of treatment.

TABLE S 1.

Number of Public Elementary School Children Inspected 1st January, 1922, to 31st December, 1922.

A.—ROUTINE MEDICAL INSPECTION.*

Age	ENTRANTS					
	3	4	5	6	Other Ages	Total
Boys	—	61	854	333	69	1317
Girls	1	65	836	325	53	1280
Totals	1	126	1690	658	122	2597

Age	INTERME- DIATE GROUP	LEAVERS			Other Ages	Total	Grand Total
		12	13	14			
Boys	1337	1325	479	40	—	3181	4498
Girls	1468	1247	494	32	—	3241	4521
Totals	2805	2572	973	72	—	6422	9019

B.—SPECIAL INSPECTIONS.

	Special Cases †	Re-Examinations (i.e., No. of Children re-examined)
Boys	1770	2264
Girls	1323	2791
Totals	3093	5055

C.—TOTAL NUMBER OF INDIVIDUAL CHILDREN INSPECTED WHETHER AS ROUTINE OR SPECIAL CASES (no Child being counted more than once in the year).

No. of Individual Children Inspected 12112

*Routine Medical Inspection is medical inspection carried out on the lines of the approved Schedule at the time when routine medical inspection is due and made on the school premises or other place sanctioned by the Board of Education under the Code.

†“Special Cases” are those children specifically referred for medical examination and not due for routine medical inspection under the Code at the time when specially referred. Such children may or may not be of Code-group age and may be referred to the Assistant Medical Officers at the school or the clinic by the Medical Officer, Health Nurses, Teachers, Attendance Officers, Parents or otherwise.

TABLE S 2.

Return of Defects found in the course of Medical Inspection and referred for treatment in 1922.

This table is, except as regards the final line, a record of defects and not of individual children who are defective. For the sake of convenience cases of Squint are recorded also under the heading of "Defective Vision," and cases of defect of Nose and Throat are included in one only of the sub-headings.

Defects or Disease	Routine Inspections		* SPECIALS	
	No. referred for treatment	Not for treatment but kept under observation	No. referred for treatment	Not for treatment but kept under observation
<i>Malnutrition</i>	21	1	4	2
<i>Uncleanliness</i> .. Head	—	—	194	—
Body	—	—	31	—
<i>Skin</i>	13	—	158	2
Ringworm—Head	5	—	41	4
Body	90	—	144	—
Scabies	25	—	402	—
Impetigo	12	4	63	1
Other diseases (non-tubercular)	15	1	72	—
<i>Eye</i>	3	1	247	—
Blepharitis	—	—	1	—
Conjunctivitis	3	—	25	—
Keratitis	—	—	1	—
Corneal ulcer	—	—	1	—
Corneal opacities	636	22	168	—
Defective vision	67	1	28	—
Squint	2	—	44	1
Other conditions	45	13	22	—
<i>Ear</i>	51	—	203	—
Defective hearing	—	—	—	—
Otitis media	167	—	75	—
Other ear diseases	48	—	30	—
<i>Nose and throat</i> .. Enlarged tonsils	110	1	7	—
Adenoids	20	—	56	—
Enlarged tonsils and adenoids	2	5	17	—
Other conditions	2	1	1	—
<i>Enlarged cervical glands (non-tubercular)</i>	702	2	124	—
<i>Defective speech</i>	—	—	—	—
<i>Teeth</i>	—	—	—	—
<i>Dental diseases</i>	—	—	—	—
<i>Heart and circulation</i> —	—	—	—	—
Heart disease—Organic	43	{ 46 }	16	1
Functional	8		20	2
Anæmia	30	2	60	1
<i>Lungs</i>	24	2	52	—
Bronchitis	56	109	40	38
Other non-tubercular diseases	—	—	2	—
<i>Tuberculosis</i> ... Pulmonary—Definite	3	8	8	—
Suspected	5	1	6	—
Non-pulmonary—Glands	—	—	2	—
Spine	—	—	—	—
Hip	—	—	—	—
Other bones and joints	4	—	1	—
Skin	—	—	1	—
Other forms	1	—	1	—
<i>Nervous system</i> .. Epilepsy	—	—	1	—
Chorea	1	—	13	1
Other conditions	3	1	13	—
<i>Deformities</i> Rickets	10	—	6	—
Spinal Curvature	52	—	10	—
Other forms	18	—	23	—
<i>Minor injuries</i>	—	—	140	—
<i>Other defects and diseases</i>	103	14	681	6

Number of individual children having defects which required treatment. 4968

*See footnote † in Table L.

TABLE S 4.

Treatment of Defects of Children during 1922.

A.—TREATMENT OF MINOR AILMENTS.

Disease or defect	Number of children			
	Referred for treatment	Treated		
		Under Local Education Authority's scheme	Otherwise	Total
<i>Skin</i> —Ringworm—head	171	141	19	160
body	50	41	2	43
Scabies	234	179	38	217
Impetigo	427	383	15	398
Minor injuries	140	84	1	85
Other skin diseases	75	60	11	71
<i>Ear disease</i>	321	288	39	327
<i>Eye disease</i> (external and other)...	413	371	21	392
<i>Miscellaneous</i>	784	421	70	491

B.—TREATMENT OF VISUAL DEFECT.

Referred for refraction	Number of children								
	Submitted to refraction				For whom glasses were prescribed	For whom glasses were provided	Recommended for treatment other than by glasses	Received other forms of treatment	For whom no treatment was considered necessary
	Under Local Education Authority's scheme—Clinic or hospital	By private practitioner or hospital	Otherwise	Total					
804	329	86	—	415	388	368	—	—	27
Re-exams.	246	—	—	246	147	138	—	—	—
Total	575	86	—	661	535	506	—	—	27

C.—TREATMENT OF DEFECTS OF NOSE AND THROAT.

Referred for treatment	Number of children			
	Received operative treatment			Received other forms of treatment
	Under Local Education Authority's scheme—Clinic or hospital	By private practitioner or hospital	Total	
437	—	135	135	87

D.—TREATMENT OF DENTAL DEFECTS.

1. *Number of Children dealt with.*

	Age groups										'Specials'	Total
	5	6	7	8	9	10	11	12	13	14		
(a) Inspected by dentist	—	1061	1646	515	—	—	—	—	—	—	—	3222
(b) Referred by dentist for treatment	—	644	1177	376	—	—	—	—	—	—	—	2197
(c) Actually treated ...	—	356	644	225	—	—	—	—	—	—	—	1225†
(d)*Re-treated (result of periodical examination)	—	—	174	188	—	—	—	—	—	—	—	362

* It is understood that cases under this head are also included under (c) above.

† These included cases referred for treatment in 1921 but not treated before the end of that year.

NOTE.—This table records only treatment work carried out at the Dental Clinic and arising out of routine dental inspection.

2. *Particulars of Time given and of Operations undertaken.*

No. of half days devoted to inspection	No. of half days devoted to treatment	Total No. of attendances made by the children at the Clinic	No. of permanent teeth		No. of temporary teeth		Total No. of fillings	No. of administrations of general anaesthetics included in (4) and (6)	No. of other operations* (dressings)	
			Ex-tracted	Filled	Ex-tracted	Filled			Per-manent teeth	Tem-porary teeth
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
45	231	1391	15	533	1676	183	716	—	128	112

*In addition 733 scalings were done.

E.—TREATMENT OF UNCLEANLINESS.

Average number of visits made during the year by the Health Nurses to each school	13
Total number of examinations made of children by Health Nurses in the year in the schools	13480
Number of individual children found unclean	4309
Number of children compulsorily cleansed	—
Legal proceedings taken under the Children Act, 1908, or the School Attendance Bye-laws	—

F.—TREATMENT OF ALL OTHER DEFECTS.

Number of cases referred for treatment	579
Number of cases treated up to 31st December, 1922	357

TABLE S 7.

Past Infectious Diseases (Elementary School Children).

(1) Children aged 3—7		No. of Cases.	Percentage.
No Infectious Disease		552	23.5
Measles		1739	67.9
Whooping Cough		1208	47.2
Scarlet Fever		100	3.9
Diphtheria		48	1.9
Chicken Pox		632	24.7
Mumps		213	8.3
(2) Children aged 8—14		No. of Cases.	Percentage.
No Infectious Disease		476	7.4
Measles		5617	87.0
Whooping Cough		3702	57.3
Scarlet Fever		630	9.8
Diphtheria		194	3.0
Chicken Pox		2655	41.1
Mumps		1641	25.4

Note.—The same child may have had more than one of these diseases.

TABLE S 8.

Cases treated at the Minor Ailments Clinic.

	Jan. 1 to March 31	April 1 to June 30	July 1 to Sept. 30	Oct. 1 to Dec. 31	Total
Total number of children who attended the clinic	815	876	762	1812	4265
Total number of children treated	815	876	762	1812	4265
Total number of attendances	4872	3934	3750	5219	17775
New cases	415	311	291	428	1445

TABLE 8 9.

Number of children examined at Routine Medical Inspections in the Schools and number found defective in each School.

SCHOOL	Entrants	Intermediates	Leavers	Total ordinary inspections	Parents present	Number of defective children	Number of defects found	CLASSIFICATION OF DEFECTS											Tuberculosis (pulmonary)	Tuberculosis (non-pulmonary)	Nervous system	Deformities	Other defects
								Malnutrition	Skin diseases	Eyes	Ear	Nose and throat	Cervical glands (non-tubercular)	Defective speech	Teeth	Heart and circulation	Lungs	Tuberculosis					
Bidston Avenue	90	37	70	197	115	60	78	2	4	13	2	13	—	—	28	4	2	—	—	—	—	2	8
Brassey Street	101	50	152	303	203	118	147	1	3	22	8	31	1	—	56	7	6	—	—	—	—	6	6
Cathcart Street	82	121	146	319	194	63	67	—	6	18	—	16	—	—	22	3	—	—	—	—	—	1	1
Hemingford Street	125	—	155	280	190	113	158	2	7	17	8	35	1	—	36	15	10	—	—	—	1	12	14
Laird Street	98	56	120	274	189	61	67	1	3	15	1	7	—	—	22	2	1	—	—	—	1	9	5
Mersey Park	136	151	119	406	264	37	40	—	1	23	—	4	—	—	10	—	—	—	—	—	—	—	2
Rock Ferry	144	158	181	483	274	91	104	1	5	41	4	5	—	—	45	—	—	—	—	—	—	3	—
Temple Road	70	84	86	240	163	34	37	—	2	16	—	3	—	—	13	—	—	—	—	—	—	1	2
The Woodlands	124	155	163	442	269	60	70	—	2	34	4	7	—	—	17	2	1	—	—	—	—	1	2
Well Lane	113	144	193	450	274	48	58	—	2	25	2	1	—	—	24	—	1	—	—	—	—	2	1
Woodchurch Road	137	130	123	390	277	45	54	—	1	23	4	7	—	—	12	1	—	—	—	—	—	1	5
Park Road Temporary	34	66	—	100	72	13	16	—	1	8	—	—	—	—	5	—	1	—	—	—	—	—	1
Cleveland Street „	56	23	—	79	54	17	21	—	4	6	1	7	—	—	1	—	—	—	—	—	—	—	2
Price Street „	—	—	60	60	24	11	13	—	—	7	1	2	—	—	3	—	—	—	—	—	—	—	—
Pilgrim Street	76	115	—	191	114	17	18	—	1	9	—	2	—	—	2	—	—	—	—	—	—	—	4
Claughton H.G.	109	143	148	400	274	45	50	—	2	33	—	1	—	—	13	—	—	—	—	—	—	—	1

Holy Trinity	69	122	116	307	192	110	131	2	8	36	5	28	—	—	27	7	12	—	—	—	—	4	4
Our Lady's	126	53	90	269	131	83	119	1	14	29	10	9	—	—	35	3	6	—	1	—	5	6	
Oxton	8	26	46	80	23	13	14	—	1	7	—	—	—	—	6	—	—	—	—	—	—	—	
Rock Ferry H.G.	87	48	84	219	144	34	40	—	3	15	1	5	—	—	12	1	—	—	—	—	1	2	
St. Andrews, Conway St.	34	55	40	129	89	33	33	—	4	7	—	9	—	—	3	3	2	3	—	4	1	1	
St. Anne's	66	34	107	207	135	99	135	5	5	30	9	26	—	—	37	6	4	—	4	—	4	5	
St. Anne's R.C.	51	101	103	255	118	38	47	—	5	20	2	6	—	—	12	—	1	—	—	—	1	—	
St. Catherine's	36	83	102	221	92	32	37	—	4	17	—	2	—	—	11	—	—	—	—	—	2	1	
St. James'	54	19	61	134	70	32	38	1	2	7	1	7	—	—	15	—	2	—	—	—	—	3	
St. John's	86	121	141	348	193	128	184	—	14	44	15	35	—	—	43	4	11	—	1	1	10	5	
St. Joseph's	23	34	28	85	53	16	18	—	1	6	1	1	—	—	6	—	—	—	—	—	2	1	
St. Laurence's	105	230	184	519	289	154	207	2	9	63	8	27	—	—	69	9	8	—	1	1	5	5	
St. Luke's	89	84	138	311	175	25	30	—	3	9	4	2	—	—	10	—	—	—	—	—	—	2	
St. Mary's	—	—	118	118	36	27	27	—	2	21	—	1	—	—	2	—	—	—	—	—	1	—	
St. Paul's	45	86	86	217	108	28	28	—	1	23	—	—	—	—	4	—	—	—	—	—	—	—	
St. Peter's	83	118	143	344	169	120	145	3	10	30	2	22	—	—	46	8	8	—	3	—	6	7	
St. Werburgh's	108	109	95	312	175	89	105	—	9	35	2	16	—	—	28	6	3	—	—	—	—	6	
Tranmere H.G.	32	49	53	134	81	13	16	—	1	5	—	1	—	—	8	—	1	—	—	—	—	—	
Higher Elementary	—	—	100	100	87	29	29	—	—	6	—	7	—	—	15	—	—	—	—	—	—	1	
Pk. Rd. St. R. C. Central	—	—	66	66	26	16	18	—	5	6	1	2	—	—	4	—	—	—	—	—	—	—	
Combined Totals.....	2597	2805	3617	9019	5336	1952	2399	21	145	726	96	345	2	1	702	81	80	3	10	4	80	103	

* The number of defects found is in excess of the number of defective children, as one child may have several defects.

