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COUNTY COUNCIL OF LANARK.

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TWENTY-SECOND  
ANNUAL REPORT

OF THE  
COUNTY AND DISTRICT MEDICAL OFFICER.

---

1912.

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GLASGOW:

PRINTED BY ROBERT ANDERSON, 142 WEST NILE STREET.



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GOVERNMENT BOARD FOR SCOTLAND  
COUNTY COUNCIL OF LANARK  
COMMITTEE THEREOF

In presenting my Annual

Report, I beg to apologise for the delay in publishing

the work finished in the latter

part of the year, and treatment of the

1 and

of the Board and Officers

Your obedient Servant

JOHN P. ...

TO THE LOCAL GOVERNMENT BOARD FOR SCOTLAND,  
TO THE COUNTY COUNCIL OF LANARK, AND  
DISTRICT COMMITTEES THEREOF.

---

MY LORDS AND GENTLEMEN,

In submitting my Annual Report for  
the year 1912, I have to apologise for the delay in publication, which  
has been mainly due to the work involved in the further development  
of schemes for the detection, prevention, and treatment of tuberculosis.

I am,

MY LORDS AND GENTLEMEN,

Your obedient Servant,

JOHN T. WILSON.

COUNTY OFFICES,  
HAMILTON, *November, 1913.*

**STAFF.**  
**COUNTY HEALTH DEPARTMENT.**

---

**County Medical Officer.**

JOHN T. WILSON, M.D., D.P.H.

**Tuberculosis Officers and Assistant M.O.H.**

FRANK H. SCROGGIE, M.B., Ch.B., D.P.H.

DANIEL STEWART, M.D., D.P.H.

JOHN W. MILLER, M.B., Ch.B., D.P.H.

JAMES R. ADAM, M.B., Ch.B., D.P.H.

ROBERT RICHARDS, M.A., M.B., Ch.B., D.P.H.

J. THOMSON DICK, M.B., Ch.B., D.P.H.

CHRISTINA BARROWMAN, M.B., Ch.B., B.Sc. (P.H.).

**Bacteriologist.**

J. HUME PATTERSON, L.R.C.P.Ed., D.P.H.

**Chemist.**

WALTER BROWN, F.C.S.

**Inspectors—Food and Drugs, Rivers Pollution, &c.**

ROBERT M'NAUGHTON.

CHARLES MACARA.

FRANK M'ARTHUR.

DUNCAN J. BLACK.

*November, 1913.*

# COUNTY OF LANARK

(EXCLUSIVE OF BURGHS).

## Report by the Medical Officer of Health

*For the Year 1912.*

### I.—VITAL STATISTICS.

The **Area** of the County at the beginning of the year was **540,227** acres, and the **Population** estimated to the middle of the year was **303,722**.

By the Glasgow Boundaries Act, 1912, the City of Glasgow, on 5th November, annexed from the Lower Ward, 1,706 acres, with a population of 28,490 :—

	Acres.	Houses and Institutions.		Population.
		Occupied.	Empty.	
Glasgow or Barony Parish, -	1,063	5,451	411	26,114
Govan Parish, - - -	643	59	3	2,376

This shows the actual area of the County at the close of the year to have been 538,521 acres.

As the annexation took place so late in the year, it was arranged with the City Medical Officer of Health, with the concurrence of the Registrar-General, to continue the statistical records of the Lower Ward for the year 1912, as if no extension had occurred. In consideration of the annexation in the Lower Ward, and that the increase, over the preceding year, in the number of occupied houses, as ascertained in the Valuation Roll, 1912-13, was only 131 for the Upper and Middle Wards, it was decided to keep the estimated population the same as in 1911, viz. :—303,722. This population, less 2,753 in Lower Ward Institutions, is used in calculating the annual rates for the County.

Owing to corrections in the Revised Census (1911) Report, the census figures of the Lower Ward have been slightly increased from those given in the Annual Report for 1911.

The following table shows the increase of population during the two last decennial periods from the excess of births over deaths, compared with the actual increase as ascertained at the decennial censuses :—



Year.	Total Births.	Total Deaths.	POPULATION.			
			Natural Increase.	Actual Increase.	Gain.	Loss.
1891-1900	86,550	40,812	45,738	51,500	5,762	—
1901-1910	101,981	43,516	58,465	41,301	—	17,164

The decennial population, as ascertained at the last three censuses, 1891, 1901, and 1911, is given in the following table:—

Year.	Acreage.	Census Population.	Decennial Increase.	
			Total.	Percentage.
1891	542,909	209,814	—	—
1901	541,624	261,314*	51,500	24·5
1911	540,227	302,615	41,301	15·7

\* Does not include the population (5,642) in the area annexed to the Burgh of Govan as from 15th August, 1901.

The above statistics show, since 1891, a decrease of area amounting to 2,682 acres, and an increase of 92,801 in the population. The loss in area and population from annexation by burghal authorities during these decennial periods was as follows:—

	Acres.	Population.
1896—City of Glasgow annexed, - -	450	632
Burgh of Wishaw „ - -	465	1,100
1899—City of Glasgow „ - -	370	399
1901—Burgh of Govan „ - -	209	5,642
„ Hamilton „ - -	67	—
1906— „ Rutherglen „ - -	469	3,000
1908— „ Lanark „ - -	214	260
„ Motherwell „ - -	438	3,600
	<hr/>	<hr/>
	2,682	14,633
	<hr/>	<hr/>
1912—City of Glasgow „ - -	1,706	28,490

The census population for each parish or registration district will be found in the Upper, Middle, and Lower Ward district reports.

In Table A, the population is given for each year since 1891, and was estimated as follows:—For the period 1891-1900, the increases were based on the best data available, viz., the census figures of 1891 and 1901. For the period 1901-1911 the annual increments have been based almost entirely upon the number of inhabited houses, and it is interesting to find that the estimates made in this way are fairly well justified by the census figures obtained in 1911. It will, no doubt, be desirable to have the figures for the decennial period 1901-1911 estimated, as in the former decennial period, upon census figures.

The number of inhabited houses, as given in the Valuation Roll, 1912-13, was 59,666, and of unoccupied houses, 2,667. These figures show an increase of 131 in the former, and a decrease of 138 in the latter, as compared with the numbers given in the preceding year.

TABLE A.—POPULATION IN EACH OF THE DISTRICTS AND IN THE COUNTY AS ASCERTAINED AT THE DECENNIAL CENSUS, 1891-1901 AND 1911, ALSO AS ESTIMATED AT THE MIDDLE OF EACH YEAR FROM 1891 TO 1912.

YEAR.	DISTRICTS.			COUNTY.
	Upper Ward.	Middle Ward.	Lower Ward.	
	POPULATION AS	ASCERTAINED AT	DECENNIAL CE	NSUS.
1891 -	37,005	142,548	30,261	209,814
1901 -	40,420	179,363	*41,531	261,314
1911 -	42,978	202,663	56,974	302,615
	POPULATION ESTIMATED TO THE MIDDLE OF EACH	YEAR.		
1891 -	37,088	143,387	30,606	211,081
1892 -	37,422	146,781	32,024	216,227
1893 -	37,759	150,240	33,499	221,498
1894 -	38,098	153,765	35,035	226,898
1895 -	38,437	157,359	36,633	232,429
1896 -	38,779	161,021	38,296	238,096
1897 -	39,121	164,752	40,027	243,900
1898 -	39,466	168,551	41,829	249,846
1899 -	39,812	172,421	43,704	255,937
1900 -	40,159	176,361	45,657	262,177
1901 -	40,509	180,389	†45,327	†266,225
1902 -	40,868	184,588	43,474	268,930
1903 -	41,230	188,866	44,921	275,017
1904 -	41,230	191,267	47,987	280,484
1905 -	41,230	191,267	47,987	280,484
1906 -	41,900	195,000	‡49,000	‡285,900
1907 -	42,000	197,000	52,000	291,000
1908 -	42,500	198,000	54,000	294,500
1909 -	43,000	200,000	55,000	298,000
1910 -	43,200	202,000	55,800	301,000
1911 -	43,043	203,279	57,400	303,722
1912 -	43,043	203,279	57,400	303,722

\* Does not include the population (5,642) in the area annexed to the Burgh of Govan as from 15th August, 1901.

† The population here given for Govan is an *average* for the whole year, and on this the rates have been calculated.

‡ The population was reduced by further Burgh extensions, viz. :—

1906.	1908.	1908.
Rutherglen.	Motherwell.	Lanark.
3,000 persons.	3,600 persons.	260 persons.
469 acres.	438 acres.	214 acres.

The constitution of the population as regards age, sex, and conjugal conditions for each district is given in the following tables:—

AGE, SEX, AND CONJUGAL CONDITIONS OF THE POPULATION.

Sex and Condition.	All Ages	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90	90-95	Not Stated
<b>Both Sexes,</b>	<b>42,978</b>	<b>5,262</b>	<b>4,975</b>	<b>4,339</b>	<b>3,646</b>	<b>3,280</b>	<b>2,923</b>	<b>2,688</b>	<b>2,250</b>	<b>2,016</b>	<b>1,692</b>	<b>1,371</b>	<b>1,063</b>	<b>930</b>	<b>626</b>	<b>350</b>	<b>187</b>	<b>64</b>	<b>10</b>	<b>2</b>	<b>26</b>
Males—	21,650	2,703	2,516	2,290	1,941	1,649	1,443	1,369	1,133	993	818	704	513	441	271	131	66	25	2	...	23
Females,	21,328	2,559	2,459	2,049	1,705	1,631	1,480	1,319	1,117	1,023	874	667	550	489	355	219	121	39	8	2	3
Males—	14,328	2,703	2,516	2,287	1,666	900	506	361	222	174	130	92	65	46	21	11	6	1	...	...	2
Single,	6,567	...	...	3	272	736	914	984	860	765	627	523	355	277	160	57	22	6	1	...	...
Married,	720	...	...	...	2	11	23	23	49	54	60	88	91	115	89	63	33	18	1	...	...
Widowed,	35	...	...	...	1	2	...	1	2	...	1	1	2	3	1	...	...	...	...	...	21
Not Stated,	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females—	13,339	2,559	2,459	2,008	1,216	687	434	315	218	207	179	109	94	88	47	35	15	6	1	...	3
Single,	6,649	...	...	41	484	933	1,024	955	838	738	564	408	296	205	106	39	15	1	1	1	...
Married,	1,328	...	...	...	4	11	19	46	61	77	129	150	159	196	202	144	91	32	6	1	...
Widowed,	12	...	...	...	1	...	3	3	...	1	2	...	1	...	...	1	...	...	...	...	...
Not Stated,	202,663	29,882	27,162	23,453	19,769	17,503	16,309	14,310	10,430	8,281	6,923	5,133	3,832	3,007	2,115	957	390	150	28	9	9
<b>Both Sexes,</b>	<b>105,201</b>	<b>14,953</b>	<b>13,708</b>	<b>12,028</b>	<b>10,679</b>	<b>9,408</b>	<b>8,602</b>	<b>7,494</b>	<b>5,514</b>	<b>4,348</b>	<b>3,695</b>	<b>2,746</b>	<b>1,976</b>	<b>1,468</b>	<b>909</b>	<b>397</b>	<b>160</b>	<b>58</b>	<b>11</b>	<b>3</b>	<b>7</b>
Males—	97,462	14,929	13,454	11,425	9,090	8,095	7,707	6,816	4,916	3,933	3,228	2,387	1,856	1,539	1,206	560	230	92	17	6	2
Single,	70,371	14,953	13,708	12,028	10,651	8,027	4,401	2,283	1,446	971	631	498	219	158	73	36	11	7	...	...	5
Married,	31,767	...	...	28	1,370	4,134	5,090	5,421	4,300	3,448	2,851	2,118	1,348	907	498	178	60	11	4	...	1
Widowed,	3,048	...	...	...	9	65	117	170	240	269	345	361	409	403	338	183	89	40	7	3	...
Not Stated,	15	...	...	...	2	2	4	...	3	...	1	2	...	...	...	...	...	...	...	...	1
Females—	60,227	14,929	13,454	11,425	8,845	5,116	2,413	1,168	571	412	341	206	193	151	111	54	15	8	...	...	...
Single,	32,213	...	...	245	2,952	5,239	5,550	4,990	4,025	3,098	2,391	1,598	1,004	650	335	105	26	5	...	...	...
Married,	5,016	...	...	...	25	55	98	169	320	422	495	583	659	738	759	401	188	79	17	6	2
Widowed,	6	...	...	...	2	...	...	...	...	1	1	...	...	...	1	...	1	...	...	...	...
Not stated,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

UPPER WARD DISTRICT.

MIDDLE WARD DISTRICT.

AGE, SEX, AND CONJUGAL CONDITION OF THE POPULATION.

Sex and Condition.	All Ages	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90	90-95	95-Not Stated	
<b>Both Sexes,</b>	<b>56,974</b>	<b>7,229</b>	<b>6,392</b>	<b>5,445</b>	<b>4,991</b>	<b>4,571</b>	<b>4,441</b>	<b>4,067</b>	<b>3,168</b>	<b>2,640</b>	<b>2,155</b>	<b>1,587</b>	<b>1,324</b>	<b>1,013</b>	<b>680</b>	<b>331</b>	<b>130</b>	<b>55</b>	<b>6</b>	<b>5</b>	<b>6</b>	
Males,	29,094	3,647	3,475	2,837	2,483	2,218	2,265	2,099	1,616	1,366	1,121	834	693	509	299	138	43	17	2	1	2	
Females,	27,880	3,582	3,309	2,917	2,608	2,353	2,176	1,968	1,552	1,274	1,034	753	631	504	381	193	87	38	4	4	4	
<b>Males—</b>																						
Single,	18,836	3,647	3,429	3,475	2,831	2,113	1,152	730	424	297	159	119	117	71	36	16	...	1	...	...	2	
Married,	9,207	...	...	...	6	363	1,054	1,612	1,249	1,062	863	586	424	258	156	55	11	3	1	...	...	
Widowed,	1,045	...	...	...	...	6	11	63	69	87	98	129	152	178	107	67	32	13	1	1	...	
Not Stated,	6	...	...	...	1	1	...	...	1	...	1	...	...	2	...	...	...	...	...	...	...	
<b>Females—</b>																						
Single,	17,013	3,582	3,309	2,917	2,569	1,840	991	494	367	266	143	101	75	64	53	19	12	5	1	1	2	
Married,	9,154	...	...	...	38	666	1,344	1,531	1,190	949	710	449	326	171	95	30	5	2	...	...	...	
Widowed,	1,711	...	...	...	1	2	18	70	96	123	181	203	230	269	233	144	70	31	3	3	...	
Not Stated,	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	

LOWER WARD DISTRICT.

AGE AND SEX OF THE POPULATION.

<b>Both Sexes,</b>	<b>302,615</b>	<b>42,373</b>	<b>39,178</b>	<b>34,820</b>	<b>29,553</b>	<b>26,140</b>	<b>24,160</b>	<b>21,674</b>	<b>19,766</b>	<b>15,848</b>	<b>12,937</b>	<b>10,770</b>	<b>8,091</b>	<b>6,219</b>	<b>4,950</b>	<b>3,421</b>	<b>1,638</b>	<b>707</b>	<b>269</b>	<b>44</b>	<b>16</b>	<b>41</b>
Males,	155,945	21,303	19,756	18,019	15,806	13,832	12,469	11,202	10,505	8,263	6,707	5,634	4,284	3,182	2,418	1,479	666	269	100	15	4	32
Females,	146,670	21,070	19,422	16,801	13,747	12,308	11,691	10,472	9,261	7,585	6,230	5,136	3,807	3,037	2,532	1,942	972	438	169	29	12	9

TOTAL OF THE COUNTY.

**Statistical Tables.**—Table C, which in former years contained death-rates from certain causes of death during the whole period of County administration, has been modified. It contains only birth-rates, death-rates from all causes, and infantile death-rates. Death-rates from infectious diseases will be found under the respective headings.

**TABLE C.**—COUNTY BIRTH-RATES AND DEATH-RATES PER 1,000 OF THE POPULATION. INFANTILE DEATHS PER 1,000 BIRTHS.

Year.	Births.	Birth-rate.	Nett Deaths.	Death-rate.	Infants under 1 year.	
					Deaths.	Death-rate
1891	8,078	38·4	4,116	19·5	1,010	125·0
1892	8,334	38·7	3,964	18·4	1,023	122·7
1893	8,494	38·5	4,042	18·3	1,103	129·8
1894	8,368	37·0	3,616	16·0	914	109·2
1895	8,352	36·0	4,343	18·7	1,114	133·3
1896	8,565	36·1	3,455	14·5	907	105·8
1897	8,685	35·8	3,889	16·0	1,084	124·8
1898	8,868	35·7	4,187	16·8	1,126	126·9
1899	9,133	35·9	4,476	17·6	1,170	128·1
1900	9,673	37·1	4,724	18·1	1,322	136·6
<b>1891</b> to <b>1900</b> }	<b>8,655</b>	<b>36·9</b>	<b>4,081</b>	<b>17·4</b>	<b>1,077</b>	<b>124·2</b>
1901	10,049	38·0	4,529	17·1	1,334	132·7
1902	9,990	37·4	4,187	15·6	1,098	109·9
1903	10,147	37·1	4,120	15·1	1,180	116·2
1904	10,220	36·7	4,269	15·3	1,234	120·7
1905	9,992	35·9	4,186	15·0	1,186	118·6
1906	10,181	35·69	4,323	15·1	1,199	117·7
1907	10,226	35·43	4,363	15·1	1,128	108·3
1908	10,680	36·61	4,920	16·8	1,405	131·5
1909	10,413	35·29	4,251	14·41	1,128	108·3
1910	10,083	33·83	4,399	14·76	1,118	110·9
<b>1901</b> to <b>1910</b> }	<b>10,198</b>	<b>36·18</b>	<b>4,354</b>	<b>15·45</b>	<b>1,200</b>	<b>117·7</b>
1911	9,835	32·69	4,250	14·12	972	98·8
1912	9,905	32·91	4,166	13·84	1,054	106·4

The **Births** registered amounted to **9,905**—males, 5,101; females, 4,804. Of this number, 425, or 4·29 per cent., were illegitimate. The birth-rate was **32·91** per thousand of the population, being ·22 higher than the rate for the preceding year. The birth-rate for each district of the County was as follows:—Upper Ward, 26·9; Middle Ward, 34·98; and Lower Ward, 29·9. The birth-rate since 1891 is given in Table C, and shows a decline of about 6 per 1,000 during that period. If reference be made to the district reports, it will be found that the birth-rate is highest in the mining and manufacturing communities, and lowest among residential and agricultural communities. Similarly, the fall in the birth-rate has been more marked in the latter areas than the former.

The **Deaths** registered amounted to **4,668**. After making corrections for deaths which occurred in institutions and in other districts, as shown in Table B, the deaths of persons belonging to the district amounted to **4,166**. This is generally spoken of as nett deaths, and gave a death-rate of **13·84** per thousand. This is one of the lowest rates recorded, and is much below the average of previous years, as shown in Table C. The death-rate in each of the Wards was as follows:—Upper Ward, 11·52; Middle Ward, 14·5; and Lower Ward, 12·8.

The increase of births over deaths was 5,739, which represents the *natural increase* of the population.

Of 976 deaths occurring in institutions *within* the County districts, 765 were transferred out, as they were persons not belonging to the districts; on the other hand, 300 were *included*, as they were persons belonging to the districts who died in institutions outwith the districts. For the same reason, 91 deaths were excluded of persons dying in private residences and elsewhere, and 54 deaths were included. The details relating to each institution will be found in the district reports.

**TABLE B.**—PUBLIC INSTITUTIONS.—THE NUMBER SITUATED WITHIN EACH DISTRICT OF THE COUNTY OF LANARK WHERE PERSONS NOT BELONGING TO THE DISTRICT DIED, AND WHOSE DEATHS ARE EXCLUDED.

District.	Number of Institutions.	Total Population.	Total Deaths during 1912.	Deaths allocated to the District.	Deaths excluded.
Upper Ward, -	10	812	29	16	13
Middle Ward, -	15	2,300	291	150	141
Lower Ward, -	16	5,235	656	45	611
County, - -	41	8,347	976	211	765

**Deaths in relation to Age and Cause.**—If reference be made to Table B1 in the District Reports, the deaths will be found classified according to age and cause. The deaths are here arranged in recognised age periods, and the percentage proportion of deaths at each period given:—

Infant Period, - - under 1 year, -	1,054 deaths, or 25·3 per cent.
Under School Age, - 1-5 years, -	628 „ 15·07 „
School Age, - - 5-15 „ -	194 „ 4·6 „
Adolescence, - 15-25 „ -	214 „ 5·1 „
Early Mature Period, 25-45 „ -	503 „ 12·07 „
Late Mature Period, - 45-65 „ -	692 „ 16·6 „
Post Mature Period, - 65 and upwards,	881 „ 21·1 „

The population at each of these age periods, except the infant period, has been obtained from the Registrar-General, so that the actual death-rates for each age period can now be given.

POPULATION, DEATHS, AND DEATH-RATES AT AGE PERIODS.

	Under—5	5-15	15-25	25-45	45-65	Over 65
Population—						
(Census, 1911),	42,373	73,998	55,693	81,448	38,017	11,086
Deaths—						
(Year, 1912),	1,682	194	214	503	692	881
Death-rate per } 1,000 of the } population, }	39·69	2·62	3·84	6·17	18·20	79·46

The high death-rates at the extremes of life, and the very low rate during the school age period are clearly shown. The Infant death-rate can only be calculated in relation to the number of births.

*Infant Period.*—The infant death-rate for each year since 1891 is given in Table C. The average annual rate for the last two decennial periods was 124·2 and 117·7. For the year 1912 the rate was only 106·4, which is one of the lowest infant death-rates on record. Of the 1,054 deaths recorded, 409 took place during the first month, and 169 during the next two months, making 578 deaths of children under 3 months.

INFANT DEATHS CLASSIFIED ACCORDING TO CAUSE. NUMBER IN EACH GROUP COMPARED WITH THAT FOR THE PRECEDING YEAR.

	1912.	1911.
1.—Premature Birth, 168; Congenital Malformations, 63; Atelectasis, 14; Injury at Birth, 17.	262	232
2.—Diarrhœa, 102; other Digestive Diseases, 29; Atrophy, Debility, and Marasmus, 154; Rickets, 1.	286	383
3.—Pneumonia, 172; Bronchitis, 67; Laryngitis, 2; other Respiratory Diseases, 6.	247	187
4.—Tuberculosis—Pulmonary, 1; Meningeal, 17; Abdominal, 12; other Tuberculosis, 1.	31	57
5.—Meningitis, 22; Convulsions, 20; other Nervous Diseases, 6.	48	49
6.—Measles, 54; Whooping Cough, 53; Erysipelas, 1; other Septic Diseases, 5; Diphtheria, 3; Cerebro-Spinal Fever, 1; Syphilis, 1.	118	101
7.—Violence, 7; Suffocation (overlying), 3,	10	5
8.—Other Causes, 52,	52	58
Total,	1,054	1,072

**Infectious Diseases.**—The number of deaths due to infectious diseases which are compulsorily notifiable was 383, made up as follows:—

Diphtheria, - - - 45	Puerperal Fever, - - - 14
Scarlet Fever, - - - 39	Erysipelas, - - - 9
Typhoid Fever, - - - 21	Pulmonary Tuberculosis, 251
Cerebro-Spinal Fever, - 4	

The deaths from infectious diseases not compulsorily notifiable amounted to 452, made up thus:—measles, 198; whooping-cough, 120; and diarrhœa, 134.

These diseases are all discussed under a separate heading in Part II. of the district reports.

**Respiratory Diseases.**—The group of diseases under the heading respiratory has varied from time to time. In the years preceding 1906 this group included deaths from pneumonia and from influenza with respiratory symptoms. Since the year 1906 these two causes of death have been classified separately. Since 1911, bronchitis has also been given a separate heading. This change in the classification is indicated in the following tabular statement:—



## OLD CLASSIFICATION.

## ALL RESPIRATORY DEATHS.

Year.	Deaths.	Death-rate.	Year.	Deaths.	Death-rate.	Year.	Deaths.	Death-rate.
1891	832	3.95	1896	580	2.44	1901	659	2.49
1892	767	3.56	1897	816	3.36	1902	788	2.95
1893	762	3.45	1898	723	2.91	1903	733	2.68
1894	649	2.87	1899	787	3.09	1904	884	2.82
1895	898	3.88	1900	949	3.64	1905	757	2.72

## NEW CLASSIFICATION.

Year.	Pneumonia.		Bronchitis.		Influenza.		Other Respiratory Diseases.	
	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.
1906	184	0.64	—	—	25	0.08	499	1.75
1907	237	0.82	—	—	42	0.14	535	1.85
1908	241	0.82	—	—	37	0.12	645	2.21
1909	424	1.43	—	—	36	0.12	355	1.20
1910	453	1.52	—	—	22	0.07	325	1.10
1911	420	1.39	284	0.94	30	0.10	36	0.12
1912	448	1.49	257	0.85	14	0.04	39	0.13

*Pneumonia.*—Deaths from this disease have been classified separately since the year 1906. Deaths from broncho-pneumonia were, up till 1908, included in the general respiratory group, and since 1909 they have been included under the heading “Pneumonia.”

448 deaths occurred during the year 1912. Classified according to age, the deaths were as follows:—

Under 1	1-2	2-5	5-15	15-25	25-45	45-65	65 and upwards.
172	85	45	17	13	43	44	29

*Bronchitis.*—Up to the year 1911, deaths from this disease were included under the general respiratory heading. 257 deaths occurred during the year, and gave a death-rate of 0.85 per thousand of the population. Classified according to age, the deaths were as follows:—

Under 1	1-2	2-5	5-15	15-25	25-45	45-65	65 and upwards.
67	14	8	2	1	8	66	91

*Influenza.*—Deaths from this disease have been classified separately since the year 1906. During the year 14 deaths occurred, and gave a death-rate of 0.04 per thousand of the population. Classified according to the age, the deaths were as follows:—

Under 1	15-25	25-45	45-65	65 and upwards.
1	1	3	3	6

*Other Respiratory Diseases*—including asthma, congestion of the lungs, and acute croup—caused 39 deaths, and gave a death-rate of 0·13 per thousand of the population. Classified according to age, the deaths were as follows:—

Under 1	1-2	2-5	5-15	15-25	25-45	45-65	65 and upwards.
8	1	3	2	1	3	13	8

**Malignant Diseases.**—This group includes deaths from diseases certified as cancer, carcinoma, sarcoma, &c. From these causes 228 deaths occurred, and gave a death-rate of 0·75 per thousand of the population. The death-rate for each district of the County was as follows:—Upper Ward, 0·95; Middle Ward, 0·73; and Lower Ward, 0·69. The deaths and death-rates from this group of diseases since 1901 is given in the following tabular statement, viz. :—

Year	Deaths.	Death-rate.	Year.	Deaths.	Death-rate.
1901	136	0·51	1907	202	0·69
1902	138	0·51	1908	196	0·67
1903	166	0·68	1909	207	0·70
1904	157	0·56	1910	214	0·71
1905	153	0·55	1911	198	0·65
1906	206	0·72	1912	228	0·75

**Meteorology.**—Observations made at the stations established at Bothwell and Leadhills were duly forwarded to the Scottish Meteorological Society, and published by the Registrar-General. From these statistics given in the Quarterly Returns the following Table D has been prepared:—

TABLE D.—MONTHLY METEOROLOGICAL OBSERVATIONS FOR THE YEAR 1912. Taken at Bothwell and at Leadhills, furnished to the Scottish Meteorological Society, and published by the Registrar-General.

MONTH.	BOTHWELL (Altitude, O.S.D., 150).					LEADHILLS (Altitude, O.S.D., 1,300).				
	Mean Temperature.	Mean Daily Range.	Relative Humidity.	RAIN.		Mean Temperature.	Mean Daily Range.	Relative Humidity.	RAIN.	
				Number of Days it fell.	Amount.				Number of Days it fell.	Amount.
January, -	37.2	8.8	90	15	1.64	32.1	10.5	89	19	5.59
February, -	39.4	11.1	88	14	1.96	35.4	12.3	91	21	5.79
March, - -	43.4	11.6	87	21	3.28	38.4	11.5	89	26	7.77
April, - -	48.0	18.2	80	7	1.29	43.4	17.3	73	11	2.27
May, - - -	51.1	16.1	86	8	0.93	46.7	15.6	80	13	1.71
June, - - -	55.1	12.0	84	19	4.74	50.8	12.0	87	29	6.97
July, - - -	58.1	15.3	81	10	2.19	54.3	17.3	81	14	4.38
August, - -	53.4	12.3	84	22	2.92	48.9	13.0	88	25	6.11
September, -	49.9	16.0	86	9	1.88	46.5	15.6	85	10	3.38
October, - -	45.3	14.0	86	14	2.86	42.4	12.5	90	19	6.91
November, -	42.4	10.0	87	13	3.16	37.6	10.5	93	22	4.83
December, -	41.4	11.0	88	27	7.16	36.9	10.8	90	28	10.77
				179	34.01				237	66.48

## II.—PREVALENCE OF INFECTIOUS DISEASE.

Tables have been prepared for the district reports showing the morbidity, the fatality, and the mortality from the more common infectious diseases, and the corresponding tables for the County are here inserted.

**Smallpox.**—No cases of this disease occurred during the year.

### SMALLPOX.

YEAR.	NUMBERS.		YEAR.	NUMBERS.	
	Cases.	Deaths.		Cases.	Deaths.
(1)	(2)	(3)	(1)	(2)	(3)
1892	1	1	1901	169	25
1893	28	2	1902	66	3
1894	8	1	1903	41	1
1895	5	1	1904	183	15
<i>Average,</i>	<i>10.5</i>	<i>1.25</i>	1905	38	1
			<i>Average,</i>	<i>99.4</i>	<i>9.0</i>
1896	...	...	1906	1	Nil.
1897	7	1	1907	...	"
1898	1	...	1908	...	"
1899	11	...	1909	...	"
1900	34	5	1910	2	"
			<i>Average,</i>	<i>0.6</i>	"
<i>Average,</i>	<i>10.6</i>	<i>1.2</i>	1911	Nil.	"
			1912	"	"

*The Vaccination (Scotland) Act, 1907*, which provides for returns of statutory declarations of conscientious objection to vaccination, came into operation on 28th August, 1907. Forms were prepared and issued to registrars during the month of December, 1907. The following are the returns received since that date:—

	Number of Declarations.					
	Decr. 1907.	1908.	1909.	1910.	1911.	1912.
Upper Ward,	- 48	174	213	231	260	321
Middle Ward,	- 250	1,222	1,632	1,923	2,061	2,236
Lower Ward,	- 31	148	225	222	302	390
County,	- 329	1,544	2,070	2,380	2,623	2,947

During the year 1912 the declarations made amounted to **2,947**, the proportion of statutory declarations being **29.75** per cent. of the births. In Table C the number of births registered will be found in the second column. By comparing the number of births with the figures above given, the extent to which infants are not vaccinated on account of conscientious objection may be estimated.

**Diphtheria and Membranous Croup.**—589 cases; 45 deaths; fatality, 7·64 per cent.

These figures show a decrease on those for the preceding year. The following table shows no marked diminution in the death-rate during the last fifteen years. When one remembers that every facility that aids the early recognition of the disease and that even means of curing the disease are freely offered, it will be admitted that there is reason to regret that 45 deaths should have been recorded during 1912. Failure to recognise the disease and the delay in the administration of anti-toxin are undoubtedly responsible for the high mortality rate. Comparing one district with another, the death-rate in the Upper Ward was ·07; in the Middle Ward, ·13; and in the Lower Ward, ·25 per 1,000 of the population:—

DIPHThERIA AND MEMBRANOUS CROUP.

YEAR.	NUMBERS.		RATES.		
	Cases Notified.	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	376	119	31·6	1·7	5·5
1893	332	110	33·1	1·5	4·9
1894	331	102	30·8	1·4	4·5
1895	276	66	23·9	1·1	2·8
<i>Average,</i>	<i>328·75</i>	<i>99·25</i>	<i>30·19</i>	<i>1·47</i>	<i>4·44</i>
1896	335	52	15·5	1·4	2·1
1897	213	30	14·1	0·87	1·2
1898	213	37	17·3	0·85	1·4
1899	245	54	22·0	0·96	2·1
1900	327	66	20·1	1·2	2·5
<i>Average,</i>	<i>266·6</i>	<i>47·8</i>	<i>17·92</i>	<i>1·07</i>	<i>1·92</i>
1901	230	56	24·3	0·87	2·1
1902	254	45	17·7	0·95	1·6
1903	248	38	15·3	0·90	1·3
1904	274	48	17·5	0·98	1·7
1905	323	49	15·1	1·1	1·7
<i>Average,</i>	<i>265·8</i>	<i>47·2</i>	<i>17·75</i>	<i>0·97</i>	<i>1·73</i>
1906	433	61	14·1	1·5	2·1
1907	765	56	7·3	2·6	1·9
1908	860	69	8·0	2·9	2·3
1909	699	53	7·5	2·3	1·7
1910	617	55	8·9	2·1	1·8
<i>Average,</i>	<i>674·8</i>	<i>58·8</i>	<i>8·7</i>	<i>2·3</i>	<i>2·01</i>
1911	647	62	9·58	2·15	2·06
1912	589	45	7·64	1·95	1·49

**Scarlet Fever.**—Cases, 1,804; deaths, 39; fatality per cent., 2·16.

The following table shows that the prevalence of this disease, as indicated by the cases notified, reached a maximum in the years 1899 and 1909. During the last two years the epidemic prevalence has been receding, but in 1912 there has been an increase. Comparing one district with another, the death-rate in the Upper Ward was ·02; in the Middle Ward, ·04; and in the Lower Ward, ·16 per 1,000 of the population:—

## SCARLET FEVER.

YEAR.	NUMBERS.		RATES.		
	Cases Notified.	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	1,682	57	3·3	7·8	2·6
1893	1,333	39	2·9	6·04	1·7
1894	1,683	38	2·2	7·4	1·6
1895	1,347	46	3·4	5·8	1·9
<i>Average,</i>	<i>1511·25</i>	<i>45·0</i>	<i>2·98</i>	<i>6·77</i>	<i>2·01</i>
1896	1,123	40	3·5	4·7	1·6
1897	1,115	32	2·8	4·6	1·3
1898	1,845	65	3·5	7·4	2·6
1899	2,140	92	4·2	8·4	3·6
1900	1,807	72	3·9	6·9	2·7
<i>Average,</i>	<i>1606·0</i>	<i>60·2</i>	<i>3·75</i>	<i>6·46</i>	<i>2·42</i>
1901	1,818	55	3·0	6·8	2·08
1902	1,159	59	5·1	4·3	2·2
1903	810	21	2·5	2·9	0·7
1904	582	17	2·9	2·09	0·6
1905	473	14	2·9	1·7	0·5
<i>Average,</i>	<i>968·4</i>	<i>33·2</i>	<i>3·43</i>	<i>3·56</i>	<i>1·22</i>
1906	713	14	1·9	2·49	0·49
1907	1,037	29	2·7	3·5	1·0
1908	1,220	33	2·7	4·1	1·1
1909	2,156	50	2·3	7·3	1·6
1910	1,805	38	2·1	6·0	1·2
<i>Average,</i>	<i>1386·2</i>	<i>32·8</i>	<i>2·36</i>	<i>4·75</i>	<i>1·12</i>
1911	1,549	34	2·19	5·15	1·13
1912	1,804	39	2·16	5·99	1·28

**Typhoid Fever.**—Cases, 135; deaths, 21; fatality per cent., 15·5.

The prevalence of this disease, as shown by the number of notifications received, shows a decrease over that for the preceding year, but the fatality is much above the average. The death-rates were:—Upper Ward, ·04; Middle Ward, ·08; and Lower Ward, ·03 per 1,000 of the population:—

TYPHOID FEVER.

YEAR.	NUMBERS.		RATES.		
	Cases Notified.	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	446	64	14·3	2·07	2·9
1893	865	90	10·4	3·9	4·08
1894	414	59	14·2	1·8	2·6
1895	561	59	10·5	2·4	2·5
<i>Average,</i>	<i>571·5</i>	<i>68</i>	<i>11·9</i>	<i>2·5</i>	<i>3·04</i>
1896	433	47	10·8	1·8	1·9
1897	312	50	16·02	1·2	2·06
1898	566	61	10·7	2·2	2·4
1899	509	74	14·5	2·00	2·9
1900	305	46	15·08	1·1	1·7
<i>Average,</i>	<i>425</i>	<i>55·6</i>	<i>13·08</i>	<i>1·7</i>	<i>2·2</i>
1901	566	69	1·2	2·1	2·6
1902	280	51	18·2	1·04	1·9
1903	315	52	16·5	1·1	1·9
1904	205	29	14·1	0·7	1·04
1905	406	44	10·8	1·4	1·5
<i>Average,</i>	<i>354·4</i>	<i>49</i>	<i>13·8</i>	<i>1·3</i>	<i>1·8</i>
1906	416	52	12·5	1·4	1·8
1907	217	29	13·3	0·7	1·00
1908	226	21	9·2	0·7	0·7
1909	219	14	6·3	0·7	0·4
1910	217	10	4·6	0·7	0·3
<i>Average,</i>	<i>259</i>	<i>25·2</i>	<i>9·73</i>	<i>0·88</i>	<i>0·86</i>
1911	189	28	14·81	0·6	0·93
1912	135	21	15·5	0·4	0·69

This Table includes a few cases of Doubtful Fevers.

**Cerebro-Spinal Fever.**—5 cases ; 4 deaths.

This disease still lingers, and deaths were reported in both the Middle and Lower Ward Districts.

CEREBRO-SPINAL FEVER.

YEAR.	NUMBERS.		RATES.		
	Cases.	Deaths.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
1)	(2)	(3)	(4)	(5)	(6)
1906	49	42	85·7	·17	1·47
1907	229	171	74·6	·79	5·92
1908	135	87	64·4	·46	2·98
1909	21	10	47·6	·07	·33
1910	11	7	63·6	·03	·23
<i>Average,</i>	<i>89</i>	<i>63</i>	<i>71·2</i>	<i>·30</i>	<i>2·17</i>
1911	10	4	40·0	·03	0·13
1912	5	4	80·0	·013	0·13

**Puerperal Fever.**—33 cases were notified and 14 deaths were recorded.

**Erysipelas.**—280 cases were notified and 9 deaths were recorded.

**Tuberculosis.**—*Pulmonary Tuberculosis.*—Cases, 528; deaths, 251, and gave a death-rate of **0·83** per 1,000 of the population.

The following table shows the decline which has taken place in the death-rate during the last four quinquennial periods :—

PULMONARY TUBERCULOSIS IN THE COUNTY OF LANARK AND IN EACH DISTRICT, DEATH-RATES FOR QUINQUENNIAL PERIODS 1891-1910 AND FOR THE YEARS 1911 AND 1912 PER 10,000 OF THE POPULATION.

DISTRICT.	1891-1895.	1896-1900.	1901-1905.	1906-1910.	1911.	1912.
Upper Ward,	12·02	11·90	10·58	8·13	7·20	6·27
Middle Ward,	13·51	11·44	10·01	8·83	9·1	8·7
Lower Ward,	12·83	11·70	12·40	11·30	6·23	8·6
County of Lanark, }	13·16	11·56	10·48	9·15	8·31	8·33



*Other forms of Tuberculosis* caused 182 deaths, and gave a death-rate of 0·60 per 1,000 of the population. These, classified according to the type of the disease, give the following result:—

Meningeal Tuberculosis, ... ..	75
Abdominal Tuberculosis, ... ..	87
Other Tuberculosis, ... ..	20
<b>Total, ... ..</b>	<b>182</b>

The combined figures for all forms of tuberculosis gave a death-rate of 1·43 per 1,000 of the population. The rate for each Ward was as follows:—Upper Ward, 1·02; Middle Ward, 1·52; and Lower Ward, 1·46.

The following table gives for each year the deaths and death-rates per thousand of the population (*a*) from pulmonary tuberculosis, and (*b*) from other forms of tuberculosis:—

	Pulmonary Tuberculosis.		Other Forms.	
	Deaths.	Death-rate.	Deaths.	Death-rate.
1891	309	1·47	206	0·98
1892	281	1·30	195	0·90
1893	302	1·36	191	0·86
1894	273	1·20	154	0·68
1895	287	1·24	202	0·87
1896	311	1·31	172	0·72
1897	267	1·10	178	0·73
1898	241	0·97	198	0·79
1899	304	1·19	210	0·82
1900	313	1·20	219	0·84
<b>1891</b>	<b>288</b>	<b>1·23</b>	<b>192</b>	<b>0·81</b>
to				
<b>1900</b>				
1901	286	1·08	226	0·85
1902	275	1·03	173	0·64
1903	253	0·92	194	0·71
1904	318	1·14	231	0·83
1905	294	1·06	222	0·79
1906	256	0·89	231	0·80
1907	272	0·94	205	0·71
1908	267	0·91	213	0·73
1909	297	1·00	259	0·87
1910	244	0·81	271	0·90
<b>1901</b>	<b>276</b>	<b>0·97</b>	<b>222</b>	<b>0·78</b>
to				
<b>1910</b>				
1911	250	0·83	224	0·74
1912	251	0·83	182	0·60

**Measles.**—198 deaths, giving a death-rate of 6·58 per 10,000 of the population. As this disease is not notifiable, it has been necessary, in preparing the following table, to estimate the number of cases. For the Upper Ward the estimation is 25 cases to each death, and for the

Middle and Lower Wards 20 cases. This estimation, or rate of fatality (see Column 4), is based on the experience that the large town or urban areas have a higher fatality from measles than the rural areas. The table shows that, during the first ten years of County Administration, the average annual death-rate was 6·65 per 10,000 of the population, and during the last ten years the average has fallen to 4·35 per 10,000 of the population. This decline in the death-rate may be due either to a decrease in the fatality or a decrease in the prevalence of measles, but is probably due to both factors. During similar periods, the average annual death-rate in the Upper Ward decreased from 2·69 to 1·34 per 10,000 of the population; in the Middle Ward, from 7·9 to 4·9; and in the Lower Ward from 5·7 to 4·65:—

## MEASLES.

YEAR.	NUMBERS.		RATES.		
	Cases Estimated.	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population
(1)	(2)	(3)	(4)	(5)	(6)
1892	3,730	185	4·9	17·3	8·5
1893	4,745	231	4·8	21·5	10·4
1894	2,005	100	4·9	8·8	4·4
1895	4,540	223	4·9	19·6	9·6
<i>Average,</i>	<i>3,458</i>	<i>169·5</i>	<i>4·8</i>	<i>15·4</i>	<i>7·5</i>
1896	1,690	81	4·7	7·1	3·4
1897	1,750	87	4·9	7·2	3·5
1898	5,915	293	4·9	23·8	11·8
1899	1,035	51	4·9	4·07	2·0
1900	4,350	214	4·9	16·7	8·2
<i>Average,</i>	<i>2,948</i>	<i>145·2</i>	<i>4·9</i>	<i>11·8</i>	<i>5·8</i>
1901	1,705	85	4·9	6·4	3·2
1902	2,515	124	4·9	9·4	4·6
1903	1,685	84	4·9	6·1	3·07
1904	2,425	121	4·9	8·7	4·3
1905	1,990	99	4·9	7·1	3·5
<i>Average,</i>	<i>2,064</i>	<i>101·8</i>	<i>4·9</i>	<i>7·5</i>	<i>3·7</i>
1906	2,545	125	4·9	8·9	4·3
1907	600	30	5·0	2·07	1·03
1908	6,800	335	4·9	23·3	11·4
1909	340	16	4·7	1·1	0·5
1910	4,540	224	4·9	15·2	7·5
<i>Average,</i>	<i>2,965</i>	<i>146</i>	<i>4·9</i>	<i>10·16</i>	<i>5·0</i>
1911	1,225	61	5·0	4·07	2·02
1912	3,980	198	4·9	13·22	6·58

**Whooping-cough.**—120 deaths, and gave a death-rate of 3·98 per 10,000 of the population, which is a decrease from that of the preceding year. The following table is prepared on the same basis as that of Measles. It will be observed that on comparing the average annual death-rate of the first decennial period with that of the second decennial period of County Administration, there has only been a slight decrease, viz. :—from 5·2 to 4·9 per 10,000 of the population. During similar periods the average annual death-rate in the Upper Ward decreased from 4·26 to 2·53 per 10,000 of the population; in the Middle Ward, 5·7 to 5·2; and in the Lower Ward the rate increased from 4·05 to 5·85 :—

WHOOPING-COUGH.

YEAR.	NUMBERS.		RATES.		
	Cases Estimated.	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	2,310	110	4·7	10·7	5·1
1893	2,315	113	4·8	10·4	5·1
1894	3,570	173	4·8	15·8	7·6
1895	3,090	147	4·7	13·3	6·3
<i>Average,</i>	<i>2,593·25</i>	<i>123·75</i>	<i>4·7</i>	<i>11·6</i>	<i>5·5</i>
1896	1,890	93	4·9	7·9	3·9
1897	3,215	157	4·8	13·2	6·4
1898	2,525	124	4·9	10·1	4·9
1899	3,505	169	4·8	13·7	6·6
1900	1,495	74	4·9	5·7	2·8
<i>Average,</i>	<i>2,526</i>	<i>123</i>	<i>4·8</i>	<i>10·1</i>	<i>4·9</i>
1901	4,535	223	4·9	17·1	8·4
1902	2,485	123	4·9	9·3	4·6
1903	2,985	146	4·8	10·9	5·3
1904	2,520	124	4·9	9·06	4·4
1905	2,235	110	4·9	8·03	3·9
<i>Average,</i>	<i>2,952</i>	<i>145·2</i>	<i>4·9</i>	<i>10·8</i>	<i>5·3</i>
1906	2,815	138	4·9	9·8	4·8
1907	2,960	146	4·9	10·2	5·05
1908	3,420	167	4·8	11·7	5·7
1909	2,865	141	4·9	9·7	4·7
1910	1,850	89	4·8	6·2	3·0
<i>Average,</i>	<i>2,742</i>	<i>136·2</i>	<i>4·9</i>	<i>9·5</i>	<i>4·6</i>
1911	3,750	184	4·9	12·46	6·1
1912	2,430	120	4·9	8·07	3·89

**Diarrhœal Diseases.**—Diarrhœa was the cause of 134 deaths, and gave a death-rate of 0·44 per thousand of the population. The rate for each district of the County was as follows:—Upper Ward, 0·30; Middle Ward, 0·46; and Lower Ward, 0·49. The following shows the death-rates since the year 1891:—

	Deaths.	Death-rate.		Deaths	Death-rate.
1891	188	0·89	1902	252	0·94
1892	167	0·77	1903	298	1·09
1893	249	1·12	1904	289	1·03
1894	130	0·57	1905	294	1·05
1895	260	1·12	1906	326	1·14
1896	150	0·63	1907	185	0·64
1897	231	0·95	1908	354	1·21
1898	361	1·45	1909	208	0·70
1899	406	1·59	1910	269	0·90
1900	277	1·44	1901	290	1·02
1891 } to } 1900 }	241	1·05	1910 }		
1901	425	1·60	1911	322	1·07
			1912	134	0·44

### III.—GENERAL.

Under this heading will be found a report by Dr. Patterson on the work done in the bacteriological laboratory; by Mr. Brown on the work done in the chemical laboratory; and by the four inspectors on the work done under the Food and Drugs Acts, the Shops Acts, Fertilisers and Feeding Stuffs Act, also the Rivers Pollution Prevention Acts. All these executive duties are under the administration of the Public Health Committee of the County Council.

**Housing.**—In Table E the houses erected each year are classified according to size, and in the last column the percentage proportion of one-apartment houses is given.

TABLE E.—SHOWING NUMBER AND SIZE OF HOUSES SET FORTH IN PLANS SUBMITTED UNDER BYE-LAWS REGULATING THE BUILDING OR RE-BUILDING OF HOUSES OR BUILDINGS DURING EACH OF THE FOURTEEN YEARS 1899-1912.

Year.	One Apartment.	Two Apartments.	Three Apartments.	Four Apartments.	Five Apartments and Upwards.	Total Houses.	Percentage proportion of One-apartment Houses.
*1899	240	902	237	113	163	1,655	...
*1900	105	1,159	209	61	125	1,659	...
1901	182	1,421	513	166	97	2,379	7·65
1902	360	1,425	421	165	269	2,640	13·63
1903	416	1,432	315	84	297	2,544	16·35
1904	193	530	388	180	314	1,605	12·02
1905	191	577	294	105	370	1,537	12·42
1906	207	856	223	123	397	1,806	11·46
1907	149	607	247	84	212	1,299	11·47
1908	192	686	233	94	163	1,368	14·03
1909	89	534	122	74	115	934	9·52
1910	141	333	101	50	104	729	19·34
1911	89	352	112	36	76	665	13·38
1912	22	167	68	22	51	330	6·6

\* The figures for these two years are not complete, there being no record for the Upper Ward as the Building Bye-laws were not approved until March, 1901.

**Staff.**—Two members of the staff resigned on receiving appointments elsewhere, Dr. John A. Watt, on 15th December, 1912, to take up an appointment as Tuberculosis Officer in Derbyshire, and Dr. Daniel Stewart, in June, 1913, to take up a similar appointment in the West Riding of Yorkshire. The staff has been very largely augmented during 1913. This was to meet the development of the work connected with the detection, prevention, and treatment of tuberculosis, and will be referred to in subsequent reports.

# Bacteriological Laboratory.

J. HUME PATTERSON, L.R.C.P. & S.ED., D.P.H.

The number of specimens received during the year for examination was 6,715. The sources of supply might be classified thus:—

From Medical Practitioners,	-	3,542 specimens
„ Public Health Staff,	-	753 „
„ Hospital Physicians,	-	2,193 „
„ School Medical Staff,	-	91 „
„ County Veterinary Surgeon (E.C.),	22	„
„ „ „ „ (P.H.),	76	„
„ other Veterinary Surgeons,	19	„
„ Slaughter-house Staff,	-	19 „

The areas of supply are under 12 different Local Authorities—the 3 sanitary districts of the County and 9 burghs. A few specimens were also received from areas outwith the County.

The number of specimens received each year for examination since the opening of the laboratory will be found in a table at the end of this report.

Table G shows that the number of specimens received from the Upper Ward was 1,261; from the Middle Ward, 2,922; and from the Lower Ward, 1,036; making a total of 5,219 from the County Districts. From Burgh Authorities and others:—Hamilton, 326; Airdrie, 111; Coatbridge, 286; Rutherglen, 163; Kirkintilloch, 34; Wishaw, 66; Motherwell, 17; Lanark, 334; Biggar, 16; others, 20; making a total of 1,373.

TABLE G.—SHOWING THE NUMBER OF SPECIMENS RECEIVED.  
FROM THE UPPER, MIDDLE, AND LOWER WARDS OF THE COUNTY.

WARD.	Typhoid.		Diphtheria.		Phthisis.		Tubercle other than Phthisis.		Cerebro-spinal Meningitis.				Anthrax.		Glanders.		Other Specimens.	
	+	-	+	-	+	-	+	-	Fluids.	Swabs.	+	-	+	-	+	-	+	-
Upper, -	8	30	195	818	54	112	6	17	...	2	...	...	8	...	...	1	5	5
Middle, -	170	314	430	923	275	565	30	46	1	6	1	1	6	3	...	1	63	87
Lower, -	17	55	248	453	74	148	6	6	...	4	...	...	3	...	...	...	15	7
Total, 5,219	195	399	873	2,194	403	825	42	69	1	12	1	1	17	3	...	2	83	99

## FROM BURGH AUTHORITIES AND OTHERS.

BURGH.	Typhoid.		Diphtheria.		Phthisis.		Tubercle other than Phthisis.		Cerebro-spinal Meningitis.				Anthrax.		Glanders.		Other Specimens		
	+	-	+	-	+	-	+	-	Fluids.		Swabs.		+	-	+	-	+	-	
									+	-	+	-							
Hamilton, -	3	29	38	75	26	94	1	7	...	...	...	...	...	...	...	...	...	10	43
Airdrie, -	4	21	9	11	11	45	...	5	...	...	...	...	...	...	...	...	...	3	2
Coatbridge, -	12	22	54	82	28	67	...	2	...	1	...	...	...	...	...	...	...	5	13
Rutherglen, -	4	15	14	63	18	44	...	3	...	...	...	...	...	...	...	...	...	...	2
Kirkintilloch,	3	4	3	4	6	12	...	2	...	...	...	...	...	...	...	...	...	...	...
Wishaw, -	2	8	4	41	3	5	...	1	...	...	...	...	...	...	...	...	...	...	2
Motherwell, -	...	1	...	...	2	5	...	...	...	...	...	...	...	...	...	...	...	8	1
Lanark, -	3	6	115	179	15	13	...	...	...	...	...	...	...	...	...	...	...	3	...
Biggar, -	...	...	...	1	3	3	...	...	...	...	...	...	...	...	...	...	...	8	1
Others, -	...	5	2	5	5	3	...	...	...	...	...	...	...	...	...	...	...	...	...
Total, 1,373	31	111	239	461	117	291	1	20	...	1	...	...	...	...	...	...	...	37	64

**Typhoid or Enteric Fever.**—736 specimens were received for examination, and, of these, 226 were returned as positive, and 510 as negative. The sources from which the specimens were received may be enumerated thus:—

		Results of Examination.	
		Wards.	
			+      0
Medical Practitioners,	{	Upper,	... .. 5      22
		Middle,	... .. 59     158
		Lower,	... .. 4      37
		Burghs,	... .. 31     111
Hospital Staff,	{	Upper,	... .. 2      3
		Middle,	... .. 79     69
		Lower,	... .. 12     16
Public Health Staff,	{	Upper,	... .. 1      5
		Middle,	... .. 32     87
		Lower,	... .. 1      2
Total,		... ..	226    510

These figures comprise 720 specimens of blood, 15 urines, 1 fæces.

*Blood.*—682 specimens from suspected cases of typhoid fever, examined for Widal's reaction, 204 of which gave positive results, while 478 gave negative results.

38 specimens, from 22 members of the Hospitals' Staff, treated with anti-typhoid vaccine, were examined for Widal's reaction.

*Urine.*—15 specimens, received from Middle Ward Hospital Physicians, examined for the bacillus typhosus, gave positive results in 7 of the cases.

*Fæces.*—1 specimen, received from Middle Ward Hospital Physician, examined for bacillus typhosus gave a negative result.

**Diphtheria.**—3,766 swabs and 1 specimen of milk were received for examination, and of these 1,112 were returned as positive, 2,425 as negative, and 230 gave growths of the pseudo-diphtheria bacillus. The sources from which the specimens were received may be enumerated thus:—

				Results of Examinations.		
Wards.				+	o	Pseudo.
Medical Practitioners,	{	Upper, ...	...	93	146	16
		Middle, ...	...	207	441	25
		Lower, ...	...	54	142	7
		Burghs, ...	...	238	431	29
Hospital Staff,	{	Upper, ...	...	89	455	92
		Middle, ...	...	178	183	17
		Lower, ...	...	190	258	37
Public Health Staff,	{	Upper, ...	...	13	107	2
		Middle, ...	...	43	246	5
		Lower, ...	...	4	8	—
School Medical Staff,	{	Upper, ...	...	—	—	—
		Middle, ...	...	2	6	—
		Lower, ...	...	—	1	—
		Burghs, ...	...	1	1	—
Total, ...				1,112	2,425	230

333 of the above swabs were taken by the Public Health Staff, from scholars at schools in districts where the disease prevailed.

The following table shows the number and results of swabs from each school:—

School.	Results of Examination.			
	+	o	Pseudo.	Total.
Douglas, ...	3	16	1	20
Ponfeigh, ...	5	22	1	28
New Lanark, ...	—	44	—	44
Kirkfieldbank, ...	3	9	—	12
Elmwood, ...	20	96	3	119
West Maryston, ...	6	104	—	110
	37	291	5	333



11 swabs were received from the School Medical Staff, 3 of which gave positive results.

Of the positive swabs received from medical practitioners, 1 was from an ear, 1 from an eye.

1 specimen of milk received from a medical practitioner was examined for the bacillus, with negative result. Hoffman's pseudo-diphtheria bacillus was found in 150 of the 2,349 negative throat swabs, and in 80 of the 306 negative nasal swabs, giving a percentage of 6.25 in the former and 26 in the latter. These results correspond with those obtained in former years, showing the pseudo-diphtheria bacillus to be more prevalent in the nose than in the throat.

**Tuberculosis.**—1,774 specimens were received for examination, and the sources from which they were received may be enumerated thus:—

		Results of Examination.					
		Sputum.		Urine.		Other specimens	
		+	o	+	o	+	o
Medical Practitioners,	Wards.						
	Upper, ...	29	91	1	—	—	1
	Middle, ...	108	399	—	6	—	5
	Lower, ...	37	115	—	—	—	1
Hospital Staff,	Burghs, ...	117	284	—	5	—	6
	Upper, ...	24	21	—	—	—	—
	Middle, ...	166	157	1	—	1	1
Public Health Staff,	Lower, ...	37	30	—	2	2	—
	Upper, ...	—	—	—	—	—	—
	Middle, ...	—	—	—	—	—	—
School Medical Staff,	Lower, ...	—	—	—	—	—	—
	Upper, ...	1	—	—	—	—	—
	Middle, ...	1	9	—	—	—	—
	Lower, ...	—	3	—	—	—	—
	Burghs, ...	—	7	—	—	—	—
		520	1,116	2	13	3	14

		Milk.		Others.	
		+	o	+	o
Veterinary Surgeons,	Upper Ward, ...	5	16	—	—
	Middle Ward, ...	18	31	—	—
	Lower Ward, ...	3	4	—	—
	Burghs, ...	1	15	—	—
Slaughter-house Staff, ...	...	—	—	9	4
		27	66	9	4

*Sputum.*—1,636 specimens from persons known or suspected to be suffering from pulmonary tuberculosis were examined for the tubercle bacillus. The results were positive in 520 cases, while in 1,116 the micro-organism was not found.

21 of these specimens were received from the School Medical Staff, and 2 proved positive.

*Urine.*—15 specimens from persons suspected to be suffering from tubercle of the urinary organs were examined, with positive results in 2 of these.

*Other specimens.*—5 specimens of pleuritic fluid and 6 of pus were examined. 1 of the former and 2 of the latter gave positive results. 2 specimens of synovial fluid and 3 fæces gave negative results, while 1 specimen of spinal fluid proved positive.

*Tuberculous Disease of the Udder of Cows.*—During the year 93 samples of milk, from 93 cows with suspected disease of the udder, were examined, 34 of which gave positive results, giving an average of 36.17 per cent. of the samples taken.

Of these positive samples, 27 were reported direct from the smear examination, enabling the milk from these cows to be stopped within two days of receipt of the sample.

Of the 67 samples which gave negative results in the smear preparations, 60 were subjected to animal inoculation, and only 7 proved positive.

*Miscellaneous Specimens from Animals for Tubercle.*—3 specimens of glands, 1 muscle, 2 livers, 1 tongue, and 1 lung, all taken from the bovine animal, gave positive results, while 1 specimen of pus, 1 kidney, 1 spleen, and 2 glands gave negative results.

**Cerebro-Spinal Meningitis.**—The number of specimens examined was 16, consisting of 14 spinal fluids and 2 nasal swabs, taken from 13 patients. One nasal swab and 2 spinal fluids proved positive. 1 of the negative spinal fluids showed many tubercle bacilli in the smear preparation and 1 showed numerous Fraenkel's pneumococci.

**Anthrax.**—17 specimens from cattle were examined, with positive results.

3 samples of feeding stuffs, taken from farms where cases had occurred, were also examined by culture and feeding tests, with negative results.

**Glanders.**—2 specimens of lung from the horse were examined, with negative results.

**Ringworm.**—139 specimens of hair from the scalp were examined, 69 of these showed spores or mycelium of *tinea tonsurans*, and 4 elements of *tinea favosa* (favus). 66 gave negative results. 45 of the positive specimens and 22 of the negative were received from the School Medical Staff.

**Ophthalmia Neonatorum.**—34 specimens taken from the eyes of infants suspected to be suffering from gonorrhœal infection were received; 6 of these gave positive results, and 28 negative results.

**Epidemic Ophthalmia.**—41 specimens were received. *On culture* 6 showed bacillus xerosis, 21 staphylococcus aureus, 5 B. xerosis and staphylococcus, and 9 gave no growths. The specimens were also examined for the bacilli of Koch-Weeks, Müller, and Morax, with negative results.

**Venereal Disease.**—8 specimens of pus were received and examined for the gonoccus, and 2 gave positive results.

**Miscellaneous Specimens.**—48—*Positive*—1 urine and 3 specimens of pus for pathogenic micro-organisms, and 1 swab for micro-coccus rheumaticus. *Negative*—5 urines, 2 specimens of pus, 2 of synovial fluids for pathogenic micro-organisms, 1 uterine scraping for malignancy, 1 specimen of blood for pernicious anæmia, 1 blood specimen for relapsing fever, and 31 samples of water.

The following 8 specimens were from animals:—*Positive*—1 liver and 1 gland for actinomycosis, and 2 intestines for Johne's disease. *Negative*—1 pus for actinomycosis, 1 lung and 1 liver for pathogenic micro-organisms, and 1 gland for aspergillosis.

**Flour.**—66 samples were examined microscopically, in connection with an inquiry under the Food and Drugs Acts anent bleached flour. The results obtained were summarised in evidence as follows:—“The lower-grade qualities are both higher in yellow colour, and contain hairs, epicarp, and seed-coat particles. The bleaching removes the colour of the mass of lower-grade material as a whole, but these particles are left unaltered, and form a guide to the microscopist that the admixture has been disguised to the naked eye, and, to a simple lens, by the bleach. It is not claimed that the offal particles are bleached, but that they form an invariable accompaniment of lower-grade yellow-coloured flour which must be bleached before it can be added to the rest of the flour. Hence either a high quality bleached or unbleached flour does not contain such particles, but a low-quality flour, bleached to represent a high-quality flour, does contain these

particles, and my experience is that the majority of so-called high-class bleached flours on the market are flours which are mixtures, and would be low-grade without bleaching."

56 experiments were also carried out, to test the germicidal action of the gas (nitric oxide) employed in the process of bleaching, and it was found to have a very powerful effect.

RECORD OF WORK DONE SINCE 1903.

Year.	Specimens.	Sources of Supply.						
		Med. Pract.	P. H. Staff	Hosp. Staff.	Sch. Med. Staff.	County V. S.	P. H. V. Ss.	Slaugh. Staff.
1903	569	...	...	...	...	...	...	..
1904	791	...	...	...	...	...	...	...
1905	1,270	...	...	...	...	...	...	...
1906	2,061	1,651	142	209	...	31	28	...
1907	5,678	2,739	1,794	1,094	...	40	...	11
1908	8,311	4,310	1,813	1,911	...	99	150	28
1909	7,774	3,202	1,148	3,041	...	44	292	47
1910	6,945	2,951	406	3,200	29	75	247	37
1911	5,949	2,890	494	2,250	99	19	172	25
1912	6,715	3,542	753	2,193	91	20	97	19

# Chemical Laboratory.

WALTER BROWN, F.C.S.

The number of samples analysed or examined during the year amounted to 2,278, being an increase of 1,485 over 1911. This increase is entirely due to the number of samples examined under the Food and Drugs Acts, including the investigation as to the changes in the composition of flour when bleached by nitrogen peroxide; and a special investigation as to variations in the composition of cow's milk. These samples have all been referred to in the monthly reports. The following table shows for each year since 1902 the number of samples analysed in the laboratory. In this table the various samples are classified according to the administrative authority under which they were obtained.

In connection with the administration of Rivers Pollution Prevention Acts there were 129 samples. These are again further divided into sewage works; trade effluents, including water as raised from mines and streams, according to the source from which they were taken, showing 30 from sewage works, 30 trade effluents, and 69 from streams.

Under Public Health Department 514 samples were analysed—100 from public supplies, 35 from private water supplies, and 379 special samples. The special samples include 366 small daily samples taken from the clean-water tank at Glasford filters, which are specially examined for colour and alkalinity; and 13 samples other than water which have been examined and cannot readily be classified under the above headings. In connection with Food and Drugs, 1,635 samples were analysed.

SAMPLES EXAMINED IN THE CHEMICAL LABORATORY CLASSIFIED ACCORDING TO ADMINISTRATIVE AUTHORITY UNDER WHICH THEY WERE OBTAINED.

Year.	Rivers Pollution.			Public Health Department.			Food and Drugs.	Total.
	Sewage Works.	Trade Effluents.	Streams.	Water Supplies.				
				Public.	Private.	Special.		
1902	49	87	180	18	16	...	...	350
1903	77	101	78	35	35	...	4	330
1904	55	54	85	40	38	8	34	314
1905	130	53	105	16	35	1	55	395
1906	69	7	20	1	32	10	37	176
1907	275	47	38	116	44	240	1	761
1908	61	52	77	101	41	418	6	756
1909	420	41	65	117	39	387	30	1,099
1910	77	49	83	187	55	375	115	941
1911	84	76	60	84	47	365	77	793
1912	30	30	69	100	35	379	1,635	2,278

### Samples of Sewage.

**SEWAGE WORKS.**—Total samples, 30. Under this heading are included samples taken at sewer outfalls. Only one special sampling was undertaken during the year, viz., Stepps Road Sewage Purification Works, where an average sampling of crude sewage, tank effluent, Dortmund tank effluent and filter effluent, extending over a period of 9 hours was made. These samples were all submitted to a complete analysis, and from the results obtained the percentage purification was calculated, which showed a reduction of 27 per cent. on oxidisable organic matter, and 34 per cent. on albuminoid nitrogen. The filter effluent was also specially examined for suspended solids and rate of absorption of atmospheric oxygen. The results obtained were unsatisfactory, the suspended solids amounting to 13·0 parts per 100,000; and the amount of oxygen absorbed in 5 days, 9·99 parts per 100,000.

A filter effluent, according to the standard laid down by the Royal Commission on Sewage Disposal in their final report, shall not contain (1) more than 3·0 parts per 100,000 of suspended solids; and (2) shall not absorb more than 2·0 parts per 100,000 by weight of atmospheric oxygen, in 5 days.

The ordinary samples analysed were as follows:—

Westthorn, - 6 samples.	Chapelhall, - - 2 samples.
Bishopbriggs, - 3 „	Dalmarnock, - 1 „
East Kilbride, - 1 „	Shieldhall, - - 1 „

### Samples of Trade Effluent.

**TRADE EFFLUENT.**—30 samples from the following public works:—

*Ammonia Works.*—3 samples from Mossend Iron and Steel Works specially examined for phenoloid substances and oxidisable organic matter.

*Fish Manure Works.*—5 samples from Davidson's Fish Manure Works, Rutherglen. These samples were submitted to a complete analysis, special attention being also paid to their physical characters.

*Coal Washers.*—17 samples—

Barblues, - - 1 sample.	Stane, - - 9 samples.
Fortrigg, - - 1 „	Kepplehill, - - 3 „
Gateside, - - 2 „	Wilsontown, - 1 „

These samples were all examined for total and volatile suspended solids.

*Drainage from Mines.*—5 samples. Samples of pit water as raised from the mine were examined for total and volatile suspended solids:—

Kepplehill, - 1 sample.	Dalquhandy, - 1 sample.
Stane, - - 1 „	Wilsontown, - 1 „

Tarbrax Oil Works, 1 sample.

The sample from Tarbrax was further examined for iron in solution and in suspension, and that from Wilsontown for phenoloid substances.

### Samples of Streams.

Total samples, 69; of which 20 were examined in connection with discharges from sewage works, and 49 in connection with trade pollutions. Affected by discharge of sewage—

Bishopbriggs Burn, 4 samples.	R. Clyde, Westthorn, 4 samples.
Garnkirk            "    3    "	"    Shieldhall, 2    "
North                "    4    "	"    Dalmarnock, 3    "

The following table shows the results of chemical analysis of samples of Clyde water taken at Westthorn, Dalmarnock, and Shieldhall, together with the effluents from the respective sewage works:—

TABLE SHOWING EFFECT UPON RIVER CLYDE OF DISCHARGE OF SEWAGE FROM WESTTHORN, DALMARNOCK, AND SHIELDHALL; ALSO THE RESPECTIVE EFFLUENTS.

RESULTS STATED AS PARTS PER 100,000.

DESCRIPTION OF SAMPLE.	Chlorides as Cl.	Nitrates as Nitrogen.	Ammonia as Nitrogen.		Oxygen Absorbed.	Solids.	
			Free.	Albu- minoid.		Total.	Sus- pended.
River Clyde above Westthorn, -	1·2	·057	·058	·008	·31	22·0	0·
Do. below do., -	1·3	·047	·121	·011	·37	25·0	0·
Do. above Dalmarnock, -	1·2	·069	·054	·015	·38	—	—
Mixture of Clyde and Effluent, Dalmarnock, - - - -	4·2	·080	·585	·132	1·52	—	—
River Clyde at Arthur Street, -	1·6	·060	·108	·026	·47	—	—
Do. above Shieldhall, - -	18·4	·187	·073	·009	1·3	36·4	2·2
Do. below Shieldhall, - -	19·4	·180	·144	·032	1·39	40·4	2·9
Effluent from Westthorn, - -	4·6	—	2·456	·200	3·27	51·6	16·4
Do. Dalmarnock, - -	18·2	—	1·264	·096	6·33	72·8	3·2
Do. Shieldhall, - -	5·2	—	1·624	·080	6·13	68·2	7·6

These results show that the effect of the discharge from Westthorn upon the river is practically nil, even although the effluent itself might be considered a fairly strong effluent from domestic sewage.

In connection with the pollution of the North Burn by the burgh of Airdrie, the statement was made that the North Burn was polluted by sewage from county areas before reaching the burgh boundary. The following 4 samples were therefore analysed, and show that this statement is without foundation :—

## RESULTS STATED AS PARTS PER 100,000.

DESCRIPTION OF SAMPLE.	Chlorides as Cl.	Nitrates as Nitrogen.	Ammonia as Nitrogen.		Oxygen Absorbed.	Solids.	
			Free	Albumi- noid.		Total.	Sus- pended.
North Burn, above Whiterigg,	1.0	.035	.000	.015	.92	20.0	—
Do., below Whiterigg,	1.3	.043	.037	.030	1.40	44.4	—
North Burn, at Rawyards,	1.3	.049	.003	.011	.70	34.0	—
Do., below Airdrie Burgh,	9.8	Nil	1.649	.182	1.91	44.0	7.4

The sample taken at Rawyards is at a point immediately before entering the burgh of Airdrie. The results of chemical analysis of this sample indicate that any organic matter received from houses at Whiterigg is completely oxidised, and that the stream enters the burgh in a clean condition.

Affected by discharge of trade effluent :—

Stream.	Samples.	Pollution.
Blind Burn, -	20	Stane and Kepplehill Collieries.
South Calder, -	8	Do. do.
Currie Burn, -	3	Baton Collieries.
Ladyland Burn, -	3	Hartwoodhill and Ladyland Collieries.
Gateside Burn, -	1	Gateside Colliery.
North Calder, -	1	Moffat Paper Mills.
Shirrel Burn, -	3	Mossend Iron and Steel Works.
Auchter Water, -	1	Coltness Iron Works.
Mouse, -	2	Wilsontown Colliery.
River Clyde, -	1	Fish Manure Works.
Greenfield Burn, -	3	Tarbrax Oil Works.
Dippool Water, -	1	Do. do.

A special analysis of water from South Calder and Tillon Burn to determine their suitability for trade purposes was made.

**Water Supplies.**

The number of samples of water analysed amounted to 135, of which 100 were from public water supplies and 35 from private water supplies. The details of analysis of samples from private sources are to be found in



the district reports, which show that 14 were from the Upper Ward, 20 from the Middle Ward, and 1 from the Lower Ward. The samples (100) from public water supplies include 52 samples from Glasford Tank, being average weekly samples prepared from daily samples.

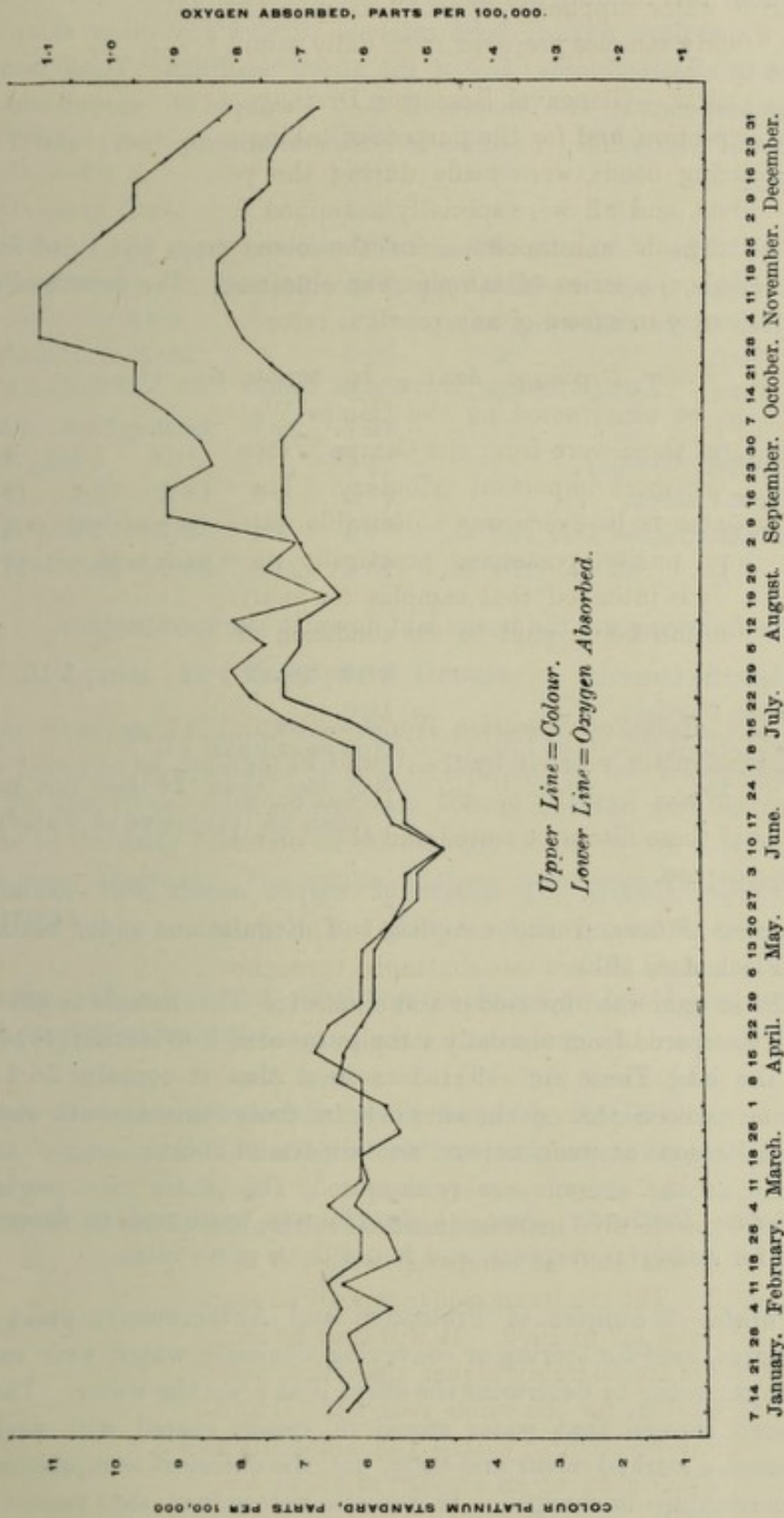
*Water-works.*—Glengavel Reservoir Drainage Area, 26 samples. Two visits of inspection, and for the purpose of taking samples from the various streams during floods, were made during the year. In all 26 samples were obtained, and all were specially examined for colour, alkalinity and oxidisable organic substances. On the occasion of the second visit (3rd September) a series of samples was obtained in which the degree of colour is greatly in excess of any previous record.

*Camps Water Drainage Area.*—In connection with the proposed reservoir to be constructed on the Camps Water, 7 samples have been analysed, 5 of these were from the Camps Water and 2 from the Grains Gill Burn, the most important tributary. The results of analysis show that this water is in every way a desirable water for domestic purposes being of high purity, possessing practically no colour and of moderate hardness. It is intended that samples for analyses be frequently taken, special attention being paid to the condition of this water during flood weather.

*Burgh of Hamilton Filtration Works.*—Townhill, 15 samples. In June the filtration plant erected by the Jewell Filter Company for the Burgh of Hamilton was formally opened. It was considered desirable that the efficiency of these filters be tested and the above 15 samples were analysed for that purpose.

*Glasford Filters, Daily sampling.*—The daily sampling of filtered water at Glasford Filters was continued throughout the year, 366 samples having been examined for colour and alkalinity. Weekly average samples were also prepared from the daily samples for complete analysis, 52 having been analysed. These are referred to in a previous part of this report. Charts have been plotted showing (1) the daily variation in colour, and (2) the relation between colour and oxidisable organic substances as estimated in the average weekly samples. The results show that there has been a considerable increase in colour during the year. The maximum colour noted was 12·0 as compared with 8·6 in 1911 10·6 in 1910, and 14·8 in 1909. The minimum colour was 4·0 as compared with 2·9 in 1911, 2·8 in 1910, and 3·2 in 1909. It will thus be seen that the lowest colour of the water is considerably higher than that noted for the past 3 years. The average colour for the whole year was 7·0 an increase of over 30 per cent. from the preceeding year.—The alkalinity calculated as  $\text{CaCO}_3$  is somewhat higher showing an average of 4·2 as compared with 4·0 in 1911, and 3·5 in 1910.

Diagram showing variation in amount of (1) colour and (2) oxidisable substances as estimated in weekly averages of daily samples taken at Glasford Clean-water Tank.



### Special Samples.

Under this heading are included the small daily samples from Glasford Tank which have already been referred to, and any other sample which cannot be classified under any of the above headings. These samples, 13 in number, consist of 5 samples of tar; 1 sample of "carpet caddis"; 4 samples of whinstone; 1 sample of refuse destructor dust; and 2 samples of paint.

*Tar.*—The 5 samples of tar were received from the Road Surveyor, 3rd Division, together with a copy of specification. The details of analysis are given in the following table:—

#### THE RESULTS STATED AS PARTS PER CENT.

	Tar H.	Tar S.	Tar M.	Tar B.	Tar X.
Specific Gravity, - - -	1·19	1·12	1·18	1·10	1·21
Free Carbon, - - -	17·5	4·8	13·8	2·6	19·6
Fractionation Test 170° C., -	1·1	1·4	0·7	2·9	1·7
Do. do. 270° C., -	25·6	21·5	33·6	38·5	27·3

The following are the limits laid down in the specification.

Specific Gravity, - - -	1·19; max., 1·22; min., 1·16.
Free Carbon, - - -	16·0.
Fractionation Test 170° C., -	Not more than 1·0.
Do. do. 270° C., -	Not less than 16 and not more than 26 (exclusive of water).

*"Carpet Caddis."*—1 sample of carpet caddis was examined for cleanliness as defined under Article 1 of Regulations under Section 1 (1) Rag Flock Act, 1911.

The sample was reported on as follows:—This sample is not conform to the standard of cleanliness, for the purpose of Sub-section (1) of Section 1 of the Rag Flock Act, 1911, in respect that it contains 56·8 parts of chlorine per 100,000 parts of flock; whereas this amount should not exceed 30 parts of chlorine per 100,000 parts of flock.

*Refuse Destructor Dust.*—1 sample was examined to determine its value for manurial purposes, and found to be of no value.

*Paints.*—2 samples of Protective and Anti-corrosive paint for iron structures, used for storing or conveying domestic water, were examined, the object being to determine the effect if any, on the water. The results obtained showed that water stored in vessels coated with such paint, possessed a marked odour and taste, but the chemical composition of the water remained unchanged. It was also determined that vessels painted in this manner would continue to impart odour and taste to the water for not less than 30 days.

*Whinstone.*—The following samples of whinstone for road-making purposes were analysed. The details are stated as parts per cent. :—

	No. 1. Hillend West.	No. 2. Hillend West.	No. 3. Hillend West.	No. 4. Auchrobert.
Silica, - - -	No. 1. 71.09	No. 2. 72.48	No. 3. 70.42	No. 4. 66.36
Alumina, - - -	16.98	16.88	17.99	21.56
Oxide of Iron, - - -	1.25	1.48	1.23	3.60
Lime, - - -	2.45	2.08	2.55	2.36
Magnesia, - - -	1.68	1.22	1.47	1.84
Carbonic Acid, - - -	1.70	2.97	1.02	0.20
Sulphuric Acid, - - -	0.09	0.06	0.07	0.07
Alkalies, - - -	3.05	1.69	3.48	2.06
Loss on Ignition, - - -	1.32	1.72	1.40	1.73
Water, - - -	0.39	0.42	0.38	0.22
Specific Gravity, - - -	2.66	2.64	2.63	2.62
Water Absorbed, - - -	1.08	1.22	0.89	0.12

### Food and Drugs.

**TOTAL SAMPLES, 1,635.**—Milk samples, informal, 15 samples; of which 11 were found to be genuine, and 4 to be deficient in fat to the extent of 50, 23, 20, and 10 per cent. respectively. In connection with an investigation as to the daily variation in the amount of fat in cow's milk, 1,243 samples were analysed. The results obtained have been the subject of a special report.

*Whisky.*—43 samples, of which 9 were found to be of less strength than 25 degrees under proof.

*Flour.*—In connection with the investigation as to the changes in chemical composition of flour due to bleaching by nitrogen peroxide 266 analyses were made, and 65 bleaching experiments carried out; for details of which see special report on bleached flour.

## Food and Drugs.

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The samples procured throughout the County and in the Burghs of Wishaw and Biggar amounted to 446, which is in the ratio of 1·35\* per 1,000 of the population. 85 of the samples were obtained by means of agents. The procuring of samples clandestinely by means of agents has been found to be necessary for the proper administration of the Acts, especially for the detection of adulteration and fraudulent practices in connection with the sale of milk and butter. Informal samples are first purchased, and, from any suspected sources thus discovered, statutory samples are procured. For administrative purposes the samples have been classified thus:—

Samples procured formally,	-	-	267
" " informally,	-	-	171
" received privately,	-	-	8
			446
			446

The samples analysed amounted to 430. The remaining 16 samples—12 of flour, and 4 of butter—were not analysed, the former being procured for experimental work in connection with the bleached flour inquiry, and the latter supplied in margarine wrappers to agents as butter.

Table A shows the work classified according to administrative area and locality. The number of visits made and samples procured in each District of the County, and in the Burghs of Wishaw and Biggar, were as follows:—

In the **Upper Ward**, 113 visits were made, and 57 samples procured. 10 were certified to be not genuine.

In the **Middle Ward**, 583 visits were made, and 246 samples procured. 27 were certified to be not genuine.

In the **Lower Ward**, 120 visits were made, and 52 samples procured. 4 were certified to be not genuine.

In the Burgh of Wishaw, 74 visits were made, and 51 samples procured. 11 were certified to be not genuine.

In the Burgh of Biggar, 12 visits were made, and 9 samples procured. 3 were certified to be not genuine.

Samples of flour certified to be not genuine in respect of the excess of nitrites they contained, indicating that they had been bleached by peroxide of nitrogen, are included in the figures for not genuine samples.

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\* Calculated on the population prior to the loss sustained by annexation to Glasgow in November, 1912.

TABLE A.—ALLOCATION OF WORK DONE DURING 1912, UNDER THE FOOD AND DRUGS ACTS, ACCORDING TO ADMINISTRATIVE AREA AND LOCALITY.

	Visits to Localities.	Visits to Premises.	Samples Procured.	Samples found Non-genuine.
UPPER WARD.				
Abington and Crawfordjohn, ... ..	—	—	—	—
Blackwood and Kirkmuirhill, ... ..	—	—	—	—
Carluke and Law, ... ..	6	37	17	3
Carnwath and Carstairs, ... ..	3	10	8	3
Dolphinton, Elsrickle, Dunsyre, and Newbigging, Crawford, ... ..	—	—	—	—
Douglas and Ponfeigh, ... ..	3	8	9	4
Crossford, Braidwood, and Hazelbank, ... ..	4	13	6	—
Forth, Wilsontown, Haywood, Braehead, and Tarbrax, Kirkfieldbank and New Lanark, Lanark Races, ... ..	2	15	7	—
Lesmahagow and Coalburn, ... ..	4	6	2	—
Lesmahagow and Coalburn, ... ..	5	24	7	—
Leadhills, ... ..	—	—	—	—
Lamington and Wiston, ... ..	—	—	—	—
Thankerton, Lochlyoch, and Roberton, ... ..	—	—	—	—
Symington and Biggar Parish, ... ..	—	—	1	—
	<u>27</u>	<u>113</u>	<u>57</u>	<u>10</u>
MIDDLE WARD.				
Baillieston, Easternhouse, Broomhouse, and Barrachnie, Bargeddie and Kirkwood, ... ..	3	23	7	—
Bellshill and Mossend, ... ..	—	—	—	—
Bellshill and Mossend, ... ..	12	72	21	3
Blantyre, ... ..	16	90	43	13
Bothwell, ... ..	4	19	4	—
Busby, ... ..	1	1	—	—
Cadzow, Eddlewood, Quarter Road, & Limekilnburn, Calderbank and Chapelhall, ... ..	3	12	5	3
Calderbank and Chapelhall, ... ..	3	24	6	—
Cambuslang, Flemington, Halfway, & Gilbertfield, Carfin and Newarthill, ... ..	17	65	31	2
Carfin and Newarthill, ... ..	1	2	2	—
Carmyle, ... ..	2	9	6	—
Carnbroe, Glenmavis, and Hollandhirst, ... ..	1	9	5	—
Cleland and Omoa, ... ..	1	12	6	—
East Kilbride, Maxwelltown, Nerston, Auldhouse, and Jackton, ... ..	3	15	10	—
Ferniegair, Larkhall, Dalserf, and Netherburn, ... ..	10	41	17	1
Glasford and Chapelton, ... ..	1	1	2	—
Glenboig, ... ..	—	—	—	—
Glengowan, Caldercruix, Plains, and Gartness, ... ..	2	8	3	—
Greengairs and Wattstown, ... ..	1	3	3	—
Hallside, Westburn, and Newton, ... ..	2	8	1	—
Holytown, New Stevenston, and Clydesdale, ... ..	4	25	14	—
Longriggend, ... ..	1	2	2	—
Mount Vernon, ... ..	—	—	—	—
Newmains, Morningside, and Netherton, ... ..	4	26	14	2
Palace Row, North Motherwell, and Motherwell Hospital, ... ..	2	7	6	—
Salsburgh, ... ..	1	6	4	—

	Visits to Localities.	Visits to Premises.	Samples Procured.	Samples found Non- genuine
MIDDLE WARD.				
Shotts, Harthill, and West Benhar, ... ..	4	27	12	1
Stonehouse, Swinhill, and Shawsburn, ... ..	1	11	—	—
Strathaven, ... ..	4	10	3	—
Tannochside, Thorniewood, Aitkenhead, Bothwell Park, and Cockhill, ... ..	3	9	5	—
Uddingston, ... ..	5	28	5	—
Udston, Auchentibber, and Hamilton, ... ..	2	7	2	—
Waterloo and Overtown, ... ..	1	11	7	2
	<u>115</u>	<u>583</u>	<u>246</u>	<u>27</u>
LOWER WARD.				
Bishopbriggs, Auchinairn, Lambhill, and Mavis Valley, ... ..	2	12	2	—
Carmunnock, ... ..	1	5	1	—
Chryston and Muirhead, ... ..	1	9	2	—
Farne, Eastfield, &c., ... ..	2	8	6	—
Lenzie, ... ..	2	6	3	—
Shettleston, ... ..	6	36	19	4
Stepps, Millerston, Hogganfield, and Riddrie, ... ..	1	4	1	—
Tollcross, ... ..	7	40	18	—
	<u>22</u>	<u>120</u>	<u>52</u>	<u>4</u>
BURGH OF WISHAW, ... ..	9	74	51	11
BURGH OF BIGGAR, ... ..	3	12	9	3
CITY OF GLASGOW, ... ..	7	8	31	2
TOTAL, ... ..	<u>183</u>	<u>910</u>	<u>446</u>	<u>57</u>

The nature of the articles purchased and received during the year, the number of each article analysed or examined, and the number found not genuine are recorded in Table B. It will be seen that sweet milk was the article most frequently purchased; flour came next in frequency, alcoholic liquors third, and butter fourth. Of the 354 samples analysed, 33 or 9·3 per cent. were found not genuine. 76 flour samples, of which 24 were certified not genuine, are excluded from these figures.

TABLE B.—SHOWING THE NATURE AND NUMBER OF SAMPLES PURCHASED AND RECEIVED, THE NUMBER ANALYSED, AND THE NUMBER FOUND NON-GENUINE.

ARTICLE.	TOTAL SAMPLES.	
	Purchased, &c.	Analysed.
Milk, Sweet, - - - - -	226	226
„ Skimmed, &c., - - - - -	2	2
Cream, - - - - -	9	9
Condensed Milk, - - - - -	2	2
Butter, - - - - -	29	26
Margarine, - - - - -	2	1
Lard, - - - - -	2	2
Sausages, - - - - -	9	9
Barley, - - - - -	2	2
Potted Hough, - - - - -	1	1
Cocoa, - - - - -	1	1
Coffee, - - - - -	1	1
Golden Syrup, - - - - -	2	2
Marmalade, - - - - -	1	1
Butter Colour, - - - - -	1	1
Chocolate, - - - - -	1	1
Whisky, - - - - -	64	64
Brandy, - - - - -	3	3
Total, - - - - -	<u>358</u>	<u>354</u>
Flour, - - - - -	88	76
Grand Total, - - - - -	<u>446</u>	<u>430</u>

The succeeding paragraphs give additional information with regard to the samples analysed, and the results of legal proceedings taken in connection with some of the samples certified to be not genuine. All the samples procured, formal and informal, as well as those received for examination, are included in the figures given.

MILK.—Regarding the samples of sweet milk, Table B shows that 226 were analysed, and 13 certified to be not genuine.

Classifying the samples according to the amount of milk fat, we find—

12 had less than 3 per cent.  
 4 exactly 3 „  
 210 above 3 „

Classifying the samples according to the amount of milk solids other than fat we find—

28 had less than 8·5 per cent.  
 32 exactly 8·5 „  
 166 above 8·5 „



Fifteen of the samples were procured informally by means of agents, and three of these were certified to be deficient in milk fat. These non-genuine cases were followed up, and samples procured with the formalities of the Act.

In connection with non-genuine samples of milk procured from retailers who buy in their milk supply, an attempt is always made to find out who is really responsible for any deficiency reported by the Public Analyst, by the inspector taking a sample in course of delivery from the wholesale dealer or farmer. This procedure has been found valuable in putting the responsibility on the right party, and has frequently been the means of preventing legal proceedings against dairy-keepers who may be selling the milk as they get it. These retailers rarely can get a warranty from the wholesale dealer, and, lacking this protection, it would be difficult for them to overcome the presumption that they had sold milk that had been tampered with.

In illustration of the difficulties sometimes experienced in procuring samples of the milk as supplied to the public, the following case may be cited. While procuring formal samples of milk by means of an agent, the inspector instructed the agent to go to the shop of a dairy-keeper, who keeps cows himself, and procure a sample of sweet milk. On entering the shop after the purchase was completed, the inspector was informed by the agent that the sample was supplied from the back premises. There was a can, with a measure attached to it, standing on a table behind the counter in the front shop. The inspector asked the dairyman what it contained, and was informed that it was skimmed milk. A sample of skimmed milk from the can was then requested, but the dairyman refused to supply the inspector. The Public Analyst certified the sample of sweet milk procured by the agent from the back premises to contain 6.5 per cent. of milk fat, which is unusually high. The presumption here, doubtless, is that the dairyman had been warned that the inspector was in the locality, and that the contents of the can aforementioned as containing skimmed milk was in reality being sold to the public as sweet milk.

It is satisfactory to report that none of the samples contained preservatives or colouring matter.

Every sample of milk formally taken and certified to be not genuine was fully reported to the County Clerk, but in three of these proceedings were not taken owing to the smallness of deficiency, &c. Legal proceedings were instituted in 5 cases, one of them being a third offence. Convictions were obtained in all the cases, and the total fines imposed amounted to £40 2s., with the alternative of imprisonment in each case. The fines were all paid.

SKIMMED MILK.—Two samples of skimmed milk were obtained—one from a farmer, in course of delivery to a retailer, and the other from a retail cart. Both samples were certified to be genuine, the analysis being as follows:—

	Milk Fat.	Milk Solids other than Fat.
	Per Cent.	Per Cent.
(1) From farmer, ... ..	1·03	8·95
(2) „ retailer's cart, ... ..	3·66	9·15

No. 1 is hand-skimmed milk, while No. 2 is sweet milk of good quality. With regard to the latter, the inspector asked the milkman what one of the cans on the back of his cart contained, and evidently he had not been sure of the genuineness of the milk and sold it as skimmed milk.

The Board of Agriculture have issued new regulations to be cited “The Sale of Milk Regulations, 1912,” which amend the standard for skimmed or separated milk in “The Sale of Milk Regulations, 1901.” The new standard is as follows:—

#### SKIMMED OR SEPARATED MILK.

“Where a sample of skimmed or separated milk (not being condensed milk) contains less than 8·7 per cent. of milk solids other than fat, it shall be presumed, for the purposes of the Sale of Food and Drugs Acts, 1875 to 1907, until the contrary is proved, that the milk is not genuine, by reason of either the addition thereto of water or the abstraction therefrom of milk solids other than milk fat.”

In a circular issued along with the Regulations, the Board state as follows:—

“Representations have been received from time to time from Local Authorities of districts where there is a trade in skimmed and separated milk, that considerable practicable difficulties arise in instituting proceedings in cases in which water has been added to skimmed milk; but, owing to the fact that the milk has been imperfectly skimmed, the total solids have not fallen below 9 per cent. Thus a sample containing 1·5 per cent. of fat and 7·5 per cent. of milk solids other than milk fat would probably contain over 12 per cent. of added water, but the total solids are up to the limit of 9 per cent. The present Regulations are intended to obviate these difficulties and to facilitate the prevention of the adulteration of skimmed milk with water.

“The fixing of the percentage at 8·7 may result in some hardship in cases where the milk is imperfectly skimmed. Thus, if milk containing 3 per cent. of milk fat and 8·5 per cent. of milk solids other than milk fat is imperfectly skimmed, so that 1·5 per cent. of milk fat remains, the proportion of milk solids other than milk fat will rise only to 8·63 per cent., and the Board would suggest that this point should be taken into account by your Local Authority in considering the question whether they should institute proceedings on the pre-

sumption of adulteration based on the Regulations in cases where the deficiency of milk solids other than milk fat is slight, and the skimmed milk contains a considerable proportion of milk fat."

The new Regulations are only applicable to England and Wales, as, since the 1901 Regulations came into force, a separate Board of Agriculture for Scotland was formed. As there seemed no good reason why the amended standard for skimmed milk should not apply to Scotland, the County Medical Officer communicated with the Scottish Board on the matter, and received the following reply:—

"Adverting to your letter transmitting a certificate of analysis of a sample of skimmed milk, I am directed by the Board of Agriculture for Scotland to state that the analysis shows that the milk contained not less than 9 per cent. of milk solids, and under the Sale of Milk Regulations, 1901, it cannot, therefore, be certified as not genuine. The Sale of Milk Regulations, 1912, as you observe, apply only to England and Wales.

"I am to add that the question of amending the Sale of Milk Regulations, 1901, in respect of their application to Scotland, has been deferred pending the introduction in Parliament of the Milk and Dairies Bill, or other similar Bill affecting Scotland."

**MILK STANDARD.**—On the 25th September the Public Health Committee appointed a special sub-committee to consider the question of milk prosecutions under the Sale of Food and Drugs Acts, and on the instructions of the sub-committee inquiries were instituted by the Medical Officer to ascertain by sampling and analysis the quality of the milk produced at dairy farms, under ordinary conditions of production and distribution. Arrangements were therefore made, towards the close of the year, for sampling to be carried out at five different dairy farms in the Middle Ward District. Samples of the morning and evening milk of each cow were taken and analysed, in the first instance for at least three consecutive days at a time. At one farm sampling was undertaken for seven consecutive days. In this way some information as to the daily variations in quality in the milk from individual cows, and in the average quality of the milk of the whole herd was obtained. The work has since been continued at intervals, as opportunity afforded, during the current year, with a view to also obtaining some information as to seasonal variation in the quality of milk. The analyses were carried out in the Chemical Laboratory, and included the estimation of the total solids, fat, and non-fatty solids.

These inquiries entailed a large amount of work, the number of samples taken during the months of November, December, and January amounting to over 1,500. On 22nd February of the current year, a first report, giving the results of the inquiries and details of analysis of the samples taken up to the end of January, and other

general information, was issued to the sub-committee. Copies were also forwarded to the Boards of Agriculture and Local Government Boards for Scotland and England, and to other authorities interested in the subject. The work done since then will form the subject of a second report. The conclusions meantime arrived at are as follows:—

*First.*—In an ordinary dairy herd individual cows do give milk containing less than 3 per cent. of fat.

*Second.*—The frequency with which this occurs depends to some extent on the milking intervals and the efficiency of the milking.

*Third.*—The number of cows consistently giving milk containing less than 3 per cent. of fat is very small.

*Fourth.*—In the usual method of distribution there is a possibility of a quantity of milk being sent off from the farm containing less than 3 per cent. of fat.

*Fifth.*—This possibility would be removed if the milk of the whole herd were mixed together. The average quality of the milk of each herd was always above the standard of 3 per cent. of fat.

**BUTTER.**—Table B shows that 29 samples were procured, of which 11 were informal. Twenty-six samples were analysed. Three of the formal and three of the informal were certified to be not genuine. The informal samples were mostly procured by means of agents, with a view to detecting the prevalence of the practice of supplying margarine for butter. This practice is carried on in some districts by vendors with carts, who style themselves: “Irish Provision Merchants,” “Egg and Butter Merchants,” &c. These have been kept under careful supervision, but the samples taken during the year were all certified genuine. Repeated purchases by an agent have often to be made from a suspected vendor before a formal sample is procured. One of the formal non-genuine samples was procured just before closing-time on Saturday. The remaining two were procured on different dates, from a shopkeeper against whom complaints had been received.

Legal proceedings were instituted in all three cases, one of them being a second offence. Convictions were obtained in all three cases, and fines amounting to £21 imposed, with the alternative of imprisonment. The fines were paid.

**MARGARINE.**—Careful supervision of shops where this article is on sale continues to be made, to see that the provisions of the Margarine Acts were being complied with. During the year 2 samples were purchased, and 1 was analysed by the Public Analyst.

Eleven contraventions were detected. Four of these were minor offences in respect of improper labelling or temporary want of statutory wrappers, and it was deemed sufficient to verbally caution the offenders; 3 were in connection with informal samples supplied in plain wrappers as butter to an agent; 3 were dual offences reported on under "Butter," in which convictions were obtained for selling margarine as butter from an unlabelled parcel and in a plain wrapper. The remaining offence consisted of the sale of margarine from an unlabelled box on a provision cart. At first the vendor refused to supply the inspector, as he had no margarine wrappers. After a search, however, he found a dirty wrapper and supplied the sample. Legal proceedings were instituted in this case, and a conviction followed, the fine imposed being £3 or 5 days' imprisonment. The fine was paid.

CREAM.—Nine samples of cream were procured during the year—2 being ordinary cream procured from milkmen, and the remaining 7 being preserved thick cream sold in jars by grocers. The former were certified to contain 11·25 and 13·73 per cent. of milk fat respectively, and the latter ranged from 45 to 55 per cent. of milk fat. Four of the latter contained no preservatives, while the remaining 3 were certified to contain ·05, ·28, and ·30 per cent. of boracic acid respectively. The jars containing the cream to which boracic acid had been added bore the following inscription:—"Preserved cream, containing boric acid not exceeding  $\frac{1}{2}$  per cent."

SAUSAGES, &c.—Nine samples of sausage and 1 of potted hough were procured, and analysed for the presence of preservatives. Three samples of sausage were found to be free from preservatives, while six contained boracic acid ranging from 4·9 to 26·8 grains per lb. of sausage, and the potted hough 9·2 grains per lb. In none of the samples was the presence of boracic acid declared at the time of purchase. The manufacturers of two of the samples of sausage containing 26·8 and 17·8 grains of boracic acid per lb. were large well-known firms. They were communicated with as to what they considered the minimum amount of boracic acid required for trade purposes. The following extracts are taken from the replies received, viz. :—

(1) From the manufacturer of the sausage containing 26·8 grains of boracic acid per lb. :—"We have always thought that 20 grains per lb. was a safe quantity to use, and were led to this opinion by the fact that in the appeal case before the Recorder at Burnley, a few years ago, 18 and 19 grains per lb. were considered allowable. We are

surprised and greatly concerned that so much boracic acid was found in a sausage said to be supplied by us. Now that our attention has been drawn to this matter, you may depend upon it that such care will be taken in the process of manufacture that certainly not more than 20 grains per lb., and probably much less, will be found again in any of our productions."

(2) From the manufacturer of the sausage containing 17·8 grains of boracic acid per lb.:—"Some two years ago I went rather fully into this matter, and, as you are aware, there is no definite law regarding this at the present time; the result of the former Governmental inquiry being only a recommendation. In the case of butter it was 35 grains to the pound, and we considered our safety lay in using anything under that amount—in our case, about one-half. At a general meeting of the trade in London, about two years ago, I was appointed one of a small deputation who were instructed to interview the President of the Local Government Board on the matter, but Mr. John Burns intimated that it was not necessary, seeing he was going into the subject thoroughly. Since then the matter has been allowed to lie in abeyance.

"Sausages being now an article of daily consumpt all over the country, and requiring to go long distances, it is absolutely necessary for preservatives of some kind to be allowed in their manufacture. An official order as to the amount is expected before long, seeing the Department has now issued instructions regarding other foods.

"About three years ago there was a local prosecution of a large firm in the Midlands, when the amount was 18 to 19 grains to the pound, but the prosecution failed."

Dr. MacFadden, of the Local Government Board, in a report on preservatives in meat foods, states, with regard to preservatives in sausages, that: "Quantities of boric acid are not seldom reported by public analysts in some of these goods, which cannot be otherwise than prejudicial in themselves, besides being wholly unnecessary. If boron preparations are used for this purpose, a limit of  $\frac{1}{4}$  per cent. (17·5 grains per lb.), of boric acid would be probably ample to meet legitimate trade requirements, and even in this case it appears desirable to consider whether notification of the presence of preservatives should not be given to the purchaser."

WHISKY.—Sixty-four samples were procured, 17 formal and 47 informal. 14 of the formal, and 38 of the informal were procured by means of an agent. On analysis, 5 of the formal samples, and 9 of the informal, were certified to be deficient in proof spirit. Legal proceedings were instituted in 4 of the formal cases, but were not

suggested in the remaining case, owing to the smallness of the deficiency. Convictions were obtained in all 4 cases, one being a second offence, and fines amounting to £16 imposed, with the alternative of imprisonment.

BRANDY.—Three informal samples were procured, and were certified by the Public Analyst to be genuine.

TABLE C.—RECORD OF WORK DONE SINCE 1900.

Year.	SAMPLES.	
	Total Analysed.	Percentage Adulterated.
1900	265	12·5
1901	257	10·5
1902	194	11·3
1903	369	10·00
1904	498	12·04
1905	547	13·52
1906	474	13·29
1907	372	11·82
1908	487	14·98
1909	521	9·59
1910	539	10·76
1911	716*	13·9†
1912	446*	9·3†

From the year 1904 the above figures include Test Samples.

\* This includes samples of flour.

† This figure does not take into consideration the samples of flour certified to be bleached.

**Bleached Flour.**—In the Annual Report for the three preceding years reference was made to the practice of bleaching flour by peroxide of nitrogen, and especially during 1911 and 1912 the matter was the subject of extensive investigation, culminating in a prosecution to test the legality of the practice. This case was first heard at Hamilton on 5th December, 1911, and was not finally disposed of until 31st July, 1912, when the Sheriff issued his judgment, finding the complaint not proved. He held that while the flour had undoubtedly been bleached it was still of the nature, substance, and quality of flour. A special report of the whole proceedings has been prepared, and is issued as a supplement to this report. A joint-paper on "The effects of Nitrogen Peroxide on the constituents of flour, in relation to the commercial practice of bleaching Flour with that reagent," by Professor Moore, one of the principal witnesses for the County Council, and the County Medical Officer, was also contributed to the *Journal of Hygiene*, Vol. XIII., No. 4, January 16th, 1914.

## Fertilisers and Feeding Stuffs.

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The samples procured amounted to 38, of which 13 were informal. In procuring these, 15 visits were made.

The number and nature of the samples procured and the samples found deficient are shown in Table D. It will be seen that 34 of the samples were fertilisers, 9 of which were informal, and 4 were feeding stuffs, all of them informal. Most of the informal samples were received privately from farmers.

During the year, 22 intimations were sent to sellers of fertilisers and feeding stuffs, giving three days' notice of sampling, with particulars as to place, day, and hour, as required by the regulations laid down by the Board of Agriculture, so that the seller or his representative might be present if desired. Only in one case was the representative of the seller present at the sampling. The majority of the others replied that they left the sampling in the hands of the official sampler. The alternative method of sampling as laid down in the aforesaid regulations, *i.e.*, by means of the spear, was adopted in every case where the samples were taken officially, and no objection was taken to its use.

Twenty-five formal samples were taken at the request of two farmers' associations in Avondale Parish and Lesmahagow Parish. The 13 informal samples were procured from farmers, tomato-growers, &c. The majority of the samples were above the warranty given on the invoices, but 4 of the samples, *i.e.*, 3 fertilisers and 1 feeding stuff, were found on analysis slightly deficient in some of the constituents, *viz.*, a formal sample of pure dissolved bones was 3·31 per cent. deficient in insoluble phosphates; but, as the soluble phosphates were 3·38 per cent. in excess of the warranty, the fertiliser was of better value than warranted. A formal sample of sulphate of ammonia was ·38 per cent. deficient in ammonia. An informal sample of manure was ·04 per cent. deficient in soluble phosphates. An informal sample of Eclipse Feeding Cake was ·60 per cent. deficient in oil, and ·87 per cent. deficient in albuminoids. The deficiencies in the formal samples were too low for the institution of legal proceedings. Copies of the analyst's certificates were sent to the buyers, and they would have the option of claiming a rebate on the price.

Two samples marked "No. 1" and "No. 2" fertilisers were received privately from a tomato-grower. No information was given or could be elicited regarding the samples. The analyses showed that they contained very little fertilising constituents, and the Agricultural



Analyst stated in the certificates: "The only plant food in these samples is the nitrogen, but the amount is not much greater than is usually found in road sweepings. The lime exists chiefly as carbonate, and would, of course, be of some agricultural value."

TABLE D.—SHOWING THE NUMBER OF SAMPLES OBTAINED AND THE NUMBER FOUND DEFICIENT.

FERTILISERS.			FEEDING STUFFS.		
Name.	TOTAL SAMPLES.		Name.	TOTAL SAMPLES.	
	Obtained.	Deficient		Obtained.	Deficient
Basic Slag, - - -	3	...	Bean Meal, - - -	1	...
Bone Meal, - - -	2	...	Eclipse Feeding Cake, -	1	1
Concentrated Manure,	1	...	Feeding Meal, - - -	1	...
Grain ,, -	1	...	Nutted Oil Cake, - - -	1	...
Ground Limestone, -	1	...			
Kainit, - - -	2	...			
Manure, - - -	1	1			
Nitrate of Lime, -	1	...			
Nitrate of Soda, -	2	...			
No. 1 Fertiliser, -	1	...			
,, 2 ,, -	1	...			
Potato Manure, -	1	...			
Potash, - - -	3	...			
Pure Dissolved Bones,	2	1			
Sulphate of Ammonia,	3	1			
Superphosphates—					
26 per cent., - - -	4	...			
30 ,, - - -	4	...			
Turnip Manure, -	1	...			
	34	3		4	1

## Shops Act, 1912.

This Act came into force on the 15th of May, and the administration of it was entrusted to the inspectors under the Food and Drugs Acts. Table E shows that 100 inspections were made to localities, 1,577 shops, &c., visited, and 772 contraventions detected. It was deemed undesirable to take any legal proceedings in these first offences. As the provisions of the Act are somewhat complicated and difficult to understand, the work of the inspectors was chiefly confined to the visiting of shops for the purpose of explaining the difficulties of shopkeepers, and generally aiding in establishing the administration of the Act on a uniform basis. A large part of the machinery of the Act consists of the exhibition of notices in the shops, viz.:—Assistants' weekly half-holiday notice, closing of shops notice (where there is no half-holiday order), employment of young persons' notice, and mixed shops' notice. It was found in the course of inspection that a very large number of shopkeepers did not possess the necessary notices, and did not know where to procure them, and these cases make up the large majority of contraventions detected. In order, therefore, to promote uniformity and to assist shopkeepers, a supply of the various notices was printed, and the following supplied free of charge to shopkeepers within the County, viz.:—

Assistants' weekly half-holiday,	...	...	193
Shops' weekly half-holiday,	...	...	—
Employment of young persons,	...	...	85
Mixed shops,	...	...	324
			602
			602

The observance by shopkeepers of the various provisions of the Act may be summarised as follows:—

**CLOSING OF SHOPS FOR WEEKLY HALF-HOLIDAY.**—A Half-holiday Order was made for the Middle Ward District of the County, fixing Wednesday or, alternatively, Saturday, as the weekly half-holiday. Orders for other districts were at the close of the year under consideration, and meantime the shopkeepers in these districts require to choose their own day for closing, and to exhibit a notice stating the day which they fixed. Very little difficulty has been experienced with regard to this provision, and only 10 contraventions have been detected, and these were remedied at once.

**MIXED SHOPS.**—This term applies to shops in which part of the trade or business is exempted, by the terms of the Act, from closing for a weekly half-holiday, and also from early closing under a Closing Order. In these shops a notice must be exhibited stating that only exempted goods can be sold. In the course of inspection, these shops were kept under supervision, and 10 contraventions of supplying non-exempted goods were detected, as well as a large number of cases of failure to exhibit the statutory notice. A verbal caution was found to be sufficient to deal with the offenders.

**STREET TRADING.**—In districts where the half-holiday closing of shops is fixed by an Order, attention was given to the provisions of the Act as regards street trading, and only one contravention was detected.

Regarding the closing of shops on Christmas and New Year's Days, which fell on Wednesday, the day fixed by the Middle Ward Half-holiday Order, complaints were made by shopkeepers that the compulsory closing of shops on these two days would incur financial loss to them as well as inconvenience to the public. In the circumstances the Local Authority decided, and advertised their decision, that they would not insist on the strict observance of the provisions of the Act as regards closing during the two weeks in question.

**EARLY CLOSING ORDERS.**—No Closing Orders fixing the hours for the closing of shops in the evening were made during the year, but inspections were made in Cambuslang Parish and Baillieston Lighting District for the purpose of completing the Register of Shopkeepers prior to a vote being taken in connection with proposed Closing Orders for these districts. The Barbers' and Hairdressers' Order, made under the Shop Hours Act, 1904, and applicable within the areas of the special lighting districts of Aitkenhead and Tannochside, Bellshill and Mossend, Blantyre, Bothwell, Cambuslang, and Uddingston, still remains in operation.

**SHOP ASSISTANTS' WEEKLY HALF-HOLIDAY.**—This provision has been well observed, only 5 contraventions being detected, and these were at once remedied on the matter being brought to the notice of the employers.

**ASSISTANTS' MEAL INTERVALS.**—During the routine inspection of shops, inquiries were made regarding the meal hours of assistants, and only 7 contraventions were detected. These were remedied on the employers being interviewed by the inspectors.

**SEATS FOR FEMALE ASSISTANTS.**—Eighteen contraventions of the provisions of the Act relating to seats for female assistants, were detected and remedied at once.

HOURS OF EMPLOYMENT OF YOUNG PERSONS.—The provision relating to the employment of young persons under 18 years of age for more than 74 hours per week, was only found to be contravened in one instance—that of a girl who was employed in a dairy for a whole week, including Sunday, without a weekly half-holiday.

COMMUNICATIONS.—Eleven communications were received from shopkeepers during the year, asking for information and stating their difficulties regarding the effect of the Act on their respective businesses were attended to by the inspectors.

TABLE E.—SHOWING INSPECTIONS, VISITS TO SHOPS, &c., AND CONTRAVENTIONS IN THE THREE WARDS OF THE COUNTY.

Inspections and Contraventions.	Upper Ward.	Middle Ward.	Lower Ward.	Total for County.
Inspections to Localities, ...	22	63	15	100
Visits to Shops, &c., ...	194	1,263	120	1,577
Contraventions—				
Failure to Close: Weekly Half-holiday and under Closing Orders, ...	2	7	1	10
Supplying non-exempted goods,	—	10	—	10
Street Trading, ...	—	1	—	1
Failure to give Assistants Weekly Half-holiday, ...	1	4	—	5
Failure to give proper intervals for meals, ...	—	6	1	7
Failure to provide seats for female assistants, ...	—	18	—	18
Employing young persons under 18 years more than 74 hours per week, ...	—	1	—	1
Failure to exhibit notices in terms of Act, ...	95	550	75	720
Total Contraventions, ...	98	597	77	772

## Rivers Pollution Prevention.

The systematic inspection of streams and sources of pollution was carried out on the lines adopted in previous years. It should be explained, however, that the reduction in the number of inspections made and samples taken, as compared with recent years, was due to the fact that during a considerable part of the year the staff was employed with the investigations carried out under the Food and Drugs Acts, in connection with the bleached flour case. The work done by the inspectors is summarised in the following table:—

TABLE A.—SHOWING SOURCES OF POLLUTION, INSPECTIONS, AND POLLUTIONS DETECTED

SOURCES OF POLLUTION.		INSPECTIONS.		POLLUTIONS DETECTED.
Nature.	Number.	Number.	Samples.*	Number.
Coal-Dross Washers, - -	78	281	23	61
Ammonia Works, - -	24	44	4	12
Paper Mills, - - -	4	10	...	8
Print, Dye Works, &c., -	7	4	...	3
Distilleries, - - -	3	6	...	...
Chemical Works, - -	2	...	...	...
Lead Mine, - - -	1	...	...	...
<b>Total for Industries, - -</b>	<b>119</b>	<b>345</b>	<b>27</b>	<b>84</b>
Sewage Purification Works, Outfalls, and Streams, -	...	500	112	...
<b>GRAND TOTAL, - -</b>	<b>...</b>	<b>845</b>	<b>139</b>	<b>84</b>

\*The samples analysed are dealt with in the report of the work done in the Chemical Laboratory.

### Trade Pollutions.

From the above table it will be observed that the total mining and manufacturing pollutions detected amounted to 84. The serious pollutions were reported to the County Clerk, and detailed monthly reports of the work done were issued to the Public Health Committee.

COAL-DROSS WASHERS.—Seventy-eight were under observation, 281 inspections were made, 23 samples taken, and on 61 occasions pollution was detected.

Owing to the frequency with which pollution occurred, the following collieries were specially reported to the County Clerk, who communicated with the colliery owners:—

Colliery.	Company.	Stream affected.
Barblues, Harthill, -	A. & J. Anderson, - -	How Burn.
Blantyre Farme, Ud- dingston, - - -	A. J. Moore & Co., - -	Clyde.
Fortrigg, Shotts, - -	Báton Collieries, Ltd., -	Almond.
Kepplehill, ,, - -	Kepplehill Coal Co., Ltd., -	Blind Burn.
Stane, ,, -	Do. do.,	Do.,
Westwood, Cleland, -	Murdostoun Coal Co., Ltd. -	South Calder.

In every instance, with the exception of Stane and Kepplehill Collieries, which are specially referred to below, satisfactory measures were carried out, as set forth in the following notes:—

*Barblues Colliery.*—(1) The erection of a silt-recovery tank and (2) improvement of existing settling-areas.

*Blantyre Farme Colliery.*—Improvement of existing collecting pond so as to prevent direct overflow to River Clyde.

*Fortrigg Colliery.*—The pollution here was at least on one occasion wilfully intended, the sluice of the settling-pond having been left open. Improvements have been carried out so as to prevent a recurrence from this cause.

*Kepplehill and Stane Collieries.*—At these collieries, following upon very strong representations by the County Clerk, the settling ponds were emptied and provided with brick-built sluices under lock and key. Notwithstanding this, frequent serious pollutions were detected throughout the year, brought about by discharges passing direct from the silt-recovery tank into the pit water outfall drain. On opening the channel between the tank and the settling ponds at Stane a simple device was found in use. This device consisted of a hinged board on the bottom of the channel which could be held open by a rod attached to a nail on the side of the channel, and thus allowed pollution to take place. At Kepplehill it was found that discharges were admitted direct from the settling pond by releasing the sluice and allowing the pond to drain from the bottom at apparently stated intervals,

Towards the close of the year representations were made to the Secretary for Scotland craving permission to institute legal proceedings against the owners of the collieries, in order that the Court might ordain them to abstain from causing pollution of the Blind Burn.

*Westwood Colliery.*—The pollutions detected were due to the silting-up of the bing settling area, and to a defect, on one occasion, in the pump circulating the washings between the silt-recovery tank and the washer. Towards the close of the year the owners of the colliery had entered into a contract for the erection of a special plant which would obviate the daily emptying of the silt-recovery tank to the settling ponds on the bing. This plant consists of a small drainer attached to the end of the silt-recovery tank, the contents of which are pumped on to a bed of felspar in the drainer, and the fine silt recovered and removed by the series of mechanical scrapers which deliver the silt at the boiler fires.

In other instances, following on verbal negotiation, with the local colliery officials, improvements were carried out. These collieries may be tabulated as follows:—

Allanton.	Broomfield.	Hallside.
Auchlochan.	Camp.	Home Farm.
Bardykes.	Dalquhandy.	Loanend.
Baton.	Dechmont.	Monkland No. 4.
Bellfield.	Gateside.	Nackerty.
Blantyre No. 1.	Gilbertfield.	Shotts Iron Works.

The nature of the more important improvements thus carried out may be specially detailed.

*Allanton Colliery.*—The pollutions which occurred at this colliery during the year were due to various causes, once to the bursting of the pipe which conveys the washings to an inundation area, and twice to carelessness on the part of workmen. Pollution from wagon drip was also detected on several occasions, for the prevention of which a special brick pond was provided, and arrangements made for a second pond to prevent pollution from this source.

*Bardykes Colliery.*—Owing to a defect on the upper end of the new settling area provided in 1911, a pollution occurred. The defect was at once remedied.

*Baton Colliery.*—Remedial measures were found necessary to be carried out on the large settling area provided last year, on account of the recurrence of pollution.

*Blantyre No. 1 Colliery.*—An improvement was effected here by the provision of an additional wagon-drip settling pond, a measure which had been urged for a long time. Pollution, however, has been observed on more than one occasion on account of delay in changing the effluent from one pond to the other.

*Broomfield Colliery.*—The preventive measures commenced in 1911 were duly completed, but pollution was again observed during the year owing to the defective condition of these measures. The defects, however, were removed on complaint being made.

*Camp Colliery.*—Pollution occurred from time to time at this colliery during the year. During the coal strike a large amount of the silt in the settling areas was removed, which considerably improved the means for preventing pollution. In the month of July pollution of a serious nature was detected and was due to circumstances which have before been complained of, viz., a defect in a storm-overflow drain connected with the Burgh of Motherwell drainage system. This drain passes through the Camp Coal Company's settling area, and, as the defect in the drain occurred within this area, the washings escaped direct to the Muckle Burn Glen and the River Clyde. On attention being called to the conditions, the colliery manager had the washings diverted so as to prevent pollution.

*Gateside Colliery.*—The pollution detected here was due to the silted-up condition of the wagon drip settling-pond, which was subsequently cleaned out.

*Gilbertfield Colliery.*—Defects on the bing settling area were found to permit of a polluting discharge. Remedial measures were adopted.

*Hallside Colliery.*—Here, three ponds, sub-divided into six sections, are provided for the interception of discharges from the silt-recovery tank and wagon drip. Attention was called to the need for using the ponds in rotation, and to their being cleaned out regularly. The ponds are now cleaned out by contract weekly or fortnightly.

*Loanend Colliery.*—On account of the discharge of coal-dross washings from the wagon drip pond being allowed to drain or overflow to an ash heap, pollution affected the Spittal Burn. Remedial measures were at once adopted.

*Monkland No. 4 Colliery.*—Additional measures were brought into use whereby the coal-dross washings are pumped into a large settling area behind the pit refuse bing, through which the effluent filters before reaching the stream. Subject to calling attention to the proper working of the pump delivering the washings to the new settling area, this arrangement has been found to work satisfactorily.

*Nackerty Colliery.*—Owing to serious structural defects in the settling ponds, caused by mineral workings, pollution occurred, but the necessary repairs were carried out with as little delay as possible.



**AMMONIA WORKS.**—Twenty-four were under observation. They are connected with the following industries:—Blast furnaces, 9; coal-gas works, 7; coke ovens, 3; gas-liquor works, 3; gas producers, 1; shale oil works, 1.

In connection with these 44 inspections were made, 4 samples taken, and on 12 occasions pollution was detected. The pollutions occurred at the following works:—

*Calder Iron Works.*—The serious pollutions detected during 1910 as occurring opposite the disused mine, into which the spent liquor has been discharged for a number of years, occurred on two occasions in mid-summer.

*Carnbroe Iron Works.*—The remedial measures connected with the ammonia plant were found throughout the year to be satisfactory, and no serious pollution has to be reported as having taken place.

*Clyde Iron Works.*—The new evaporating plant, comprising five special boilers, completed towards the close of 1910, has been found to dispose of the whole of the spent liquor. Pollutions detected during the year were due to accidental causes.

*Coltness Iron Works.*—In connection with the disposal of spent liquor from the ammoniacal plant, pollutions affecting the Auchter Water were detected at two outfalls alongside a slag bing, and traced to be coming from the disused mine into which surplus spent liquor is conveyed. These pollutions were brought to the notice of the owners of the works.

*Mossend Steel Works.*—Reference to these works will be found in the Special Report on Rivers Pollution, 1909, and in the Annual Reports for 1910 and 1911

With regard to the pollution of the Shirrel Burn and the North Calder by ammoniacal liquor, it will be remembered that the matter was the subject of special consideration by the Public Health Committee, who appointed a sub-committee, on 18th January, 1911, to inspect the works as well as a special plant at Parkhead Works dealing with a similar trade effluent. This inspection was made on 21st February, 1911, along with the officials (see minutes of 22nd March, 1911, p. 75). The Committee thereafter granted the owners of the works an extension of time until 1st February, 1912, to complete the remedial measures at Mossend.

On 11th September inspection was made at the works by the Rivers Inspector along with the Chemist, when the new remedial measures, which were mainly completed in April last, were found in operation with satisfactory results. The new measures comprise (1) an additional cooling tower; (2) internal alteration of existing cooling tower whereby the gas, as in the case of the new tower, is brought into contact with the liquor; (3) the disconnection of all pipes from the outfall culvert leading to the brick settling ponds or

tanks at the side of the Shirrel Burn; and (4) the continuous circulation of the liquor (*a*) between the heating tower (supplying the hot air to the producers) and the new cooling tower, and (*b*) between the old cooling tower and the cooling screen on the top of the sulphate house. The loss of liquor due to evaporation is made up by the addition of fresh water.

At the bottom of each tower there is, as previously, an iron tank where the liquor is caught. Here this liquor is separated into two portions, the heavier being conveyed to the tar liquor tanks and the lighter portion to the pumps which pass it through the cooling tower and the screen referred to.

At the settling tanks on the bank of the Shirrel Burn, two discharges were found, viz.—(1) surface drainage from the gas producers; and (2) exhaust water from boilers and leakages probably due to defects in liquor tanks. The total flow of these discharges is very small, and is intercepted in brick tanks from which it is pumped on to the ash refuse bin. No trace of pollution from this bin was detected. A series of samples taken from the stream gave the following results:—

SHIRREL BURN.	Analysis.	
	OXYGEN ABSORBED.	PHENOLS.
1.—Above weir at works,	1.10	—
2.—Below outfall from brick tanks,	1.25	—
3.—Above Bellshill Sewage Works,	1.06	—

These analyses show that the stream was free from spent ammoniacal liquor pollution.

A sample was also taken from a pipe discharging liquid at the bottom of the weir at the works. This discharge was found on analysis to contain a trace of phenols. It is understood that the liquid here comes from the cleaning plant, where the gas, after leaving the by-product plant, is made fit for use in the various industrial processes throughout the works. To what extent the discharge will vary in character is matter for further inspection.

*Shotts Iron Works.*—Pollutions by spent liquor have been detected and found to be due to discharges from shallow sandpits into which liquor is disposed of, when there is more than can be evaporated in the steam boilers. Information also showed that frequent pollution occurred at these works, particularly during the night and during the week-ends. Special attention is being given to this matter with a view to detecting the cause of pollution.

*Tarbrax Oil Works.*—Reference is made in the report for 1911 to inquiries into a complaint made by the tenant of Kersewell, near Carnwath, of pollution of the North Medwyn. At an inspection made in October of this year, a number of stream and other samples were taken for analysis. These shewed that the stream below the works still contained considerable quantities of iron in solution and suspension. The method of disposing

of spent ammoniacal liquor is as formerly, and may be considered satisfactory. No further complaint has been received.

**MANUFACTORIES.**—Seventeen were under observation, 20 inspections were made and on 11 occasions pollution was detected at Moffat and Caldercruix Paper Mills and Glengowan Print Works.

*Caldercruix Paper Mills.*—Since these mills were visited by a sub-committee on 13th June 1910, arrangements for removing the spent lime and excluding it from the settling ponds have been provided, but the provision of measures for the recovery of pulp waste has been delayed, pending further inquiries by the company as to the best means most suitable for the purpose. At present, the ponds are allowed to fill up and often long delay occurs before they are cleaned out, consequently the effluent carries with it a considerable amount of suspended matter, although discolouration may not be very serious at times.

*Moffat Paper Mills.*—The means adopted, for the prevention of pollution were described generally in last year's report, and remain the same at present, with the exception that in lieu of the large settling area, the Company proposed the construction of 18 sedimentation tanks and a large sludge area, into which the sludge collected in the tanks would be conveyed at regular intervals. So far as these proposals were shown on plans, it is satisfactory to note that there is no outlet from the sludge well to the river. A start was made with the excavation for the tanks in May, but, owing to sub-soil difficulties, the completion of the work was delayed at the close of the year. This has led to the discharge of effluent direct to the river Calder, which has therefore suffered and will continue to suffer until the completion of the tanks.

*Glengowan Print Works.*—The discharge from these works is, as a rule, of a reddish-brown colour, which can be traced in the river for a considerable distance. The difficulty in providing additional settling ponds was recognised by the sub-committee at their visit, owing to the peculiar situation of the works and levels of the adjoining ground, but the owners proposed to utilise one or more of the settling ponds as shallow filters with suitable filtering material, with a view to effecting an improvement in the character of the effluent before entering the stream. This proposal has not, however, been carried out.

*Gartloch Distillery.*—The remedial measures in progress at the close of 1911 in connection with the disposal of the trade liquor from this distillery, with a view to preventing the emission of offensive odours from the sewer manholes, were completed during the year. These measures comprised the relaying of the Distillery Company's private pipe, throughout its course along the Caledonian Railway and between the Railway at Robroyston and the Cumbernauld Road Sewer, together with the erection of two ventilating shafts and the fitting of close covers on all manholes.

The relaying of the Company's outfall sewer has removed some serious defects in the gradients, particularly that defect which assumed the form of a long inverted syphon. At one point of obstruction a continuous discharge of four hours took place through the pipe, although no liquid was being discharged from the distillery. At another obstruction a flow of three hours took place under similar conditions. There was therefore a total of seven hours continuous flow held up in the pipe by the obstruction or defects in the gradients. With the completion of the improvements on the sewer, the Distillery Company have continued to discharge the trade liquid fresh and without liming as formerly. Complaints were received from the Glasgow Corporation Local Authority, in January, while as yet the remedial measures were in course of completion, and also in October. To meet the latter complaint, the Distillery Company undertook to provide close covers for the manholes on a subsidiary sewer at Kennyhill, and to properly trap a few road gullies—all within the Glasgow area where objectionable odours had been detected and complained of. As offensive odours were also complained of as coming from the ventilating shaft erected a few yards north of the Canal at Smithycroft, it was deemed advisable to seal up the shaft so as to prevent the emission of any odour, and allow the sewer to ventilate through to its extreme points at Coshneuk Road and at the Distillery pipe at the Caledonian Railway, Robroyston.

#### **Solid Matter Pollution.**

Solid matter is defined by Section 2 of the Rivers Pollution Prevention Act, 1876, as "*the solid refuse of any manufactory, manufacturing process, or quarry, or any rubbish or cinders, or any other waste or any putrid solid matter.*" As noted in last year's report it has been found, that numerous streams are polluted by rubbish and miscellaneous articles deposited or thrown into them by householders, farmers, and others, the streams being regarded as a kind of scavenger to carry away such matters in times of spate. In various instances these pollutions were reported to the County Clerk, who arranged for handbills, warning persons against this offence, being posted in the vicinity of the streams concerned by the County Constabulary.

*Calderbank Steel Works.*—Complaint was again received as to the disposal of ashes from the gas producers at these works, where, although the ashes from the producers are deposited at a place where they can be removed daily in wagons, advantage had been taken by labourers to deposit them in the stream. On the company's attention being called to the practice, they dealt with the employees guilty of the offence, and in order to prevent a similar occurrence, had a strong fence erected along the bank of the stream at a point previously unprotected.

*Carnbroe Iron Works.*—The tip for the blast-furnace slag is situated along the course of the North Calder. In the earlier period of its use large boulders of slag found their way into the stream, and obstruct its flow. At present tipping is being done some distance from the river, where a large plant is in operation making "ballast."

*Coltness Iron Works.*—The tipping bank for blast-furnace slag is on the bank of the Auchter Water, into which several boulders of slag have recently fallen.

*Mossend Steel Works.*—The ashes from the gas-producers are deposited close to the edge of the Shirrel Burn. No serious obstruction has, however, occurred.

### Sewage Pollutions and Sewage Disposal.

In connection with sewage pollutions 500 inspections were made, and 84 samples taken.

With regard to sewage pollutions for which the District Committees are responsible a considerable amount of progress has been made, especially in the Middle and Lower Wards. In the Upper Ward the need for purification works is not so great, but there, also, where necessary, the provision of works will require to be undertaken, and is receiving attention. The present position in each of the three districts may be briefly stated as follows:—

In the Upper Ward there are 7 special drainage districts, all of which except one are provided with some means for sewage purification.

In the Middle Ward there are 23 special drainage districts, 6 of which are provided with complete systems of purification. The present position as regards the other 17 districts is shown in the following tabular statement summarising information obtained from the District Engineer:—

DRAINAGE DISTRICT.	POPULATION, ABOUT	ACTION TAKEN.
Stonehouse, ... ..	3,393	Negotiating for a site for works.
Larkhall, ... ..	13,900	Land acquired and plans prepared for works for Avon outfalls. Negotiating for site for works for Clyde outfalls.
Bothwell, ... ..	3,550	Sewage from one-third of district treated at Fallside Sewage Works. Engineer to report on scheme for remainder of district.
Blantyre, West, ... ..	15,500	Land acquired for works. Detailed plans prepared. Engineer reporting on new site. Sewage of East Section treated at works at Springwells.
Do., East, ... ..		
Aitkenhead and Tannochside, ... ..	2,912	Negotiating for site for works at Haughhead.
Uddingston, ... ..	9,022	Do. do.
Chapelhall, ... ..	2,000	Works in operation for portion of district drainage to Shotts Burn.
Carfin, ... ..	2,000	Sewage of northmost part irrigated; remainder treated at Motherwell Burgh Purification Works. Engineer designing complete works for northmost part.

DRAINAGE DISTRICT.	POPULATION, ABOUT	ACTION TAKEN.
New Stevenston, ... ..	3,580	Committee considering report on scheme.
Holytown, ... ..	2,100	Do. do. do.
Bellshill and Mossend, ...	15,000	Works for north side of district constructed this summer. Scheme for south side before committee.
Baillieston, ... ..	4,120	Plans and specifications prepared for whole district.
Mount Vernon, ... ..	4,500	Part of sewage dealt with at new works at Westthorn, Lower Ward. Negotiating for land for sewage works for Carmyle outfall.
Newmains, ... ..	4,100	District formed in 1911; works under construction.
Cambuslang, ... ..	19,300	Works at Threeneuk under construction.
Newton and Flemington,	4,650	Land acquired. Tank already provided. Construction of filters under consideration.
Shotts, ... ..	5,056	District formed 1912. Engineer preparing plans and specifications for sewers and purification works.

Within the Lower Ward there are six special drainage districts, one of which drains direct to the Clyde, viz., Shettleston and Tollcross, being part of Barony Drainage District, for which works are provided at Westthorn. For Chryston and Muirhead District, works were provided in 1911. These works drain to the Bathlin Burn. Other two drainage districts, viz., Stepps and Bishopbriggs, are also provided with sewage purification works. For Carmunnock, sewage purification works were provided during the year, while the sewage of the remaining part of the Barony Drainage District and that of Rutherglen Parish Special District is dealt with at the Glasgow Corporation Sewage Purification Works at Dalmarnock and Shieldhall respectively.

Although the works at Westthorn are within the Glasgow area, by the extension of the City Boundaries towards the close of the year, they are reserved for the areas outwith the extended boundary of Glasgow. Thus three local Authorities have now an interest in the works, viz:—

(1) The Lower Ward District Committee for Mount Vernon and Sandyhills; (2) The Middle Ward District Committee for Foxley and Fullarton; and (3) The Glasgow Corporation for the portions of Shettleston and Tollcross annexed.

So far as the Burghs are concerned, additional works are still to be provided at Hamilton, Motherwell, and Wishaw. In connection with the Burgh of Motherwell, a special report was submitted to the County Clerk with reference to alterations made or intended to be made by the Burgh Authorities on the original schemes laid down by Mr. Carter, C.E., and endorsed by Order of the Court in 1903. These alterations refer to the diversion of certain outfalls and a proposed new site for one of the two works still to be provided. In ordinary course they should have been first reported to the Court. It is understood that this procedure is likely to be followed early in 1913.

As regards the Burghs of Coatbridge and Airdrie, pollution is still taking place as in 1905, when the actions were first raised against these burghs. Further applications were made for the direction of the Court in July, when the following interlocutors, which fully explain the cases, were issued by Sheriff-Substitute Glegg.

AIRDRIE, 10th July, 1912. The Sheriff Substitute having heard parties, Remits to Mr. William Allan Carter, C.E., 51 Queen Street, Edinburgh, to report on the best practicable and available means and the nature and cost of the works and apparatus required in order to prevent the fall or flow of any solid or liquid sewage matter into (First), the stream known as the North Calder Water; (Second), the stream known as the Luggie Burn, which is a tributary of the said North Calder Water; (Third), the stream known as the Gartsherrie Burn, which flows into the said Luggie Burn; (Fourth), the stream known as the North Burn, which flows into the said Gartsherrie Burn; and (Fifth), the stream known as the South Burn, which flows into the said Luggie Burn, all within the Burgh of Coatbridge, directing said Reporter to take into consideration the reasonableness of the expense involved in his Report.

“ A. T. GLEGG.”

NOTE.—On 10th April, 1906, the late Sheriff Guthrie, after certain findings, appointed the case to be put to the Roll to discuss the terms of remit to a man of skill, under Section 10 of the Rivers Pollution Act, 1876. An Appeal was taken by Defenders in respect of certain of the findings, and in these particulars the Interlocutor of the Sheriff was recalled. The ground of reversal was that Defenders had, after amendment, stated a defence, on which they were entitled to go to proof. The case was accordingly sent back to the Sheriff Substitute to take proof on this particular averment and to proceed as accords. Proof was taken and the Sheriff Substitute found against Defenders, and pronounced an Interlocutor of 13th July, 1908, concluding with the sentence—“ Before making a remit as directed by Section 10 of the said Act, appoints parties to be heard as to the terms of the remit.” This Interlocutor was appealed to the Sheriff, who affirmed it on 30th December, 1908, and remitted “ to the Sheriff Substitute to proceed in terms thereof.” The Sheriff’s Interlocutor was appealed to the Court of Session, which sustained the decision of the Sheriff on 4th June, 1909, and remitted the cause to the Sheriff Substitute to proceed as accords. The judgment of the Court of Session was appealed to the House of Lords, which on 8th April, 1910, dismissed the Appeal and affirmed the Interlocutors above mentioned.

In October, 1911, the Pursuers enrolled the case for further procedure, but when the case came on they agreed to a continuation, in order that certain negotiations, which Pursuers said had been so far unproductive, might be gone on with. Similar motions were made once or twice afterwards with the same result, the Pursuers agreeing to give the Defenders more time. Now, however, the Pursuers say that no agreement has been come to, and move the Sheriff Substitute to remit in terms of the affirmed Interlocutors. The Defenders object and ask the Court not to remit to a man of skill, or, to be precise, not to hear a discussion on the terms of a remit to such a person. They say that

they have approved of plans, are prepared to go on with them, and are entitled to do so. They do not say that the Pursuers have approved of these plans, and it did not appear from anything stated at the Bar how they could force the Pursuers to accept their plans. The Pursuers denied that they had accepted any undertaking by Defenders, and maintain that they are entitled to proceed in accordance with the Interlocutors mentioned above, and that the Sheriff Substitute is bound to grant their Motion.

It seems to me that their demand is unanswerable. I am bound by the judgment of a superior Court to proceed in a particular way. The only way in which the House of Lords' judgment could become inoperative would be by the parties taking the case out of the Court, and this they have not done. If the case remains in Court, the Sheriff Substitute is clearly bound to obey the Order contained in the judgment of the superior Court. The direction is clear and specific, and must be carried out.

As to the terms of the remit, the Pursuers asked for the introduction of directions which are not mentioned in the Statute. The Defenders, without prejudice to their contention that a remit should not be made, argued that the remit should be made precisely in terms of Section 10 of the Rivers Pollution Act, 1876. I think the Defenders are right in this.

“ A. T. G.”

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AIRDRIE, 10th July, 1912. The Sheriff Substitute having heard parties, Remits to Mr. William Allan Carter, C.E., 51 Queen Street, Edinburgh, to report on the best practicable and available means and the nature and cost of the works and apparatus required in order to prevent the fall or flow of any solid or liquid sewage matter into (First), the stream known as the North Calder Water; (Second), the stream known as the Luggie Burn, which is a tributary of the said North Calder Water; (Third), the stream known as the Gartsherrie Burn, which flows into the said Luggie Burn; (Fourth), the stream known as the North Burn, which flows into the said Gartsherrie Burn; (Fifth), the stream known as the South Burn, which flows into the said Luggie Burn; and (Sixth), the stream known as the Brown Burn, which is a tributary of the said North Calder Water, all within the Burgh of Airdrie, directing said Reporter to take into consideration the reasonableness of the expense involved in his Report.

“ A. T. GLEGG.”

NOTE.—Reference is made to the Note in the County Council of Lanark v. Magistrates of Coatbridge of this date. The only differences are that the present defenders seem to have done less than the Coatbridge Burgh, as they have not yet approved of a scheme, and that a plea, No. 8, as to the impossibility of abating the nuisance, has been reserved. All that I have said in the other case, however, applies. The Interlocutors in this case are the same on the present point, and the direction to proceed to appoint a party of skill to report was pronounced although plea No. 8 was reserved.

“ A. T. G.”



During the year special sampling of the crude sewage, tank, and filter effluents was carried out at Stepps Purification Works, in the Lower Ward. As usual this sampling was continued over a period of hours, so as to obtain average samples. At the end of every three hours an average sample was made up of each effluent for a full analysis, the results of which will be found in the Chemical Laboratory portion of the report. These show a very low percentage of purification, and evidently point either to the method of distribution or to the filter material being unsatisfactory. It was further noted that there was a considerable increase in the albuminoid figure for the filter effluent as compared with the dortmund tank effluent, while there was also an increase in the suspended solids. The cause of this is probably the ponding up of liquid on the distributing trays from which deposits of polluting matter pass through the filter. In addition, the trays only permit of 180 cubic yards of the filter area being operated whereby 1 cubic yard deals with about 300 gallons per day, whereas if the whole filter area were in operation the rate of filtration would be equal to 124 gallons per cubic yard per day. Improvements will require to be carried out on these works in order to obviate pollution of the Garnkirk Burn.

In order to obtain information as to the distribution of sewage by Adams' Patent Rotary Distributors as adopted at several sewage works in other parts of the County, the Lower Ward Engineer, along with County Officials, inspected the sewage works at Springwells, Bellshill, Chapelhall, and at Hartwood Asylum.

In view of evidence to be led in connection with the Glasgow Extension Bill (1911), which sought to include territory at Bishopbriggs, Govan, Shettleston and Tollcross, sampling was also carried out at the following works, viz., Bishopbriggs Sewage Works, Westthorn Sewage Works, and the Glasgow Corporation Sewage Works at Dalmarnock and at Shieldhall. As regards the latter works the figures supplied in the Annual Report on the operations of the Chemical Department of the City of Glasgow for the year ended 31st May, 1911, show that the purification effected as calculated on albuminoid ammonia and oxygen absorbed averages 59 per cent. for Dalmarnock Works and 19 per cent. for Shieldhall Works. The effect of the discharges from these works on the River Clyde as shewn by the analyses of the samples of the effluent taken at the time of inspection by the County Officials, will be found in the Chemical Laboratory portion of the report.

In connection with the Eighth Report of the Royal Commission on Sewage Disposal, issued towards the close of the year, dealing with the question of the standards and tests for sewage and sewage effluents discharging into rivers and streams, a copy of the Report along with the following notes relative thereto, were issued to the members of the Committee.

In this report the Commission deal with the question of the standards to be applied to sewage and sewage effluents discharging into rivers and streams, and as the conclusions set forth are of considerable interest to Local Authorities responsible for the prevention of sewage pollution, they are here submitted for the information of the Public Health Committee. By way of explanation of these conclusions, it has to be pointed out that they are based on the fact that when river water does not normally take up more than 0.4 parts per 100,000 of dissolved oxygen in 5 days the river will ordinarily be free from signs of pollution. This figure is termed the "limiting figure." If, however, a river normally gives a higher figure, it will almost certainly show signs of pollution, except perhaps in very cold weather.

#### SUMMARY OF CONCLUSIONS.

(a) The law should be altered so that a person discharging sewage matter into a stream shall not be deemed to have committed an offence under the Rivers Pollution Prevention Act, 1876, if the sewage matter is discharged in a form which satisfies the requirements of the prescribed standard.

(b) The standard should be either the general standard or a special standard which will be higher or lower than the general standard as local circumstances require or permit.

(c) An effluent in order to comply with the general standard must not contain as discharged more than 3 parts per 100,000 of suspended matter, and with its suspended matters included must not take up at 65°F. (18.3°C.) more than 2.0 parts per 100,000 of dissolved oxygen in 5 days. This general standard should be prescribed either by Statute or by Order of the Central Authority, and should be subject to modifications by that Authority after an interval of not less than ten years.

(d) In fixing any special standard the dilution afforded by the stream is the chief factor to be considered. If the dilution is very low it may be necessary for the Central Authority, either on their own initiative or on application by the Rivers Board, to prescribe a specially stringent standard, which should also remain in force for a period of not less than ten years.

(e) If the dilution is very great the standard may, with the approval of the Central Authority, be relaxed or suspended altogether. Our experience leads us to think that as a general rule, if the dilution, while not falling below 150 volumes, does not exceed 300, the dissolved oxygen-absorption test may be omitted, and the standard for suspended solids fixed at 6 parts per 100,000. To comply with this test no treatment beyond chemical precipitation would ordinarily be needed. If the dilution while not falling below 300 volumes does not exceed 500 the standard for suspended solids may be further relaxed to 15 parts per 100,000. For this purpose tank treatment without chemicals would generally suffice if the tanks were properly worked and regularly cleansed. These relaxed standards should be subject to revision at periods to be fixed by the Central Authority, and the periods should be shorter than those prescribed for the general or for the more stringent standards.

(f) With a dilution of over 500 volumes all tests might be dispensed with, and crude sewage discharged, subject to such conditions as to the provision of screens or detritus tanks as might appear necessary to the Central Authority.

It may be stated that the Fifth Report of the Commissioners, issued in 1908, contained important conclusions and recommendations, particularly with regard to tanks and filters upon which engineers prepared data which formed a basis for purification schemes. In the Lower and Middle Wards of the County, as well as in the Burghs of Lanark, Hamilton, and Motherwell, there are 13 sewage works where tanks and filters have been provided at very considerable cost. Perhaps it has been felt that the expenditure was excessive, but in every instance the results show that the works are not in excess of that necessary to maintain the purity of the streams into which they discharge, according to the standards recommended by the Commission. At the same time it may now be found that some further improvement will be required at several works. On the other hand, there may be circumstances in which the conditions may be relaxed in connection with purification schemes still to be carried out in the County, so that the Local Authority concerned may not be required to purify the sewage more highly than is necessary to prevent the risk of actual nuisance from the discharge, in regard to smell, over development of grey algal growth, accumulation of putrefying sewage solids and detriment to fish life. Obviously this will depend upon the two factors laid down, namely, the character or quality of the stream receiving the discharge and the degree of dilution afforded by the stream. Under the Rivers Pollution Act, 1876, the discharge itself is *alone* to be considered but in applying the standards the Commissioners state:—“*Since our main objective is primarily the improvement of rivers, and only secondarily the improvement of effluents, it would seem logical that standards should be applied not to sewage liquors or effluents alone, but to such discharges under ordinary conditions, i.e., when mixed with the river water.*”

The chemical standards laid down have already been followed in this County, but in view of the important bearing of the matter in relation to existing works and to proposed works, arrangements have been made with the staff to take systematically, for a period of twelve months, series of samples from the streams above and below the point where discharges enter from sewage works. In addition, series of samples of the River Clyde will be taken. The results of analyses will be fully recorded, and will be available for the engineers of the districts and for future reference in the event of the establishment of Rivers Boards or Central Authority, as recommended by the Commission. In carrying out these tests it is necessary that the dry weather volume of the stream, velocity and depth, should be ascertained, together with the volume of sewage discharged. It will, therefore, be desirable that the District Engineers of the County supply this information, which is indispensable in order to calculate the degree to which the particular sewage effluent is to be purified.

Pending legislation embodying the recommendations as to amending the Rivers Pollution Prevention Act, 1876, the establishment of a Central Authority, Rivers Board, or County Councils, who would be empowered to administer the standards, it is for the consideration of the Committee whether they should in connection with the future administration of the Rivers Pollution Act, accept the recommendations of the Royal Commission as a measure of purification to be desired according to the varying circumstances or local requirements.

In conclusion, it may be noted that this eighth report of the Royal Commission is by far the most important and comprehensive report yet issued. Their next and final report is intended to deal with methods of disposal not involving water carriage and with standards in regard to trade effluents.

In the month of April samples of the River Clyde were taken at points above and below the outfalls from Westthorn Sewage Works and Dalmarnock (Glasgow) Sewage Works.

### Complaints.

*River Almond.*—This river was the subject of complaint on account of pollution by coal-dross washings, in connection with which special inquiries and inspections were made. These showed that the settling ponds at Barblues Colliery, near Harthill, were defective. A silt recovery tank has since been erected and brought into use.

*Auchter Water.*—Inspection was made of this stream between Coltness Iron Works and its junction with the South Calder, regarding which complaint was made. Within this reach several discharges of slag-bing drainage were detected affecting the stream, while at the lower end of the slag-bings the course of the stream is impeded by one or two slag boulders.

*Burgh of Hamilton—Park Burn outfall.*—Inspections were made in connection with a complaint arising out of pollution of the Wellshaw Burn by the sewage effluent from the burgh's sewage works discharging into this stream instead of direct into the River Clyde. This was due to a break in the outfall sewer which may have been caused by underground workings. These circumstances, as well as some other matters arising out of the inspections made, were reported to the Burgh Surveyor.

*Carlisle Drainage.*—The proposals to deal with the pollution of Jock's Burn, referred to in last year's report, were still under consideration at the close of the year.

*Carnwath Drainage.*—No further complaint has been received in connection with the disposal of the sewage from this special district.

*Coal Burn.*—Complaints were made by a farmer of pollution of the Coal Burn occurring intermittently during the Summer. These complaints were carefully investigated, and were found to have occurred in connection with operations incidental to the re-opening of the old Dalquhandy pit, owned by Messrs. Waddell & Son. The pollution was mainly due to discharges of pit water, which, although they may have a serious polluting effect, cannot be dealt with under the Rivers Pollution Prevention Acts. It should be noted, however, that the inquiries shewed that the pollution at first had been caused by a mixture of coal-dross washings and pit water, and that steps were at once taken to prevent the pollution of this nature.

*Garnqueen Burn.*—Inspection was made of this burn in connection with a complaint by the occupier of Garnqueen Farm, and a report was furnished to the County Clerk. The question of providing a sewerage scheme and purification works for the village is under consideration by a joint committee of the Lower and Middle Wards.

*Gimmerscroft Watercourse.*—Complaint was received from the occupier of Gimmerscroft Farm, Gartness, regarding the pollution of this stream on the farm lands by sewage from Gartness Rows. This complaint was inquired into and reported on.

*Kirkmuirhill.*—As noted in last year's report, inspections were made in connection with a complaint of sewage pollution of a stream at Kirkmuirhill in the Upper Ward. Consideration of the question of proper means of drainage and sewage disposal for this district is necessary.

*Law Drainage.*—No further complaint has been made in connection with the disposal of the drainage from this special district, but nothing has yet been attempted by way of purifying the sewage discharging to the Garrion Burn.

*Lesmahagow Drainage.*—The question of the prevention of pollution of the River Nethan by sewage from Lesmahagow was still under consideration at the close of the year, and was the subject of report by the local committee's engineers in the current year.

*Luggie Water.*—This water forms the boundary between the Counties of Lanark and Dunbarton on the north-east side of New Monkland Parish, and of Cadder Parish in the Lower Ward. In connection with a complaint from the County Medical Officer of Dunbartonshire regarding alleged pollution from Bedlay Collieries and Ammonia Works, special inspection and inquiries were made, but no evidence was obtained that would confirm the complaint. Information was, however, received locally which went to show that a recent serious pollution had occurred at Tannoch Chemical Works, within Dunbartonshire territory near Cumbernauld.

*North Burn.*—A series of samples was taken from this stream in connection with a complaint of alleged pollution by sewage from Whiterigg and Airdrie, above the Burgh of Airdrie. These samples shewed that the stream before it enters the burgh was quite clear.

*North Calder.*—Inquiry and inspection were made of this stream in connection with a complaint referring to the disposal of engine ashes from Calderbank Steel Work. A report was furnished to the County Clerk indicating that steps were at once to be taken by the owners of the works to erect a fence so as to prevent their employees tipping ashes from the gas producers directly into the stream.

*Rotten Calder.*—Complaint was received of pollution of this stream at Calderglen Estate, due to oily discharges from Priory Colliery, Blantyre. On inspection and inquiry being made oily matter was found in the stream. The attention of the colliery manager was called to the pollution.

*Shotts Burn, Salsburgh.*—A small purification scheme, consisting of septic tank and continuous filter, with irrigation area, has been provided for the sewage of Shotts Kirk Public School. Owing to delay in completing the works, the sewage was directed for a time to the irrigation plot, but notwithstanding this no pollution was detected as affecting the Shotts Burn although it was the subject of complaint by the Airdrie and Coatbridge Water Trust.

*South Calder.*—Inspection was made of this stream and its tributaries between Murdostoun and Shotts on 30th May, from 3 o'clock to 9 p.m., for the detection of pollution occurring after working operations had ceased at the collieries. The result of this inspection showed that pollution of this stream was mainly caused by coal-dross washings from Stane and Kepplehill Collieries. An intermittent discharge of spent ammoniacal liquor was also detected at Shotts Iron Works. Inquiries also shewed that serious pollution occurred at these works on two Sundays, 5th and 26th May. A report was furnished to the County Clerk regarding these sources of pollution.

*Spittal Burn.*—Complaint was made with regard to this stream, which is liable to pollution by coal-dross washings from Loanend Colliery. Inspection was made, and a greyish discharge from the final settling pond at the colliery detected as affecting the stream, although there were no deposits of coal-dross washings in the stream.

*Thankerton Drainage.*—No complaint of rivers pollution was made during the year. The question has, however, been raised during the current year, and a large number of inspections have been made. These are specially referred to in the Upper Ward portion of the report—see pages 127-38.

COUNTY OF LANARK—BURGH OF BIGGAR.

(Population, 1,326 ; Area, 62 acres ; Density, 21·4 persons to the acre.)

REPORT BY THE MEDICAL OFFICER OF HEALTH  
FOR THE YEAR 1912.

I.—VITAL STATISTICS.

The population as ascertained at the Decennial Census 1911 was 1,326. The following details of previous censuses are given for comparison :—

Year.	Census Population.	Year.	Census Population.
1861,	- - 1,448	1891,	- - 1,356
1871,	- - 1,471	1901,	- - 1,366
1881,	- - 1,556		

The number of occupied houses on the Valuation Roll 1912-13 was 404.

The **Births** registered amounted to 14, and gave an annual birth-rate of 10·55 per thousand of the population. The average birth-rate for the sixteen years 1896-1911 was 20·9 per thousand of the population.

The **Deaths**, including 3 transfer deaths, numbered 25, and gave an annual death-rate of 18·85 per thousand of the population. The average death-rate for the sixteen years 1896-1911 was 17·35.

The average annual infantile mortality during the sixteen years 1896-1911 was in the proportion of 80·2 deaths to 1,000 births.

Arranged according to *age*, the number of deaths was, under 12 months, 3 ; 25 and under 45 years, 1 ; 45 and under 65 years, 7 ; 65 years and over, 14.

Classifying the deaths according to *cause*, there were from influenza, 1 ; pulmonary tuberculosis, 1 ; malignant disease, 1 ; nervous, 2 ; respiratory, 1 ; circulatory, 6 ; diarrhoea, 1 ; other digestive, 2 ; prematurity, 1 ; debility, 1 ; and other defined diseases, 8.

The following table shows the number of births and deaths, with respective rates and also causes of death, for each year since 1896 :—

TABLE I.—VITAL AND MORTAL STATISTICS SINCE 1896.

	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Number of Births, ...	30	43	33	33	27	30	25	29	28	27	35	28	29	16	20	28	14
Birth-rates per 1,000, ...	22·12	30·3	23·0	23·4	19·2	21·9	18·2	21·16	20·0	19·28	25·0	20·0	20·7	11·42	15·08	21·11	10·55
Number of Deaths—	5	6	6	1	2	1	1	...	2	...	3	2	3	...	1	4	3
Under 1 year of age, ...	28	28	40	23	28	20	31	16	22	21	24	15	37	15	17	17	25
At all ages, ...	20·6	19·7	27·9	15·7	19·9	14·6	22·6	11·6	15·7	15·0	17·1	10·7	26·4	10·7	12·8	12·8	18·8
Death-rates per 1,000, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cause of Death—	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever, ...	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...
Typhoid Fever, ...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Measles, ...	...	1	...	...	...	...	...	...	...	...	...	3	4	...	...	...	...
Whooping-cough, ...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Diphtheria, ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
Influenza, ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Septic Diseases, ...	...	...	...	...	...	1	2	...	...	...	...	...	1	...	...	...	...
Tuberculosis—	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary, ...	2	3	4	1	5	5	3	...	4	...	2	2	2	1	1	...	1
Other forms, ...	...	2	3	1	1	...	...	...	...	1	1	...	...	...	...	...	...
Malignant Diseases, ...	1	5	2	3	1	2	1	3	2	1	...	...	...	2	2	3	1
Nervous Diseases, ...	5	3	4	3	2	2	2	...	2	1	2	...	...	...	...	2	2
Circulatory Diseases, ...	1	1	7	5	3	3	4	3	4	6	7	3	6	1	5	4	6
Respiratory Diseases, ...	6	3	6	2	5	1	8	1	3	2	3	3	7	3	4	2	1
Diarrhoea, ...	...	1	...	...	1	...	...	...	...	...	1	...	1	1	...	2	1
Violence, ...	2	...	3	1	1	1	2	...	1	...	...	...	1	1	2	...	...
All other causes, ...	9	9	11	7	9	5	9	8	5	9	7	4	13	6	3	4	12



## II.—PREVALENCE OF INFECTIOUS DISEASE.

Forty-three cases of infectious disease were notified, viz. :—Scarlet fever, 38 ; erysipelas, 3 ; and pulmonary tuberculosis, 2.

The epidemic of scarlet fever which occurred during the year was the most severe yet experienced in the Burgh, as shown in the following Table II., which gives the number of cases of infectious disease known to have occurred during the seventeen years 1896-1912, viz. :—

TABLE II.

Year.	Scarlet Fever.	Diphtheria.	Erysipelas.	Enteric Fever.	Phthisis.	Non-Notifiable.
1896	19	...	...	...	...	...
1897	7	...	...	...	...	1†
1898	...	...	3	...	...	...
1899	23	...	5	1	...	...
1900	8	...	1	...	...	...
1901	3	...	...	...	...	60*
1902	...	...	3	...	...	...
1903	2	...	5	1	...	...
1904	...	1	...	...	...	...
1905	...	...	2	...	...	62*
1906	3	...	...	...	...	...
1907	1	2	...	...	...	...
1908	...	5	2	...	...	1†
1909	1	2	2	...	...	1*
1910	...	1	1	...	...	...
1911	...	2	3	...	...	...
1912	38	...	3	...	2	...

\* Cases of Measles ; † Case of German Measles ; ‡ Case of Whooping Cough.

During 1912 there were seven distinct periods during which no case was notified, thus dividing the cases into eight series, inclusive of those at the beginning of 1913, viz. :—

Series.	Number of Cases.	First Notification.	Last Notification.
I.	1	5/1/12	...
II.	1	1/6/12	...
III.	25	23/6/12	27/7/12
IV.	5	1/9/12	3/9/12
V.	1	20/9/12	...
VI.	1	17/10/12	...
VII.	4	14/12/12	28/12/12
VIII.	5	7/1/13	6/3/13

The distribution of cases according to families was as follows:—Two families with 5 members affected; two with 4 members; one with 3 members; three with 2 members; and sixteen families in each of which 1 case occurred.

The distribution of cases according to area was as follows:—19 cases occurred in one row; 5 cases occurred in one square, and 5 in one house; 2 cases occurred in one street, and 2 in one square; and 10 cases occurred in ten other houses.

No evidence was found to connect the first two cases with those in the third series.

The first cases of the fourth series appeared immediately after the return from Hospital of the last cases in the third series, and the possibility of their being "return cases" must be kept in view. What is equally, if not more, probable, however, is that they owed their infection to some unrecognised case with which they came into contact.

The fifth and sixth series each consist of 1 case, the former for no known reason, while the latter occurred six days after the return from Hospital of a case, J.W., in the fourth series.

No definite source of infection can be assigned for the cases in the seventh series.

The eighth series offers the greatest difficulty. The first case in this series, J.C., returned to Biggar incubating scarlet fever, and was removed to Hospital. The two following cases, J.A., are members of a family, three of whom are already included in the seventh series, and appear to be in no way connected with J.C. The fourth case, W.C., had been from home since 19th February, and only returned on 23rd February, on which day he is understood to have first taken ill, and five days before his sister, J.C., already referred to, was discharged from Hospital. There appear to be good reasons for doubting if he actually had the disease, and, therefore, the last case, V.C., may be looked upon as possibly a "return case."

#### CONCLUSIONS.

That the first 2 cases were merely such as occur in all communities.

That one or more mild unrecognised cases were responsible for the continuance of the epidemic till March, 1913.

That some may have been "return cases," but the evidence on this point is not conclusive.

That there is no direct evidence that infected clothing, &c., played any direct part in this epidemic.

That removal to Hospital, however prompt, is apparently no preventive in an outbreak of this nature, and can only be recommended as a means of obtaining better treatment for the cases involved.

That owing to the housing conditions of the majority of the patients, isolation at home cannot be carried out satisfactorily, and is in no way preferable to removal to Hospital, unless on the ground of expense, but that where there is suitable accommodation and strict obedience to instructions, a case may be nursed at home without undue risk of the further infection.

The following extract from the Annual Report of 1896 is worthy of consideration at the present time :—

*Hospital Accommodation.*—Although the Commissioners do not possess the means of isolating cases of infectious sickness, they have made application to the District Committee of the Upper Ward of the County for accommodation to the extent of *two beds*. A favourable reply having been received, it is unnecessary for me to make any recommendation, as the proposed arrangement is a wise one. I would, however, point out, as an alternative, that it might be possible to provide the necessary accommodation within or near the Burgh at no greater cost—thus, if a small isolated cottage of, say, two bedrooms and a kitchen could be rented at a sum not exceeding, say, nine pounds per annum, the two bedrooms might be furnished for the use of patients, and the kitchen occupied by a single woman, or married couple without family, who, on condition that they would act as caretakers, would sit rent free. Then when a case occurred requiring removal to Hospital, a trained nurse could be obtained on a few hours' notice, and the woman acting as caretaker could then act as general servant, and be paid for her services.

“As outbreaks of infectious sickness only occur at intervals within the Burgh, some such plan of having a small *Cottage Hospital* always in readiness would generally meet all requirements.”

### III.—GENERAL.

**Food and Drugs Acts.**—During the year the Inspectors paid one visit to the Burgh, made 12 inspections, and procured 9 samples. The samples were all analysed by the Public Analyst, and certified to be genuine.

**Workshops.**—The number of workshops, including retail bakehouses, on the register at the close of the year was 37. All the bakehouses are reported as having been kept clean, and in a proper sanitary state.

From the Factory Inspector no notices were received during the year, either with regard to commencement to occupy a workshop, sanitary defects, or the sanitary accommodation order. No lists of out-workers were received from other local authorities under Section 107.

The inspections of workshops made by the Sanitary Inspector amounted to 116, and no sanitary defects were found.

The number of workshops on the register classified according to trade or industry, together with the number of employees, was as follows:—

Industry.	Number.	Number of Employees.
Dressmakers, Milliners, and Tailors, ...	14	45
Harness-makers, ...	2	5
Jewellers, ...	3	5
Blacksmiths, ...	2	6
Bakers, ...	5	19
Shoemakers, ...	5	14
Cabinetmakers, ...	2	7
Laundries, ...	4	11

**Dairies.**—There are 4 dairies and cowsheds in the Burgh, with 34 cows therein. During the year 48 inspections were made.

**Slaughter-house.**—The statistics supplied are as follows:—Total number of animals killed during the year was 6,649, viz., 576 cattle, 5,876 sheep and lambs, 181 pigs, and 16 calves. The Veterinary Surgeon made 280 inspections.

**Sewage Purification Works.**—Inspection was made by the Rivers Inspector in April, when the irrigation fields and tanks were found in satisfactory order.

#### REPORT OF THE SANITARY INSPECTOR FOR 1912.

In accordance with the requirements of the Local Government Board, I beg to forward the following report:—

The water-supply for the Burgh is obtained from King's Beck Burn, situated about seven miles south of Biggar, and the supply was sufficient for all requirements.

To the *drainage and sewage systems* seven new connections were made during the year. The west-end sewage, after passing through three settling tanks (which were cleaned out four times during the year), is allowed to run in open channels, and spreads over the greater part of 10 acres of land, the property of the Town Council. The

east-end sewage, after passing through two settling tanks, is allowed to run in open channels, and spreads over about 6 acres of land, jointly owned by the Town Council and Mr. Murray of Heavyside. The present system of sewage disposal has been very satisfactory.

In connection with the *scavenging*, the ashes and night-soil from the dry closets are removed on alternate days, that is:—on Mondays, Wednesdays, and Fridays, from the east end of the Burgh; and on Tuesdays, Thursdays, and Saturdays, from the west end. On Saturdays there is a general collection of rubbish. The whole work is carried out by a contractor employed by the Town Council, and the system gives general satisfaction. The whole of the rubbish is deposited in a coup near Rowhead Farm, about one mile outside the Burgh.

13 cases of *nuisances* were dealt with during the year. After due intimation they were removed. No legal proceedings were taken.

The *schools and workshops* were visited during the year, and found to be generally kept clean and sanitary.

The *slaughter-house* is a few yards outside the Burgh, and is included in the County Inspector's Report.

There are no *common lodging-houses* within the Burgh.

There are four persons registered as *cowkeepers and sellers of milk*. In the byres are kept 34 cows. 48 inspections were made during the year, and the cowsheds were found generally clean and tidy.

The *burial ground* is partly within and partly outside the Burgh. It is well kept. The grass is cut often, and the foot-walks are kept free of grass and weeds.

*Infectious Disease*.—Forty-three cases of infectious disease were notified during the year, an exceptionally large number for the Burgh, viz. :—38 scarlet fever, 3 erysipelas, and 2 pulmonary tuberculosis. In the month of January one boy caught scarlet fever, and was sent to hospital. No other case was reported until April, when a grown-up woman was infected. A period of two months elapsed, but in the beginning of June the disease again made its appearance, when a dozen children were laid up. The whole of the cases were of a very mild form. Inquiries were made, but nothing definite could be found out as to how it came into the Burgh, presumably from some unrecognised case. 24 patients were removed to the fever hospital at Carluke. No deaths occurred from the disease. Several visits were made to the houses infected, and all the bedding and houses disinfected, and notices served under Sections 50 and 53 of the Public Health Act, 1897.

There are 37 *workshops* within the Burgh. During the year 116 inspections were made at unstated intervals. The workshops were found on every occasion in a sanitary state.

There is only one house within the Burgh area that is in a ruinous state and not fit for habitation. It is at present empty, and will remain so until pulled down and rebuilt.

LEWIS COUTTS,  
*Sanitary Inspector.*

Biggar, January, 1913.

There are a number of sheets in this  
collection which are of the same  
size and shape as the others.

There is only one sheet which is  
of a different size and shape  
from the others.

THE END

THE END

STATE

PUBLIC HEALTH DEPARTMENT

UPPER WARD DISTRICT

UPPER WARD.

Annual Report for 1912.



S T A F F.  
PUBLIC HEALTH DEPARTMENT.  
UPPER WARD DISTRICT.

---

**County and District Medical Officer.**

JOHN T. WILSON, M.D., D.P.H.

**Tuberculosis Officer and Asst. M.O.H.**

JAMES R. ADAM, M.B., Ch.B., D.P.H.

**District Sanitary Inspector.**

WILLIAM PATERSON.

**Sanitary Inspector.**

JOHN S. ANDERSON.

---

**District Hospital Roadmeetings (26 beds), and Shelter (4 beds).**

Visiting Physician, - - - - ROBERT B. BARR, M.B., C.M.

Matron, - - - - Miss A. SCHERZER.

*November, 1913.*

## COUNTY OF LANARK.

## DISTRICT OF THE UPPER WARD.

## Report by the Medical Officer of Health

*FOR THE YEAR 1912.***I.—VITAL STATISTICS.**

The **Area** of the district at the close of the year was **327,013 acres**. The acreage of each parish and the population of each registration district are given in Table B.

The average density of population was 0·13 person to the acre.

The **Population** at the Decennial Census, 2nd April, 1911, was **42,978**, and at the middle of the year 1911 was estimated to be **43,043**. At the middle of the year 1912 it has also been estimated at **43,043**.

The number of inhabited houses according to the Valuation Roll, 1912-13, was **9,288**, and of unoccupied houses 302. As these figures show only an increase of 30 in the number of inhabited houses, it was considered undesirable to make any increase on the population given for 1911 in making up the vital statistics for the year 1912.

The following table shows the increase of population during the two last decennial periods from the excess of births over deaths, compared with the actual increase as ascertained at the decennial censuses :—

	Total Births.	Total Deaths.	Population.		
			Natural Increase.	Actual Increase.	Difference being Loss.
1891-1900	12,223	6,062	6,161	3,415	2,746
1901-1910	12,091	5,521	6,570	2,558	4,012

The decennial population for each parish or registration district, as ascertained at the last three censuses, 1891, 1901, and 1911, is given in the following table:—

PARISH OR REGISTRATION DISTRICT.*	CENSUS POPULATIONS.		
	1891.	1901.	1911.
Biggar, ... ..	546	531	605
Carluke, ... ..	8,058	8,966	9,619
Carmichael, ... ..	593	1,198	1,471
<i>Carnwath,</i> ... ..	3,798	3,052	3,741
<i>Forth,</i> ... ..	1,526	1,790	2,031
<i>Haywood,</i> ... ..	—	995	674
Carstairs, ... ..	1,977	1,893	1,878
Covington and Thankerton, ... ..	396	314	385
<i>Crawford,</i> ... ..	636	719	681
<i>Leadhills,</i> ... ..	998	895	839
Crawfordjohn, ... ..	789	707	617
Culter, ... ..	420	392	372
Dolphinton, ... ..	248	250	245
Douglas, ... ..	2,266	2,397	2,509
Dunsyre, ... ..	191	200	175
Lamington and Wandel, ... ..	305	362	271
Lanark, ... ..	2,531	3,019	3,078†
<i>Lesmahagow,</i> ... ..	9,752	9,608	10,641
<i>Kirkfieldbank,</i> ... ..		1,346	1,349
Libberton, ... ..	486	432	461
Pettinain, ... ..	259	271	261
Symington, ... ..	432	388	420
Walston, ... ..	301	283	255
Wiston and Robertson, ... ..	497	412	400
<b>District of the Upper Ward,</b> ... ..	<b>37,005</b>	<b>40,420</b>	<b>42,978</b>

The constitution of the population as regards age, sex, and conjugal conditions, as ascertained at the last census, is given in the county portion of this report, but may be summarised thus:—

	Males.	Females.	Both Sexes.
Single,	14,328	13,339	27,667
Married,	6,567	6,649	13,216
Widowed,	720	1,328	2,048
Not stated,	35	12	47
<b>Total,</b>	<b>21,650</b>	<b>21,328</b>	<b>42,978</b>

\* When there is more than one Registration District in a parish, the district bearing the name of the parish is put first, and all are printed in italics.

† By mutual agreement with the County Council an extension of the Burgh of Lanark to the extent of 214 acres, and containing 260 of a population, was arranged to take effect as from 1st August, 1908. The retention of this area would probably have added 300 to the census population.

The percentage proportion of the population at quinquennial age periods beginning with under five years and ending with ninety years and over, was as follows:—12·24, 12·28, 11·58, 10·10, 8·48, 7·63, 6·80, 6·25, 5·24, 4·69, 3·94, 3·19, 2·47, 2·16, 1·46, 0·81, 0·44, 0·15, 0·03. Not stated, 0·06.

**Statistical Tables.**—Table C, which in former years contained death-rates from certain causes of death during the whole period of County administration has been modified, and is now lettered A. It contains only birth-rates, death-rates from all causes, and infantile death-rates.

Table B now contains a largely extended list of causes of deaths, with no reference to age, while Tables B1 and B2 classify the deaths according to age groups. In Table B1 the age groups are related to the cause of death, and in Table B2 the age groups are related to the place of death—the parish or registration district.

**TABLE A.**—ANNUAL BIRTH-RATES AND DEATH-RATES PER 1,000 OF THE POPULATION. INFANTILE DEATHS PER 1,000 BIRTHS.

Year.	Births.	Birth-rate.	Nett. Deaths.	Death-rate.	Infants under 1 year.	
					Deaths.	Death-rate.
1891	1,231	33·2	681	18·3	133	108·0
1892	1,217	32·5	596	15·9	104	85·4
1893	1,231	32·6	619	16·3	125	101·5
1894	1,232	32·3	521	13·6	108	87·6
1895	1,194	31·0	669	17·4	138	111·3
1896	1,239	31·9	532	13·7	85	68·6
1897	1,285	32·8	554	14·1	126	98·0
1898	1,178	29·8	605	15·3	109	92·5
1899	1,130	28·3	632	15·8	112	99·1
1900	1,286	32·0	653	16·2	133	103·4
1891 to 1900	1,222	31·6	606	15·6	116	95·5
1901	1,299	32·1	598	14·8	113	86·9
1902	1,238	30·3	598	14·6	108	87·0
1903	1,171	28·4	549	13·3	103	87·9
1904	1,155	28·0	500	12·1	97	83·9
1905	1,123	27·2	560	13·5	107	95·2
1906	1,217	29·0	516	12·3	92	75·5
1907	1,201	28·5	548	13·0	95	79·1
1908	1,252	29·4	572	13·4	120	95·8
1909	1,260	29·3	547	12·7	117	92·8
1910	1,175	27·1	533	12·3	95	80·8
1901 to 1910	1,209	28·9	552	13·2	104	86·5
1911	1,213	28·1	526	12·2	93	76·6
1912	1,161	26·9	496	11·5	81	69·7

The **Births** registered amounted to **1,161**—males, 638; and females, 523. The birth-rate was **26·9** per thousand of the population, being the lowest birth-rate yet recorded, see Table A. The average annual birth-rates for the previous four quinquennial periods were as follows:—

1891-95.	1896-1900.	1901-05.	1906-10.
32·3	31·0	29·2	28·7

The **Deaths** registered amounted to **477**. After making corrections for deaths which occurred in institutions and in other districts, as shown in the following tables, the deaths of persons belonging to the district amounted to **496**, and gave a death-rate of **11·52** per thousand of the population. This is the lowest death-rate yet recorded during the whole period of County administration, see Table A. The average annual rate for the last two decennial periods was 15·6 and 13·2 respectively.

PUBLIC INSTITUTIONS SITUATED WITHIN THE DISTRICT WHERE SOME PERSONS NOT BELONGING TO THE DISTRICT DIED AND WHOSE DEATHS ARE EXCLUDED.

NAME OF INSTITUTION.	PARISH WHERE SITUATED.	POPULATION, POLICE CENSUS, DEC., 1912.	DEATHS.	
			Total during 1912.	Allocated to Upper Ward.
Lanark Poorhouse, ...	Lanark, -	66	14	8
Lanark Fever Hospital, ...	Do., -	18	1	...
Convalescent Home, ...	Do., -	27	2	...
Smyllum Orphanage, ...	Do., -	574	2	1
Bellefield Sanatorium, ...	Do., -	60	1	...
Douglas Cottage Hospital and Sanatorium,	Douglas, -	13	5	3
District Hospital, ...	Carlisle, -	38	3	3
Carlisle Poorhouse, ...	Do., -	7	1	1
Parochial Lodging-house,	Lesmahagow,	9	...	...
TOTAL, ... ..	...	812	29	16



No.	Name of Institution	Population		Total	Percentage of Total
		Male	Female		
1	...	...	...	...	...
2	...	...	...	...	...
3	...	...	...	...	...
4	...	...	...	...	...
5	...	...	...	...	...
6	...	...	...	...	...
7	...	...	...	...	...
8	...	...	...	...	...
9	...	...	...	...	...
10	...	...	...	...	...
11	...	...	...	...	...
12	...	...	...	...	...
13	...	...	...	...	...
14	...	...	...	...	...
15	...	...	...	...	...
16	...	...	...	...	...
17	...	...	...	...	...
18	...	...	...	...	...
19	...	...	...	...	...
20	...	...	...	...	...
21	...	...	...	...	...
22	...	...	...	...	...
23	...	...	...	...	...
24	...	...	...	...	...
25	...	...	...	...	...
26	...	...	...	...	...
27	...	...	...	...	...
28	...	...	...	...	...
29	...	...	...	...	...
30	...	...	...	...	...
31	...	...	...	...	...
32	...	...	...	...	...
33	...	...	...	...	...
34	...	...	...	...	...
35	...	...	...	...	...
36	...	...	...	...	...
37	...	...	...	...	...
38	...	...	...	...	...
39	...	...	...	...	...
40	...	...	...	...	...
41	...	...	...	...	...
42	...	...	...	...	...
43	...	...	...	...	...
44	...	...	...	...	...
45	...	...	...	...	...
46	...	...	...	...	...
47	...	...	...	...	...
48	...	...	...	...	...
49	...	...	...	...	...
50	...	...	...	...	...
51	...	...	...	...	...
52	...	...	...	...	...
53	...	...	...	...	...
54	...	...	...	...	...
55	...	...	...	...	...
56	...	...	...	...	...
57	...	...	...	...	...
58	...	...	...	...	...
59	...	...	...	...	...
60	...	...	...	...	...
61	...	...	...	...	...
62	...	...	...	...	...
63	...	...	...	...	...
64	...	...	...	...	...
65	...	...	...	...	...
66	...	...	...	...	...
67	...	...	...	...	...
68	...	...	...	...	...
69	...	...	...	...	...
70	...	...	...	...	...
71	...	...	...	...	...
72	...	...	...	...	...
73	...	...	...	...	...
74	...	...	...	...	...
75	...	...	...	...	...
76	...	...	...	...	...
77	...	...	...	...	...
78	...	...	...	...	...
79	...	...	...	...	...
80	...	...	...	...	...
81	...	...	...	...	...
82	...	...	...	...	...
83	...	...	...	...	...
84	...	...	...	...	...
85	...	...	...	...	...
86	...	...	...	...	...
87	...	...	...	...	...
88	...	...	...	...	...
89	...	...	...	...	...
90	...	...	...	...	...
91	...	...	...	...	...
92	...	...	...	...	...
93	...	...	...	...	...
94	...	...	...	...	...
95	...	...	...	...	...
96	...	...	...	...	...
97	...	...	...	...	...
98	...	...	...	...	...
99	...	...	...	...	...
100	...	...	...	...	...

TABLE B1.—UPPER WARD.—Year 1912.—Deaths classified according to cause and age periods, and corrected for Institutions, &c.

92B1

Population, 43,043. Acreage, 327,013. Registered Births, { Legitimate, M., 580; F., 496; } Deaths under 1 year, { Legitimate, 74. }  
 { Illegitimate, M., 58; F., 27; } Total, 1,161. { Illegitimate, 7. }

CAUSE OF DEATH.	Registered in District.	Transferred from other Districts.	Transferred to other Districts.	Nett Deaths.	NETT DEATHS AT DIFFERENT AGE PERIODS.															Rates per 1,000 Population.	Registered in Institutions in Districts.		
					Weeks.					Months.					Years.								
					-1	1-2	2-3	3-4	Total -4	1-3	3-6	6-9	9-12	Total -12	1-2	2-5	5-15	15-25	25-45			45-65	65 and over
All Causes { Certified, - } { Uncertified, - }	477 ...	48 ...	29 ...	496 ...	21	5	7	5	38	12	11	10	10	81	23	17	18	28	58	104	167	11.52	29
Enteric Fever, - - -	1	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	0.05	1
Typhus Fever, - - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox, - - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chickenpox, - - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles, - - -	3	1	...	4	...	...	...	...	...	...	...	1	1	2	...	2	...	...	...	...	...	0.09	...
Scarlet Fever, - - -	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	0.02	...
Whooping Cough, - - -	6	...	...	6	...	...	...	...	...	1	2	...	1	4	...	2	...	...	...	...	...	0.14	...
Diphtheria, - - -	4	...	1	3	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	0.07	1
Influenza, - - -	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	0.05	...
Erysipelas, - - -	4	...	...	4	...	...	1	1	...	...	...	...	1	...	...	...	1	...	...	2	...	0.10	...
Other Septic Diseases, - - -	5	...	...	5	...	...	...	...	...	...	...	1	1	1	...	...	...	1	1	1	1	0.12	...
Puerperal Fever, - - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-Spinal Fever, - - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis, - - -	35	...	8	27	...	...	...	...	...	...	...	...	...	...	...	...	8	15	4	...	...	0.63	7
Meningeal Tuberculosis, - - -	5	1	...	6	...	...	...	...	...	2	...	...	2	1	1	2	...	...	...	...	...	0.14	...
Abdominal Tuberculosis, - - -	6	3	1	8	...	...	...	...	...	...	...	...	...	1	2	1	2	1	...	1	...	0.18	...
Other Tuberculosis, - - -	3	...	...	3	...	...	...	...	...	...	...	...	...	1	...	1	1	...	...	...	...	0.07	...
Malignant Diseases, - - -	39	4	2	41	...	...	...	...	...	...	...	...	...	...	...	...	3	17	21	...	...	0.95	2
Rheumatic Fever, - - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meningitis (Simple), - - -	2	...	...	2	...	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	0.05	...
Cerebral Haemorrhage, - - -	31	2	2	31	...	...	...	...	...	...	...	...	...	...	...	...	2	6	23	...	...	0.72	1
Convulsions, - - -	6	...	...	6	...	1	...	1	1	...	1	...	3	3	...	...	...	...	...	...	...	0.14	...
Other Nervous Diseases, - - -	10	3	1	12	...	...	...	...	...	...	...	...	...	...	...	1	1	5	5	...	...	0.28	2
Circulatory Diseases, - - -	69	8	6	71	...	...	...	...	...	...	...	...	...	...	1	2	9	18	41	...	...	1.64	8
Pneumonia, - - -	41	2	...	43	...	2	1	3	2	2	3	3	13	6	2	3	2	2	6	9	...	1.00	2
Bronchitis, - - -	22	1	...	23	...	...	...	...	...	1	...	...	2	1	3	1	...	...	7	9	...	0.53	...
Laryngitis, - - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Respiratory Diseases, - - -	6	...	1	5	...	...	...	...	...	1	...	...	1	...	1	...	...	3	...	...	...	0.12	...
Diarrhoea, - - -	11	2	...	13	...	1	1	...	2	2	2	7	4	...	...	...	...	...	2	...	...	0.30	...
Other Digestive Diseases, - - -	20	3	1	22	...	...	...	...	...	1	1	...	2	...	2	...	5	9	4	...	...	0.51	1
Violence, - - -	18	10	2	26	...	...	...	...	...	1	...	1	2	2	2	1	2	8	9	...	...	0.60	...
Congenital Malformations, - - -	4	...	...	4	1	1	...	2	...	...	...	2	...	1	1	...	...	...	...	...	...	0.10	...
Premature Birth, - - -	12	...	...	12	7	2	1	1	11	1	...	...	12	...	...	...	...	...	...	...	...	0.28	...
Atrophy, Debility, &c., - - -	21	...	...	21	12	2	3	1	18	3	...	...	21	...	...	...	...	...	...	...	...	0.49	...
Atelectasis, - - -	1	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	0.02	...
Injury at Birth, - - -	1	...	...	1	1	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	0.02	...
Suffocation, Overlying, - - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syphilis, - - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rickets, - - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Defined Diseases, - - -	85	7	4	88	...	...	...	...	...	1	...	1	3	2	...	1	9	9	15	49	...	2.04	4
Ill-defined Diseases, - - -	3	...	...	3	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1	...	...	0.07	...
Total, - - -	477	48	29	496	21	5	7	5	38	12	11	10	10	81	23	17	18	28	58	104	167	11.52	29



Winding No.	Winding Name	Winding Type	Winding Material	Winding Length	Winding Area	Winding Volume	Winding Weight
1	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...
3	...	...	...	...	...	...	...
4	...	...	...	...	...	...	...
5	...	...	...	...	...	...	...
6	...	...	...	...	...	...	...
7	...	...	...	...	...	...	...
8	...	...	...	...	...	...	...
9	...	...	...	...	...	...	...
10	...	...	...	...	...	...	...
11	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...
13	...	...	...	...	...	...	...
14	...	...	...	...	...	...	...
15	...	...	...	...	...	...	...
16	...	...	...	...	...	...	...
17	...	...	...	...	...	...	...
18	...	...	...	...	...	...	...
19	...	...	...	...	...	...	...
20	...	...	...	...	...	...	...
21	...	...	...	...	...	...	...
22	...	...	...	...	...	...	...
23	...	...	...	...	...	...	...
24	...	...	...	...	...	...	...
25	...	...	...	...	...	...	...
26	...	...	...	...	...	...	...
27	...	...	...	...	...	...	...
28	...	...	...	...	...	...	...
29	...	...	...	...	...	...	...
30	...	...	...	...	...	...	...
31	...	...	...	...	...	...	...
32	...	...	...	...	...	...	...
33	...	...	...	...	...	...	...
34	...	...	...	...	...	...	...
35	...	...	...	...	...	...	...
36	...	...	...	...	...	...	...
37	...	...	...	...	...	...	...
38	...	...	...	...	...	...	...
39	...	...	...	...	...	...	...
40	...	...	...	...	...	...	...
41	...	...	...	...	...	...	...
42	...	...	...	...	...	...	...
43	...	...	...	...	...	...	...
44	...	...	...	...	...	...	...
45	...	...	...	...	...	...	...
46	...	...	...	...	...	...	...
47	...	...	...	...	...	...	...
48	...	...	...	...	...	...	...
49	...	...	...	...	...	...	...
50	...	...	...	...	...	...	...
51	...	...	...	...	...	...	...
52	...	...	...	...	...	...	...
53	...	...	...	...	...	...	...
54	...	...	...	...	...	...	...
55	...	...	...	...	...	...	...
56	...	...	...	...	...	...	...
57	...	...	...	...	...	...	...
58	...	...	...	...	...	...	...
59	...	...	...	...	...	...	...
60	...	...	...	...	...	...	...
61	...	...	...	...	...	...	...
62	...	...	...	...	...	...	...
63	...	...	...	...	...	...	...
64	...	...	...	...	...	...	...
65	...	...	...	...	...	...	...
66	...	...	...	...	...	...	...
67	...	...	...	...	...	...	...
68	...	...	...	...	...	...	...
69	...	...	...	...	...	...	...
70	...	...	...	...	...	...	...
71	...	...	...	...	...	...	...
72	...	...	...	...	...	...	...
73	...	...	...	...	...	...	...
74	...	...	...	...	...	...	...
75	...	...	...	...	...	...	...
76	...	...	...	...	...	...	...
77	...	...	...	...	...	...	...
78	...	...	...	...	...	...	...
79	...	...	...	...	...	...	...
80	...	...	...	...	...	...	...
81	...	...	...	...	...	...	...
82	...	...	...	...	...	...	...
83	...	...	...	...	...	...	...
84	...	...	...	...	...	...	...
85	...	...	...	...	...	...	...
86	...	...	...	...	...	...	...
87	...	...	...	...	...	...	...
88	...	...	...	...	...	...	...
89	...	...	...	...	...	...	...
90	...	...	...	...	...	...	...
91	...	...	...	...	...	...	...
92	...	...	...	...	...	...	...
93	...	...	...	...	...	...	...
94	...	...	...	...	...	...	...
95	...	...	...	...	...	...	...
96	...	...	...	...	...	...	...
97	...	...	...	...	...	...	...
98	...	...	...	...	...	...	...
99	...	...	...	...	...	...	...
100	...	...	...	...	...	...	...

TABLE B<sup>2</sup>.—UPPER WARD.—Year 1912.—Births and Deaths in each Parish or Registration District. 92B2  
Deaths classified according to age periods, and corrected for Institutions, &c.

REGISTRATION DISTRICTS.	Registered Births.	Nett Deaths.	DEATHS AT DIFFERENT AGE PERIODS.																	
			Weeks.					Months.					Years.							
			-1	1-2	2-3	3-4	Total -4	1-3	3-6	6-9	9-12	Total -12	1-2	2-5	5-15	15-25	25-45	45-65	65 and over.	
Biggar, - - - -	12	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1
Carluke, - - - -	257	115	2	2	2	2	8	3	4	1	3	19	7	3	5	8	11	25	37	
Carmichael, - - -	33	12	...	...	...	...	...	...	...	...	...	...	...	1	1	2	2	2	4	
Carnwath, - - - -	118	49	3	...	1	...	4	...	3	1	3	11	3	3	...	...	7	10	15	
<i>Forth,</i> - - - -	64	22	3	...	1	...	4	...	...	...	...	4	1	2	...	1	1	7	6	
<i>Haywood,</i> - - -	27	7	1	1	...	...	2	...	...	...	...	2	1	1	1	1	...	...	1	
Carstairs, - - - -	40	23	...	1	...	1	2	1	1	1	...	5	...	1	1	2	3	7	4	
Covington, &c., - -	5	5	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	2	2	
Crawford, - - - -	19	6	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	4	
<i>Leadhills,</i> - - -	14	20	1	...	...	1	2	...	...	...	...	2	...	...	...	2	3	6	7	
Crawfordjohn, - - -	22	6	...	...	...	...	...	...	1	...	...	1	...	...	...	...	1	2	2	
Culter, - - - -	4	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	2	
Dolphinton, - - - -	6	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	
Douglas, - - - -	53	27	1	...	...	...	1	...	...	2	...	3	...	...	2	1	1	4	16	
Dunsyre, - - - -	5	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Lamington, &c., - -	11	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	3	
Lanark, - - - -	66	29	1	...	...	1	2	1	...	1	...	4	1	1	2	1	3	4	13	
Lesmahagow, - - -	340	118	8	...	2	...	10	6	2	3	3	24	8	4	6	6	16	22	32	
<i>Kirkfieldbank,</i> - -	31	26	...	...	...	...	...	...	...	1	...	1	2	...	...	3	3	5	12	
Libberton, - - - -	9	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	
Pettinain, - - - -	4	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	
Symington, - - - -	7	4	...	1	1	...	2	...	...	...	...	2	...	...	...	...	...	2	...	
Walston, - - - -	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Wiston, &c., - - -	11	3	1	...	...	...	1	1	...	...	...	2	...	...	...	...	...	...	1	
Total, - - - -	1,161	496	21	5	7	5	38	12	11	10	10	81	23	17	18	28	58	104	167	



PUBLIC INSTITUTIONS SITUATED OUTWITH THE DISTRICT WHERE SOME PERSONS BELONGING TO THE DISTRICT DIED AND WHOSE DEATHS ARE INCLUDED.

Glasgow Hospitals, &c.,	-	-	-	-	11 Deaths.
Edinburgh ,,	-	-	-	-	10 ,,
Other Institutions,	-	-	-	-	13 ,,
					—
Total,	-	-	-	-	34 ,,

The foregoing tables show that of 29 deaths occurring in institutions within the district 13 were excluded, as they were persons not belonging to the Upper Ward; on the other hand 34 deaths were included, as they were persons belonging to the Upper Ward, who died in institutions outwith the district. For the same reasons 16 deaths were excluded of persons dying in private residences and elsewhere, and 14 deaths were included.

DEATHS IN RELATION TO AGE AND CAUSE.—The deaths are classified in Table B1 according to age and cause. The deaths are here arranged in recognised age periods, and the percentage proportion of deaths at each period given.

Infant Period—Under 1 year,	...	...	81 deaths or 16·3 per cent.
Under School Age—1-5 years,	...	...	40 ,, 8·1 ,,
School Age—5-15 years,	...	...	18 ,, 3·6 ,,
Adolescence—15-25 years,	...	...	28 ,, 5·6 ,,
Early Mature Period—25-45 years,	...	...	58 ,, 11·7 ,,
Late Mature Period—45-65 years,	...	...	104 ,, 21·0 ,,
Post Mature Period—65 years and upwards,	167	...	33·7 ,,

The population at each of these age periods, except the infant period, has been obtained from the Registrar-General, so that the actual death-rates for each age period can now be given. This is now published in Vol. II. of Census Report, page 253.

POPULATION, DEATHS, AND DEATH-RATES AT AGE PERIODS.

	Under 5.	5-15.	15-25.	25-45.	45-65.	Over 65.
Population (Census, 1911), ...	5,262	10,253	7,985	11,141	6,142	2,195
Deaths (year 1912), ...	121	18	28	58	104	167
Death-rate per 1,000 of the population, ...	23·00	1·75	3·50	5·20	16·93	76·08

The high death-rates at the extremes of life and the very low rate during the school age period are clearly shown. The infant death-rate can only be calculated in relation to the number of births.

INFANT PERIOD.—The infant death-rate for each year since 1891 is given in Table A. The average annual rate for the last two decennial periods was 95·5 and 86·5 per 1,000 births. For the year 1912 the rate was only 69·7, which is the lowest infant death-rate on record. Of the 81 deaths recorded, 38 took place during the first month and 12 during the next two months, making 50 deaths of children under 3 months.

INFANT DEATHS CLASSIFIED IN GROUPS ACCORDING TO CAUSE. NUMBER IN EACH GROUP COMPARED WITH THAT FOR THE PRECEDING YEAR.

	1912.	1911.
1. Premature Births, 12; Congenital Malformations, 2; Atelectasis, 1; Injury at Birth, 1, - - -	16	20
2. Diarrhœa, 7; Other Digestive Diseases, 2; Atrophy, Debility, and Marasmus, 21; - - - -	30	38
3. Pneumonia, 13; Bronchitis, 2; Laryngitis, 1, - - -	16	11
4. Tuberculosis—Meningeal, 2, - - - -	2	4
5. Meningitis, 1; Convulsions, 3, - - - -	4	6
6. Measles, 2; Whooping Cough, 4; Erysipelas, 1; Other Septic Diseases, 1, - - - -	8	8
7. Violence, 2, - - - -	2	1
8. Other Causes, 3, - - - -	3	5
Total, - - - -	81	93

INFECTIOUS DISEASES.—The number of deaths due to infectious diseases, which are compulsorily notifiable, was 37, made up as follows:—

Diphtheria, ... ..	3
Scarlet fever, ... ..	1
Typhoid Fever, ... ..	2
Cerebro-spinal fever, ... ..	—
Puerperal fever, ... ..	—
Erysipelas, ... ..	4
Pulmonary tuberculosis, ... ..	27

The deaths from infectious diseases, not compulsorily notifiable, amounted to 23, made up thus:—Measles, 4; whooping-cough, 6; and diarrhœa, 13.

These diseases are all discussed under a separate heading in part II. of this report.

RESPIRATORY DISEASES.—The group of diseases under the heading respiratory, has varied from time to time. In the years preceding 1906 this group included deaths from pneumonia and from influenza with

respiratory symptoms. Since the year 1906 these two causes of death have been given a separate column in Table B. Since 1911 bronchitis has also been given a separate heading. This change in the classification is indicated in the following tabular statement:—

## OLD CLASSIFICATION.

## ALL RESPIRATORY DEATHS.

Year.	Deaths.	Death-rate.	Year.	Deaths.	Death-rate.	Year.	Deaths.	Death-rate.
1891	—	—	1896	91	2·34	1901	73	1·80
1892	112	2·99	1897	108	2·76	1902	91	2·22
1893	89	2·35	1898	117	2·96	1903	82	1·98
1894	76	1·99	1899	98	2·46	1904	79	1·91
1895	129	3·35	1900	125	3·11	1905	109	2·64

## NEW CLASSIFICATION.

Year.	Pneumonia		Bronchitis.		Influenza.		Other Respiratory Diseases.	
	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.
1906	22	0·52	—	—	3	0·07	43	1·02
1907	22	0·52	—	—	6	0·14	56	1·33
1908	19	0·44	—	—	5	0·11	60	1·41
1909	39	0·90	—	—	7	0·16	44	1·02
1910	44	1·01	—	—	5	0·11	47	1·08
1911	35	0·81	26	0·60	—	—	—	0·11
1912	43	1·00	23	0·53	2	0·05	5	0·12

PNEUMONIA.—Deaths from this disease have been classified separately since the year 1906. Deaths from broncho-pneumonia were, up till 1908, included in the general respiratory group, and since 1909 they have been included under the heading "Pneumonia."

43 deaths occurred during the year 1912—29 of these being in the populous parishes of Lesmahagow and Carluke. Classified according to age the deaths were as follows:—

Under 1	1-2	2-5	5-15	15-25	25-45	45-65	65 and upwards.
13	6	2	3	2	2	6	9

BRONCHITIS.—Up to the year 1911 deaths from this disease were included under the general respiratory heading. 23 deaths occurred during the year, giving a death-rate of 0·53 per thousand of the population. 14 of these deaths occurred in the Carluke and Lesmahagow parishes. Classified according to age, the deaths were as follow:—

Under 1	1-2	2-5	5-15	45-65	65 and upwards.
2	1	3	1	7	9

INFLUENZA.—Deaths from this disease have been classified separately since the year 1906. 2 deaths occurred during the year, one a person aged 45 years and the other aged 84 years.

OTHER RESPIRATORY DISEASES—including asthma, congestion of the lungs, and acute croup—caused 5 deaths. Classified according to age, one was under 1 year, one 5 to 15, and three 45 to 65 years.

MALIGNANT DISEASES.—This group includes deaths from diseases certified as cancer, carcinoma, sarcoma, &c. The proportions so certified are, roughly, about 50 per cent. cancer, 40 per cent. carcinoma, and 10 per cent. other forms. The average annual number of deaths from these diseases has been gradually increasing. Thus, for the quinquennial period, 1891-95, the death-rate per 10,000 of the population was 4·7, for 1896-1900 it was 6·2, for 1901-05 it was 7·7, and for 1906-10 was 7·2. During 1912 the death-rate amounted to 9·5, as compared with 8·1 in 1911. Classified according to age, the deaths were as follows:—Three between 25 and 45, seventeen between 45 and 65, and twenty-one over 65 years of age.

MALIGNANT DISEASE IN EACH REGISTRATION DISTRICT OF THE UPPER WARD. — AVERAGE ANNUAL NUMBER OF DEATHS FOR QUINQUENNIAL PERIODS OF 1891-1910 AND FOR EACH OF THE YEARS 1911 AND 1912; ALSO, THE AVERAGE ANNUAL DEATH-RATE FOR SAME PERIODS IN THE UPPER WARD.

Registration District..	1891-1895.	1896-1900.	1901-1905.	1906-1910.	1911.	1912.
Biggar, - - - - -	0·2	0·4	1·4	1·2	2	...
Carluke, - - - - -	4·0	6·8	6·8	6·6	8	8
Carmichael, - - - - -	0·6	0·2	0·8	1·2	1	2
<i>Carnwath,</i> - - - - -	2·2	2·4	2·8	2·8	2	3
<i>Forth,</i> - - - - -	0·8	0·2	1·0	0·8	1	4
<i>Haywood,</i> - - - - -	...	0·2	0·6	0·4	...	...
Carstairs, - - - - -	1·2	0·6	2·4	2·2	2	2
Covington, &c., - - - - -	0·4	0·4	0·4	0·2	1	...
<i>Crawford,</i> - - - - -	0·2	0·6	1·0	1·4	...	2
<i>Leadhills,</i> - - - - -	0·2	1·0	0·6	0·6	...	2
Crawfordjohn, - - - - -	0·2	0·4	0·8	0·6	3	1
Culter, - - - - -	0·4	0·2	0·2	0·6	1	...
Dolphinton, - - - - -	0·4	0·4	0·4	...	1	1
Douglas, - - - - -	0·8	2·0	2·6	2·4	3	2
Dunsyre, - - - - -	0·2	...	...	0·4	1	...
Lamington, &c., - - - - -	0·2	...	0·6	...	...	...
Lanark, - - - - -	1·8	1·6	0·6	1·2	2	3
<i>Lesmahagow,</i> - - - - -	3·6	4·8	6·2	5·4	6	9
<i>Kirkfieldbank,</i> - - - - -	0·2	1·0	1·0	0·8	1	1
Libberton, - - - - -	...	0·6	...	0·2	...	...
Pettinain, - - - - -	...	...	0·6	0·2	...	1
Symington, - - - - -	0·4	0·2	0·4	0·6	...	...
Walston, - - - - -	...	0·2	...	0·6	...	...
Wiston, &c., - - - - -	...	0·6	0·4	0·6	...	...
Upper Ward District, - - - - -	18·0	24·8	31·6	31·0	35	41
Average Annual Death-rate per 10,000 of the Popula- tion, - - - - -	4·76	6·28	7·70	7·29	8·13	9·52



## II.—PREVALENCE OF INFECTIOUS DISEASE.

Diseases compulsorily notifiable include cerebro-spinal fever and pulmonary phthisis. The former was made notifiable in October, 1906, for an unlimited period, while the latter was made notifiable as from 1st January, 1908, for a period of five years. Each notifiable disease will be dealt with under a separate heading, but reference should be made to the statistical tables. The following Table E shows, for each disease, the number of cases recognised during 1912, classified according to parish. Excluding pulmonary phthisis, or consumption, the total number of cases in the district amounted to 367, and the total deaths to 10—the latter are given in detail in Table B.

TABLE E.—NUMBER OF CASES OF NOTIFIABLE INFECTIOUS DISEASE IN EACH PARISH DURING 1912.

PARISH.	Diphtheria.	Scarlet Fever.	Typhus Fever.	Typhoid Fever.	Cerebro-Spinal Fever.	Phthisis.	Erysipelas.	Puerperal Fever.	TOTAL.
1. Biggar, - - -	...	8	...	...	...	1	...	...	9
2. Carluke, - - -	7	22	...	1	...	7	18	...	55
3. Carmichael, - - -	7	...	...	1	...	2	2	...	12
4. Carnwath, - - -	5	31	...	...	...	5	5	...	46
5. Carstairs, - - -	3	41	...	...	...	3	2	...	49
6. Covington, &c., - - -	...	...	...	...	...	...	1	...	1
7. Crawford, - - -	...	...	...	...	...	2	2	...	4
8. Crawfordjohn, - - -	1	...	...	...	...	...	1	...	2
9. Culter, - - -	...	1	...	...	...	...	...	...	1
10. Dolphinton, - - -	...	1	...	...	...	1	...	...	2
11. Douglas, - - -	32	22	...	...	...	5	1	...	60
12. Dunsyre, - - -	...	9	...	...	...	...	...	...	9
13. Lamington and Wandel, - - -	...	...	...	...	...	1	...	...	1
14. Lanark, - - -	10	7	...	...	...	10	5	...	32
15. Lesmahagow, - - -	44	42	...	5	...	14	20	1	126
16. Libberton, - - -	...	...	...	...	...	1	1	...	2
17. Pettinain, - - -	...	...	...	...	...	...	...	...	...
18. Symington, - - -	1	...	...	...	...	...	1	...	2
19. Walston, - - -	...	...	...	...	...	...	1	...	1
20. Wiston and Robertson, - - -	...	5	...	...	...	...	...	...	5
<i>Total for year 1912,</i> -	110	189	...	7	...	52	60	1	419
<i>Total for year 1911,</i> -	84	144	...	9	...	58	51	...	346
<i>Deaths in 1912,</i> -	3	1	...	2	...	27	4	...	37

A series of tables lettered D, with a distinctive number for each disease, will be found throughout the report. These tables show, for the whole period of compulsory notification, not only the cases and deaths, but also the rates calculated therefrom.

### Smallpox.

No cases occurred in any part of the district, but the following Table D1 shows the prevalence in previous years, and that the last case of smallpox occurred in the year 1904 :—

TABLE D1.—SMALLPOX.

YEAR.	NUMBERS.		YEAR.	NUMBERS.	
	Cases.	Deaths.		Cases.	Deaths.
(1)	(2)	(3)	(1)	(2)	(3)
1892	...	...	1903	2	...
1893	...	...	1904	16	...
1894	...	...	1905	...	3
1895	1	...	<i>Average,</i>	<i>6·2</i>	...
<i>Average,</i>	...	...	1906	...	<i>0·8</i>
1896	...	...	1907	...	...
1897	...	...	1908	...	...
1898	...	...	1909	...	...
1899	...	...	1910	...	...
1900	3	...	<i>Average,</i>	...	...
<i>Average,</i>	...	...	1911	...	...
1901	3	1	1912	...	...
1902	10	...	...	...	...

*The Vaccination (Scotland) Act, 1907*, which provides for returns of statutory declarations of conscientious objection to vaccination, came into operation on the 28th August of that year. Forms were prepared, duly approved by the Local Government Board, and issued to registrars during the month of December, 1907. The returns received since that date are of considerable interest, and may be tabulated as follows :—

Registration District.	Dec., 1907.	No. of Declarations.					Registration District.	Dec., 1907.	No. of Declarations.				
		1908.	1909.	1910.	1911.	1912.			1908.	1909.	1910.	1911.	1912.
Biggar, ...	—	—	—	1	—	2	Douglas, ...	—	5	3	6	3	7
Carluke, ...	11	42	68	77	74	99	Dunsyre, ...	—	—	—	—	—	1
Carmichael, ...	—	24	8	14	13	13	Lamington and Wandel, ...	—	—	—	—	—	—
Carnwath, ...	3	7	10	4	—	20	Lanark, ...	—	2	8	9	17	16
Forth, ...	12	36	37	34	38	39	Lesmahagow, ...	16	43	60	59	85	86
Haywood, ...	2	4	7	11	11	14	Kirkfieldbank, ...	1	1	2	5	6	3
Carstairs, ...	1	5	5	5	4	8	Libberton, ...	—	—	—	—	—	1
Covington and Thankerton, ...	—	1	—	1	1	2	Pettinain, ...	—	—	1	—	—	1
Crawford, ...	1	4	2	—	4	5	Symington, ...	—	—	—	—	1	—
Leadhills, ...	—	—	—	—	—	—	Walston, ...	—	—	—	—	—	—
Crawfordjohn, ...	1	—	2	3	2	4	Wiston and Roberton, ...	—	—	—	1	—	—
Culter, ...	—	—	—	1	—	—							
Dolphinton, ...	—	—	—	—	1	—	Totals,	48	174	213	231	260	321

The proportion of unvaccinated children has risen steadily since the Vaccination (Scotland) Act, 1907, became law, and there must now be over 1,000 unvaccinated children in the Upper Ward. The declarations in 1912 amounted to 321, and, comparing these with the number of births registered in the district, the percentage of the unvaccinated children may be estimated. The proportion of statutory declarations for the whole Ward was 27·6 per cent. of the total births. The largest proportion of statutory declarations occurred in the registration districts of Haywood and Forth, where the population is largely engaged in mining. The percentages were—Forth, 60·9; Haywood, 51·8; Lanark, 24·2; Carluke, 38·5; Lesmahagow, 25·2; Carmichael, 39·2; and Crawfordjohn, 18·1.

#### Diphtheria and Membranous Croup.

Cases, 110; deaths, 3; fatality, 2·7 per cent.

The age-incidence of cases and deaths was as follows:—

	Ages—1	1-2	2-5	5-15	15-25	25-45	45-65	Total.
Cases,	—	2	22	66	15	4	1	110
Deaths,	—	—	1	2	—	—	—	3

Table D2 shows the annual prevalence of diphtheria since 1892. The figures given are not strictly comparable, owing to the large amount of throat-swabbing which was done during 1907 and 1908, for the purpose of detecting carriers of infection. The death-rate given in column 3 is a better index of the existence of diphtheria, but here again the mortality has probably been reduced by prompt treatment with anti-toxin. The number of cases notified shows an increase of 26 on the preceding year. This is accounted for by epidemics in Douglas, Lanark, and Lesmahagow parishes. These epidemics will be dealt with in detail later.

TABLE D2.—DIPHTHERIA AND MEMBRANOUS CROUP.

YEAR.	NUMBERS.		RATES.		
	Cases.	Deaths.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	101	22	21·7	2·6	5·8
1893	88	14	15·9	2·3	3·7
1894	60	11	18·3	1·5	2·8
1895	65	9	13·8	1·6	2·3
<i>Average</i>	<i>78·5</i>	<i>14·0</i>	<i>17·8</i>	<i>2·0</i>	<i>3·69</i>
1896	106	8	7·5	2·7	2·0
1897	75	1	1·3	1·9	0·2
1898	77	7	9·0	1·9	1·7
1899	84	4	4·7	2·1	1·0
1900	102	9	8·8	2·5	2·2
<i>Average</i>	<i>88·8</i>	<i>5·8</i>	<i>6·53</i>	<i>2·2</i>	<i>1·46</i>
1901	63	7	11·1	1·5	1·7
1902	83	11	13·2	2·0	2·6
1903	78	4	5·1	1·8	0·9
1904	48	5	10·4	1·1	1·2
1905	57	7	12·2	1·3	1·6
<i>Average</i>	<i>65·8</i>	<i>6·8</i>	<i>10·3</i>	<i>1·60</i>	<i>1·6</i>
1906	111	10	9·0	2·6	2·3
1907	251	10	3·9	5·9	2·3
1908	226	10	4·4	5·3	2·3
1909	135	6	4·4	3·1	1·3
1910	56	1	1·7	1·3	0·2
<i>Average</i>	<i>155·8</i>	<i>7·4</i>	<i>4·75</i>	<i>3·66</i>	<i>1·74</i>
1911	84	4	4·76	1·95	0·9
1912	110	3	2·7	2·5	0·7

The number of swabs received for bacteriological examination from medical practitioners during the year was 191. Of these, 76 gave a positive and 115 a negative result. All the positive swabs, as well as 9 of the negative swabs, were notified.

The removals to hospital numbered 48, or 43·6 per cent. of the total cases. Anti-toxin was administered in 21 cases before removal to hospital, but of the 63 cases treated at home only 25 are known to have had anti-toxin administered. As the efficacy of anti-toxin treatment depends on its early use, more could be hoped for in this direction.

The incidence of the disease in each parish and the sources of infection, so far as discovered, will now be considered.

**Carlisle.**—7 cases, distributed as follows:—Carlisle, 6; Law, 1. Most of these cases occurred in the early part of the year, and did not seem in any way directly associated, except in one family, where 2 cases occurred.

**Carmichael.**—7 cases, all at Douglas Water. Most of these cases occurred in the last two months of the year, and were mainly children attending Douglas Water Public School, where the headmaster's daughter, who attended Lanark Grammar School, was among the sufferers. A visit was made by the Asst. Medical Officer of Health on 29th October, when most of the scholars were examined, and several found with suspicious sore throat and a history of illness. 28 swabs were taken, of which no fewer than 5 were found with diphtheria bacilli, and 1 gave the pseudo form. These children were excluded from school, but after a time were allowed to return without any further swabs being taken.

**Carnwath.**—5 cases, distributed as follows:—Carnwath, 2; and Tarbrax, 3. The cases at Tarbrax seemed to be associated with the discharge of a patient from one of the Glasgow Fever Hospitals, who was sent to Tarbrax for a change of air.

**Carstairs.**—3 cases, distributed as follows:—At the Junction, 2; and the Village, 1. 2 of the cases occurred in the month of January, and 1 in July, and did not seem to be associated.

**Crawfordjohn.**—1 case occurred in the month of March, but no evidence as to the source of infection was discovered.

**Douglas.**—32 cases, distributed as follows:—Douglas, 25; Carmacoupfoot, 1; Uddington, 2; Newtonfoot, 1; and Rigside, 3. The outbreak in Douglas assumed an epidemic form towards the beginning of October. A visit was paid by the Asst. Medical Officer of Health on 18th October, when the scholars were examined in the school. Swabs were taken from 20 of the scholars, and 4 of them gave

typical diphtheria bacilli, and 1 the pseudo form. 30 of the scholars, who were suffering from sore throat, were excluded from school for a time. On 29th October it was agreed to close the school for a few days for the purpose of disinfection. The prevalence of the disease in this parish was undoubtedly due to the existence of unrecognised mild types of the disease.

**Lanark Parish.**—10 cases, 2 deaths. The cases were distributed thus:—New Lanark, 7; and Charleston, 3. The cases occurred in the latter part of the year. A visit was made to New Lanark Public School on 10th October by the Asst. Medical Officer of Health, and all the children in the Infant Department were examined, and 44 swabs obtained. All these gave growths of staphylococci. 10 swabs were also obtained from contacts in the homes where cases had occurred, and these also gave growths of staphylococci. The cases at Charleston were associated with the Burgh of Lanark, where the children attended school.

**Lesmahagow.**—44 cases, 1 death. The cases were distributed thus:—Lesmahagow, 10; Coalburn, 9; Kirkmuirhill, 7; Auchenheath, 3; Crossford, 3; and Kirkfieldbank, 12.

The prevalence at Kirkfieldbank included 3 cases at a dairy farm, where the children attended Kirkfieldbank School. A visit of inspection was made by the Asst. Medical Officer of Health on 29th October, and the children were examined, and those found to have been suffering from sore throat recently were swabbed. 12 swabs were taken, and 3 of these were found to give a positive result. A visit was then paid to the dairy farm and all the inmates examined. 4 swabs were taken, but only one of these gave a positive result. The milk supply was retailed in the Burgh of Lanark, and the usual precautions were taken.

**Symington.**—1 case. The source of infection in this case was not traced, but was probably outside the district, as the patient had been staying in Paisley for a week previous to sickening.

### Scarlet Fever.

Cases, 189; deaths, 1; fatality, 0·5 per cent.

The age incidence of cases and deaths was as follows:—

Ages,	1	1-2	2-5	5-15	15-25	25-45	45-65	Total.
Cases,	3	1	45	110	25	5	—	189
Deaths,	—	—	—	1	—	—	—	1

The number of cases removed to hospital was 117, or 61·9 per cent. of the total cases.

TABLE D3.—SCARLET FEVER.

YEAR.	NUMBERS.		RATES.		
	Cases.	Deaths.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	176	5	2·8	4·7	1·3
1893	337	12	3·5	8·9	3·1
1894	408	5	1·2	10·7	1·3
1895	275	5	1·8	7·1	1·3
<i>Average,</i>	<i>299</i>	<i>6·75</i>	<i>2·25</i>	<i>7·88</i>	<i>1·77</i>
1896	287	8	2·7	7·4	2·0
1897	197	4	2·0	2·03	1·0
1898	543	17	3·1	13·7	4·3
1899	398	8	2·01	9·9	2·0
1900	207	8	3·8	5·1	1·9
<i>Average,</i>	<i>326·4</i>	<i>9·0</i>	<i>2·7</i>	<i>8·27</i>	<i>2·28</i>
1901	427	8	1·8	10·5	1·9
1902	163	6	3·6	3·9	1·4
1903	110	2	1·8	2·6	0·4
1904	112	1	·8	2·7	0·2
1905	124	3	2·4	3·0	0·7
<i>Average,</i>	<i>187·2</i>	<i>4·0</i>	<i>2·13</i>	<i>4·56</i>	<i>·97</i>
1906	123	0	0	2·9	0
1907	86	4	4·6	2·0	0·9
1908	169	2	1·1	3·9	0·4
1909	477	7	1·4	11·0	1·6
1910	318	2	0·6	7·3	0·46
<i>Average,</i>	<i>234·6</i>	<i>3·0</i>	<i>1·27</i>	<i>5·5</i>	<i>0·70</i>
1911	144	1	0·7	3·3	0·2
1912	189	1	0·5	4·3	0·2

The incidence of the disease according to parish and the probable sources of infection will now be considered.

**Biggar.**—8 cases. Nearly all these cases occurred in the middle of the year, and were associated with the outbreak in the Burgh of Biggar. 3 cases occurred in one family.

**Carluke.**—22 cases, distributed as follows:—Cariuke, 15; Law, 6; and Kilncadzow, 1.

The cases in Carluke occurred in the early part of the year, and were probably due to mild unrecognised cases in the neighbourhood. The 15 cases affected ten families. At Law the cases were of a mild nature, and were probably also due to unrecognised cases. 1 case was infected at Overtown.

**Carnwath.**—31 cases, distributed as follows:—Carnwath, 2; Forth, 11; Wilsontown, 12; Haywood, 4; Woolfords, 1; and West Yards, 1.

The 2 cases at Carnwath were in the one family. The first case attended Lanark Grammar School, and was probably infected there.

The cases at Forth and Wilsontown occurred in the early part of the year, and were all of a mild nature. A visit was made by the Asst. Medical Officer of Health on 9th May. The first case at Forth was probably infected at Fauldhouse, and the others appear to have been due to personal infection. At Wilsontown the cases were all in the one locality, where infection was probably conveyed from Forth.

**Carstairs.**—Cases, 41; deaths, 1. As the population is estimated at 1,880, these figures represent an unusual prevalence of the disease.

This was due to a milk-borne epidemic occurring towards the end of February and the beginning of March. The following table gives the number of cases notified in each month in the various localities:—

Locality.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Died.
Junction, . . .	...	6	14	...	1	...	2	...	2	1	...	...	26	...
Village, . . .	...	3	7	...	...	...	...	...	...	1	...	...	11	1
Strawfrank Farm and Cottages, -	...	3	1	...	...	...	...	...	...	...	...	...	4	...
Totals, . . .													41	1

The cases due to direct infection from milk really ended March 1st, and the subsequent cases seem to be due to secondary infection, *e.g.*, the disease having been disseminated by milk into a number of families, personal infection took place later.

The first case, which occurred at Strawfrank Farm, near Carstairs Junction, was notified by Dr. Philp on the 22nd February. As this case was in the family of Mrs. N., who had charge of the dairy supplying most of the houses in Carstairs Junction with milk, the farmer, on the advice of the Sanitary Inspector, obtained the services of three neutral milkers, and arranged to keep the infected family, who occupied a cottage well apart from the dairy, out of the dairy premises till further notice.

The outbreak which followed has now been definitely associated with the milk retailed from one milking, and that on the night of the 21st February.

The first was a boy, R. N., attending school at Carstairs Junction. Patient complained of headache on afternoon of 21st February; later he was in the byre where his mother was milking and turned sick. His mother attended to him, and then returned to her milking. When the house was visited again on 23rd February another boy,



J. B., was found to be ill, and both patients were removed to hospital. The byre was disinfected and all the dairy utensils sterilised. No further case was notified till 29th February, when the disease became epidemic.

**Culter.**—1 case. Probably infected in the Burgh of Biggar.

**Dolphinton.**—1 case.

**Douglas.**—22 cases. 10 of these cases occurred during the early part of the year, and 12 during the last three months. Most of the cases were associated with Douglas Public School.

**Dunsyre.**—9 cases. The cases in the earlier part of the year were all associated with Dunsyre Public School. The cases in the latter part of the year were due to personal infection.

**Lanark.**—7 cases. 6 of these cases occurred in Smyllum Orphanage. No definite source of infection could be traced.

**Lesmahagow.**—42 cases, distributed as follows:—Lesmahagow, 9; Coalburn, 22; Crossford, 4; Kirkmuirhill, 4; and Kirkfieldbank, 3.

8 of the cases in Lesmahagow occurred during the latter part of the year. 4 of the cases were in one family, and 2 in another.

The outbreak at Coalburn was confined to the last four months of the year. This outbreak is an instance of how infection can be spread by personal contact, the 22 cases only affecting ten families.

1 of the cases at Crossford was of mixed infection, scarlet fever and diphtheria. The patient had been in contact with a known case of diphtheria.

At Kirkmuirhill 1 case occurred at a dairy farm that supplied milk to Glasgow. The case was isolated at home and the milk supply stopped for a time.

1 of the cases at Kirkfieldbank was a girl on a visit from Glasgow, and was probably infected there.

**Wiston.**—5 cases. The first case notified on 2nd December, was that of a child living at the Schoolhouse, Wiston. A visit by Inspector Anderson showed that there had been sore throats among the inmates of the adjoining farm, and that the milk supply was obtained from the farm.

Dr. Watt visited on 4th December, and found that all the inmates had, or had recently had, sore throats. The source of infection of the first case was not discovered.

The dairy also supplied Thankerton Creamery with sweet milk, and this was stopped.

As the cases were being nursed at home by the schoolmistress, the School Board instructed that the school be closed till after the Christmas vacation.

Dr. Scroggie visited the farm on 19th December, examined those of the inmates who were at home, and instructed the farmer to continue churning his milk till he received further notice.

**Typhoid Fever.**

Cases, 7; deaths, 2; fatality, 28·5 per cent.

The age incidence of the cases and deaths was as follows:—

	Ages, 5-15	15-25	25-45	Total.
Cases,	3	2	2	7
Deaths,	1	—	1	2

During the year 25 specimens of blood were received in the laboratory from medical practitioners for examination, and 5 of these proved positive to Widal's reaction. 4 of the positive cases and 2 of the negative cases were notified, as well as another case in which no Widal's test was made. Of the 7 cases, 6 were treated in hospital, 4 in the Middle Ward, and 2 in the Upper Ward District Hospital.

The incidence of the disease according to parish and the sources of infection will now be considered.

TABLE D4.—TYPHOID FEVER.

YEAR.	NUMBERS.		RATES.		
	Cases	Deaths	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	38	1	2·6	1·0	0·2
1893	52	9	17·3	1·3	2·3
1894	58	9	15·5	1·5	2·3
1895	37	4	10·8	0·9	1·0
<i>Average,</i>	<i>46·2</i>	<i>5·7</i>	<i>12·4</i>	<i>1·2</i>	<i>1·5</i>
1896	33	6	18·1	0·8	1·5
1897	24	6	25·0	0·6	1·5
1898	27	2	7·4	0·6	0·5
1899	19	6	31·5	0·4	1·5
1900	33	4	12·1	0·8	0·9
<i>Average,</i>	<i>27·2</i>	<i>4·8</i>	<i>17·6</i>	<i>0·6</i>	<i>1·2</i>
1901	34	6	17·6	0·8	1·4
1902	11	4	36·3	0·2	0·9
1903	31	3	9·6	0·7	0·7
1904	12	2	16·6	0·2	0·4
1905	13	4	30·7	0·3	0·9
<i>Average,</i>	<i>20·2</i>	<i>3·8</i>	<i>18·8</i>	<i>0·4</i>	<i>0·9</i>
1906	19	4	21·0	0·4	0·9
1907	25	4	16·0	0·5	0·9
1908	5	1	20·0	0·1	0·2
1909	5	1	20·0	0·1	0·2
1910	9	1	11·1	0·2	0·2
<i>Average,</i>	<i>12·6</i>	<i>2·2</i>	<i>17·4</i>	<i>0·3</i>	<i>0·5</i>
1911	9	2	22·2	0·2	0·4
1912	7	2	28·5	0·1	0·4

**Carluke.**—1 case, which proved fatal. This was a girl, aged 14, who with her parents had come from a farm in Bothwell Parish at Whitsunday, and after only being ten days in residence developed symptoms of typhoid fever. She was seen by a physician on 18th June and removed to hospital. A blood specimen taken on 21st June, and another on 1st July, gave negative results. The clinical report by the hospital physician regarding this case was as follows:—

The girl M.B., sent in from Braidwood, died in hospital on 29th June. On my first visit to this girl the clinical symptoms and history pointed to typhosus. She had been ill about ten days with headache, diarrhoea of abdomen with pain, and tympanicity. No rash; mind quite clear; tongue thickly coated, but moist; temperature, 102°. After getting into hospital the temperature fell gradually, and on the third day was normal, but the abdominal symptoms were marked, although mitigated. The temperature kept down, with the exception of one rise for a day to 100° F. Widal test was tried, and gave no reaction practically.

Early on Friday morning she was suddenly seized with acute pain in the lower part of the abdomen; temperature fell to 96°; abdomen got gradually distended and tympanitic; cold sweat all over; pinched face; sunken eyes; and vomiting of bilious matter set in. She had slight remission of symptoms at 2 a.m. on Saturday, but gradually got worse during the day, and died at 4 p.m. from, to my mind, perforation.

**Carmichael.**—1 case, that of a young woman, age 22, occurred at a farm. The patient had resided at Biggar and at Dunsyre, but although careful inquiry was made no evidence as to the source of infection could be found. A visit was made by the Asst. Medical Officer of Health (Dr. Scroggie), who, at the request of the medical attendant, carefully examined the patient. She took ill on the 5th July, and a blood specimen taken on the 18th July gave a positive result. Dr. Scroggie's clinical notes show that the patient had symptoms like typhoid fever, although she was convalescent when seen. The patient may have had pneumonia or an attack of pleurisy, which might explain the positive Widal's reaction.

**Lesmahagow.**—5 cases, 1 death. The cases were distributed as follows:—Draffan, 3; Blackwood, 1; and Kirkfieldbank, 1.

The 3 cases occurring at Draffan and the case at Blackwood really relate to the same outbreak. This outbreak is of considerable interest, showing how infection is spread by personal contact often with unrecognised cases. At Meadowhill, in Larkhall, typhoid fever prevailed during the months of June and July, and the infection was conveyed from there to Draffan in the following manner:—Mrs. B. and two children spent a day in Larkhall about fourteen days before the first case took ill, and while there visited one or two

families. The first case is believed to have actually visited families in the neighbourhood of Meadowhill, where typhoid fever had been prevalent. A child in Larkhall, with a suspicious illness, known to have been in contact with the first case, may have been the actual source of infection. The first case, J. B., was not recognised as typhoid fever, but a blood specimen taken on 20th July gave a positive Widal's reaction. The next illness which occurred was in the father of the patient. He took to bed about 12th July, but had been complaining for some time prior to that. This case was removed to hospital, and died there on 23rd July. The mother of the first case complained of feeling unwell while nursing her husband, but had not been confined to bed; still she was believed to have suffered from a mild attack of the disease. The third case, a lad, aged 17 years, complained of headache, sore throat, and pains all over the body. He was removed to hospital on 27th July. A girl, aged 15 years, had also some slight illness, which may have been typhoid. Another girl, aged 13, was also feeling unwell, and was notified, but the blood specimen gave a negative reaction.

A brother of the deceased, residing at Blackwood, visited his brother at Draffan while he was ill. The result was that he developed symptoms of the disease on 19th July. His blood gave a positive reaction, the symptoms were typical, and he was removed to hospital.

At Kirkfieldbank 1 case occurred, a girl, aged 10, who attended St. Mary's School, in the Burgh of Lanark, where probably infection was got.

#### Cerebro-Spinal Fever or Meningitis.

No cases occurred in any part of the district, but the following Table D5 shows the prevalence in previous years:—

TABLE D5.—CEREBRO-SPINAL FEVER.

YEAR.	NUMBERS.		RATES.		
	Cases.	Deaths.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1906	2	2	100	0·04	0·4
1907	5	5*	100	0·11	1·1
1908	8	6†	75	0·18	1·4
1909	2	2‡	100	0·04	0·4
1910	...	...	...	...	...
1911	...	...	...	...	...
1912	...	...	...	...	...

\* One death was registered as enteritis and cardiac shock.

† Four deaths were registered as due to causes other than cerebro-spinal fever.

‡ One death was registered as meningitis.

**Pulmonary Tuberculosis.**

**Bacteriological Examination of Sputum.**—120 specimens of spit were received at the County Laboratory from medical practitioners, and examination of smear preparations showed that 26 contained tubercle bacilli. All the positive spits, as well as 3 of the negative, were notified.

**Compulsory Notification.**—

New cases notified, ... ..	52
New cases not notified (deaths), ... ..	3
Old cases renotified by the same practitioners, ... ..	2
Total, ... ..	<u>57</u>

These cases were dealt with as follows:—

Admitted to hospital, ... ..	16
Waiting for admission at close of year, ... ..	4
Refused treatment, ... ..	5
Died before or soon after notification, ... ..	7
Visitors, or had left the district, ... ..	7
Notified "Do not Visit," ... ..	7
Notified hospital treatment not required, ... ..	11
Total, ... ..	<u>57</u>

The number of deaths recorded during the year was 27, and of these 13 were notified during 1912.

The cases notified for the first time during 1912 are classified in the following table according to parish, age, and occupation:—

**AGE PERIOD IN YEARS.**

Parish.	1-2	2-5	5-15	15-25	25-45	45-65	65 & over.	Total.
Biggar, ...	—	—	—	—	1	—	—	1
Carluke, ...	—	—	—	4	3	—	—	7
Carmichael,	—	—	—	2	—	—	—	2
Carnwath,	—	—	—	—	4	1	—	5
Carstairs, ...	—	—	—	2	1	—	—	3
Crawford, ...	—	—	—	1	1	—	—	2
Dolphinton,	—	—	—	1	—	—	—	1
Douglas, ...	—	—	—	—	5	—	—	5
Lamington,	—	—	—	—	1	—	—	1
Lanark, ...	—	—	2	4	2	2	—	10
Lesmahagow,	1	—	2	2	5	3	1	14
Libberton,	—	—	—	—	1	—	—	1
	<u>1</u>	<u>—</u>	<u>4</u>	<u>16</u>	<u>24</u>	<u>6</u>	<u>1</u>	<u>52</u>

		OCCUPATION.	Total.
<i>Domestic Work.</i> —		Housewife, 7 ; servant, 1 ; nurse, 1 ; child, 1, ...	10
<i>Scholars,</i> ...		...	5
<i>Miners,</i> ...		...	5
<i>Factory and Workshop Employees.</i> —		Factory workers, 4 ; weaver, 1 ; tailor, 1 ; tailor's presser, 1, ...	7
<i>No Occupation,</i> ...		...	1
<i>Miscellaneous.</i> —		School teacher, 1 ; police constable, 1 ; coachman, 1 ; vanman, 1 ; stationmaster, 1 ; tinsmith, 1 ; engineer, 3 ; dairy- maid, 1 ; telephone operator, 1 ; labourer, 2 ; writer, 1 ; mason, 2 ; ironmonger, 2 ; dyer, 1 ; carrier, 1 ; motor car manufacturer, 1 ; checker, 1 ; student, 1 ; barman, 1 ; occupation unknown, 1,	24
Total,		...	<u>52</u>

**Notification in Relation to Deaths.**—It is still disappointing to find that deaths from pulmonary phthisis occur before notification has been made, and it is the practice to communicate with medical practitioners who have certified such deaths. During 1912 three deaths were unnotified, as shown in the undernoted table, which also gives the period between notification and death.

YEAR.	Cases Notified.	Fatal Cases.		Fatal Cases Notified. Period between Notification and Death.				
		Un-notified.	Notified.	1 Month.	1-3 Months.	3-6 Months.	6-12 Months.	Over 1 Year.
1906, - - -	27	33	6	3	2	1	...	...
1907, - - -	26	21	16	8	3	2	3	...
1908, - - -	54	4	29	12	6	4	3	4
1909, - - -	29	12	24	5	5	2	6	6
1910, - - -	43	10	22	7	4	3	2	6
1911, - - -	56	4	25	6	5	5	4	5
1912, - - -	52	3	26	8	2	4	5	7
	287	87	148	49	27	21	23	28

PULMONARY TUBERCULOSIS IN EACH REGISTRATION DISTRICT OF THE UPPER WARD.—AVERAGE ANNUAL NUMBER OF DEATHS FOR QUINQUENNIAL PERIODS OF 1891-1910 AND FOR EACH OF THE YEARS 1911 AND 1912.

Registration District.	Popula- tion. Census 1911.	1891-1895	1896-1900.	1901-1905.	1906-1910.	1911.	1912.
Biggar, - - - -	605	0·4	0·6	0·6	...	1	1
Carluke, - - - -	9,619	11·0	13·2	8·2	10·4	6	6
Carmichael, - - -	1,471	0·2	...	1·4	·4	...	1
<i>Carnwath</i> , - - - -	3,741	4·0	3·6	2·8	2	4	2
<i>Forth</i> , - - - -	2,031	1·6	2·0	1·6	·4	...	...
<i>Haywood</i> , - - - -	674	0·6	0·8	...	·2	1	...
Carstairs, - - - -	1,878	3·4	2·6	2·8	1·8	...	...
Covington and Thank- erton, - - - -	385	0·6	0·8	0·8	·4	1	...
<i>Crawford</i> , - - - -	681	1·0	1·0	0·4	·8	1	...
<i>Leadhills</i> , - - - -	839	2·2	1·8	1·8	2	...	2
Crawfordjohn, - - -	617	1·0	0·6	1·0	·4	...	...
Culter, - - - -	372	0·8	0·6	0·6	·2	1	...
Dolphinton, - - - -	245	0·2	0·4	...	...	...	...
Douglas, - - - -	2,509	3·2	2·8	5·6	2·2	1	1
Dunsyre, - - - -	175	0·2	0·2	...	·2	...	...
Lamington and Wandel,	271	0·6	0·4	...	·2	...	...
Lanark, - - - -	3,078	3·0	2·0	3·8	2·4	2	1
<i>Lesmahagow</i> , - - -	10,641	8·0	9·0	7·2	7·2	9	9
<i>Kirkfieldbank</i> , - - -	1,349	1·2	1·4	2·0	1·4	2	4
Libberton, - - - -	461	0·6	...	...	·2	...	...
Pettinain, - - - -	261	0·2	0·2	0·4	...	...	...
Symington, - - - -	420	0·4	0·6	1·2	1	1	...
Walston, - - - -	255	0·4	0·6	0·6	·2	1	...
Wiston and Reberton, -	400	0·6	1·8	0·6	·8	...	...
Upper Ward District, -	42,978	45·4	47·0	43·4	34·6	31	27
Average Quinquennial Death- rate per 10,000 of the Popu- lation, . . . . .		12·02	11·90	10·58	8·13	7·20	6·25

**Erysipelas.**—60 cases were notified and 6 deaths were registered.

**Puerperal Fever.**—One case was notified in Lesmahagow parish during the year.

**Measles (4 DEATHS).**

The sources of information available to the Department regarding the prevalence of measles are (1) the register of deaths; (2) information sent by schoolmasters for the purposes of certification of scholars absent on account of infectious disease, for the purposes of the grant; and (3) application made by school authorities for closure of schools when the attendance is interfered with by epidemic prevalence. The following table shows the deaths classified according to parish and age periods, viz. :—

Parish.	6-9 months.	9-12 months.	2-5 years.	Total.
Carluke, - - -	1	...	1	2
Carnwath, - - -	...	...	1	1
Covington, - - -	...	1	...	1
	1	1	2	4

Three schools—Daer and Powtrail, Auchengray, and Tarbrax—were closed on account of the prevalence of the disease, and certificates signed by two members of the Local Authority were granted.

**Whooping-Cough (6 DEATHS).**

The number of deaths from this disease shows a decrease of 8 compared with the preceding year. The following table shows the deaths from whooping-cough classified according to parish and age periods :—

Parish.	1-3 months.	3-6 months.	9-12 months.	2-5 years.	Total.
Carluke, - - -	1	1	...	1	3
Carnwath, - - -	...	...	1	1	2
Lesmahagow, - - -	...	1	...	...	1
	1	2	1	2	6



**Diarrhoeal Diseases.**

There was a considerable decrease in the number of deaths due to diarrhoeal disease, 13 being registered as against 31 in 1911. Table D6 shows the number of deaths and the death-rate from diarrhoeal diseases since the year 1892. It is gratifying to note that the death-rate during 1912, 3·02, is the lowest yet recorded.

The distribution of the deaths according to parish is shown in the following table:—

Month.	Total Deaths.	Carlisle.	Carnwath.	Covington.	Lesmahagow.
January, - - -	3	—	—	1	2
February, - - -	2	—	1	—	1
March, - - -	2	2	—	—	—
April, - - -	1	1	—	—	—
May, - - -	1	—	—	—	1
June, - - -	3	2	—	—	1
November, - - -	1	—	—	—	1
	13	5	1	1	6

TABLE D6.—DIARRHOEA.

Year.	Numbers.	Rates.	Year.	Numbers.	Rates.
	Deaths.	Deaths per 10,000 Population.		Deaths.	Deaths per 10,000 Population.
(1)	(2)	(3)	(1)	(2)	(3)
1892	26	6·94	1901	35	8·64
1893	39	10·32	1902	22	5·38
1894	14	3·67	1903	31	7·51
1895	35	9·10	1904	19	4·60
Average	28·5	7·50	1905	21	5·09
1896	12	3·09	Average	25·6	6·24
1897	25	6·39	1906	27	6·44
1898	25	6·33	1907	20	4·76
1899	43	10·80	1908	33	7·76
1900	32	7·96	1909	24	5·58
Average	27·4	6·91	1910	21	4·85
			Average	25·0	5·87
			1911	31	7·20
			1912	13	3·02

**School Closure.**—The following schools were closed on account of infectious diseases, and certificates were signed by two members of the Local Authority under the Scotch Education Code, Article 30 :—

School.	Parish.	Disease Prevalent.	Period of Closure.
Daer and Powtrail Public School, . . . .	Crawford	Measles	24th Jan. to 16th Feb. 1912.
Carstairs Junction Public School, . . . .	Carstairs	Scarlet Fever	5th to 22nd March, 1912.
Carstairs Public School, .	Do.	Do.	5th to 15th March. 1912.
Auchengray Public School,	Carnwath	Measles	29th April to 17th May, 1912.
Tarbrax Public School, .	Do.	Do.	3rd to 19th July, 1912.
Douglas Public School, .	Douglas	Diphtheria	29th Oct. to 1st Nov., 1912.
Wiston Public School, .	Wiston	Scarlet Fever	2nd to 20th Dec., 1912, and 6th to 10th Jan., 1913.

**Exclusion of Scholars.**—Special certificates of exclusion of scholars under the Public Health Act were granted for the purposes of the Scotch Education Code, under Article 19F, and the number certified is shown in the following table :—

School.	Whooping-cough.	Ringworm.	Chickenpox.	Mumps.	Measles.	Scabies.
Stableston, . . . .	14	...	...	...	...	...
Douglas, . . . .	1	2	1	...	...	...
St. Mary's, Lanark, .	4	...	...	12	...	...
Nemphlar, . . . .	19	...	...	...	...	...
Auchengray, . . . .	...	...	...	...	26	...
New Lanark, . . . .	9	...	...	32	...	...
Carnwath, . . . .	39	...	...	1	...	...
Powtrail, . . . .	...	...	...	...	3	...
Waterside, . . . .	...	6	...	...	...	...
Ponfeigh, . . . .	...	18	1	2	5	3
Lesmahagow (Junior),	...	...	3	...	2	...
	86	26	5	47	36	3

**Anthrax.**—8 outbreaks of this disease among cattle were reported, namely :—Thankerton, 1; Covington, 1; Lesmahagow, 1; Pettinain, 1; Crawfordjohn, 1; Biggar, 2; and Coulter, 1.

**HOSPITALS.**

The District Hospital at Roadmeetings was opened in 1897, and the number of patients admitted each year since then was as follows :—

Year.	Diphtheria.	Scarlet Fever.	Typhoid Fever.	Other Diseases.	Total.
1897	2	2	1	...	5
1898	5	30	18	1	54
1899	1	17	4	...	22
1900	2	17	17	1	37
1901	1	48	8	2	59
1902	16	46	4	7*	73
1903	13	41	9	...	63
1904	...	27	8	...	35
1905	2	41	9	2†	54
1906	16	33	10	5†	64
1907	35	30	18	3†	86
1908	38	74	3	13†	128
1909	44	166	4	10†	224
1910	21	126	7	15†	169
1911	29	72	7	21†	129
1912	48	141	3	20†	212

\* Includes 6 cases of Smallpox. † Includes cases of Phthisis.

For the year 1912 the usual statistics are given. Thus, Table F shows that 14 cases were in Hospital at the commencement of the year, and that 212 were admitted, making a total of 226 patients under treatment during the course of the year. Of these, 201 were discharged well, 3 died, and 22 patients remained in Hospital at the close of the year. The patients admitted were certified to be suffering thus—from scarlet fever, 141; typhoid fever, 3; diphtheria, 48; phthisis, 19; and measles, 1.

In Table F1 the scarlet fever cases discharged are classified according to age, 76 cases being under and 59 over ten years of age. Table F2 shows that of the admissions 122 cases were removed during the first week of illness.

Table F3 gives the localities from whence the patients came, and shows that 50 were admitted from Carluke Parish, 46 from Lesmahagow Parish, the others being from different parishes throughout the district.

## HOSPITAL STATISTICS FOR THE YEAR 1912.

TABLE F.—ADMISSIONS, DISCHARGES, &amp;C.

Cases at the beginning of the year.	Admitted.	Discharged.	Died.	Cases at the close of the year.	ADMISSIONS AS NOTIFIED.				
					Diphtheria.	Scarlet Fever.	Typhoid Fever.	Phthisis.	Menses.
14	212	201	3	22	48	141	3	19	1

TABLE F1.—SCARLET AND TYPHOID FEVER DISCHARGES AND DEATHS CLASSIFIED ACCORDING TO Age.

SCARLET FEVER.			TYPHOID FEVER.		
AGE.	Discharged.	Died.	AGE.	Discharged.	Died.
- 5,	25	...	- 10,	1	...
5-7,	24	...	10-15,	...	1
7-8,	7	...	15-20,	1	...
8-10,	20	...	20-30,	...	...
10 and over,	59	...	30-45,	...	...
Total,	135	...	Total,	2	1

TABLE F2.—PATIENTS CLASSIFIED ACCORDING TO THE STAGE OF DISEASE WHEN ADMITTED.

## SCARLET FEVER (141 Admissions).

Day of Illness,	1	2	3	4	5	6	Over 7
No. of Cases,	*2	29	47	25	17	2	19

\* Both these cases developed Scarlet Fever while in Hospital.

## TYPHOID FEVER (3 Admissions).

Week of Illness,	I.	II.	III.	IV.	V.
No. of Cases,	...	2	...	1	...

TABLE F3.—AMBULANCE STATISTICS.

PARISH.	LOCALITY.	DISEASE.					NUMBER OF JOURNEYS AND APPROXIMATE MILEAGE.							
		Diphtheria.	Scarlet Fever.	Typhoid Fever.	Phthisis.	Others.	MILES.						16 miles and over.	
							-2	-4	-6	-8	-10	-16		
BIGGAR, -	Biggar, -	...	6	...	1	...	...	...	...	...	...	...	...	4
	Burgh, -	...	24	...	...	...	...	...	...	...	...	...	...	14
CARLUKE, -	Carluke, -	4	7	...	1	...	9	...	...	...	...	...	...	...
	Law, -	...	5	...	...	...	...	5	...	...	...	...	...	...
	Kilncadzow, -	...	1	...	...	...	1	...	...	...	...	...	...	...
	Braidwood, -	...	...	1	...	...	...	1	...	...	...	...	...	...
CARMICHAEL, -	Douglas Water, -	...	...	...	...	...	...	...	...	...	...	...	...	...
	Ponfeigh, -	4	...	...	...	...	...	...	...	...	...	...	4	...
CARNWATH, -	Carnwath, -	1	2	...	...	...	...	...	...	...	3	...	...	...
	Haywood, -	...	3	...	...	...	...	...	...	...	3	...	...	...
	Forth, -	...	7	...	...	...	...	...	...	...	6	...	...	...
	Wilsontown, -	...	10	...	...	...	...	...	...	...	7	...	...	...
	Tarbrax, -	2	...	...	1	...	...	...	...	...	...	...	2	...
	Newbigging, -	...	...	...	1	...	...	...	...	...	...	...	...	...
CARSTAIRS, -	Carstairs, -	...	7	...	1	...	...	...	...	5	...	...	...	...
	„ Junction, -	2	18	...	2	...	...	...	11	...	...	...	...	...
	Strawfrank, -	...	3	...	...	...	...	...	2	...	...	...	...	...
	Cranley, -	1	...	...	...	...	...	1	...	...	...	...	...	...
CRAWFORD, -	Howcleugh, -	...	...	...	1	...	...	...	...	...	...	...	...	
DOLPHINTON, -	Dolphinton, -	...	1	...	...	...	...	...	...	...	...	...	1	
DOUGLAS, -	Douglas, -	14	9	...	1	...	...	...	...	...	...	...	...	19
	Glespinside, -	...	2	...	...	...	...	...	...	...	...	...	...	1
	Townhead, -	...	3	...	...	...	...	...	...	...	...	...	...	3
	Rigside, -	2	...	...	...	...	...	...	...	...	...	...	2	...
	Sliddery, -	1	...	...	...	...	...	...	...	...	...	...	...	1
	Townfoot, -	1	...	...	...	...	...	...	...	...	...	...	...	1
	Uddington, -	1	...	...	...	...	...	...	...	...	...	...	...	1
DUNSYRE, -	Dunsyre, -	...	8	...	...	...	...	...	...	...	...	...	...	4
	Kirkland, -	...	1	...	...	...	...	...	...	...	...	...	...	1
LAMINGTON, -	Lamington, -	...	...	...	1	...	...	...	...	...	...	...	...	
LANARK, -	New Lanark, -	1	...	...	...	...	...	...	1	...	...	...	...	...
	Burgh, -	1	...	1	...	1	...	...	3	...	...	...	...	...
LESMAHAGOW, -	Lesmahagow, -	...	...	...	1	...	...	...	...	...	...	...	...	...
	High Cairney, -	1	...	...	...	...	...	...	1	...	...	...	...	...
	Coalburn, -	3	17	...	1	...	...	...	...	...	...	...	9	...
	Kirkmuirhill, -	1	2	...	1	...	...	...	...	...	3	...	...	...
	Kirkfieldbank, -	2	2	1	2	...	...	5	...	...	...	...	...	...
	Auchenheath, -	1	...	...	1	...	...	...	...	...	1	...	...	...
	Byretown, -	1	...	...	...	...	...	...	...	1	...	...	...	...
	Crossford, -	...	2	...	...	...	...	2	...	...	...	...	...	...
	Corehouse, -	2	...	...	...	...	...	...	...	1	...	...	...	...
	Peasehill, -	...	1	...	...	...	...	...	...	...	1	...	...	...
	Bakersbrae, -	1	...	...	...	...	...	...	...	...	1	...	...	...
	Littlegill, -	1	...	...	...	...	...	...	...	1	...	...	...	...
	Turfholm, -	...	...	...	1	...	...	...	...	...	...	...	...	...
Middleholm, -	...	...	...	1	...	...	...	...	...	...	...	...	1	
LIBBERTON, -	Libberton, -	...	...	...	1	...	...	...	...	...	...	...	...	
TOTAL,		48	141	3	19	1	10	14	4	22	25	17	51	
		212 Cases.					143 Journeys.							

## III.—GENERAL SANITATION.

## Housing.

**Public Health Act and Building Bye-Laws.**—In terms of the Public Health (Scotland) Act, 1897, the word "house" means a dwelling-house, and includes schools, also factories and other buildings in which persons are employed. The plans lodged under the Building Bye-laws with the District Clerk, reported upon by the Sanitary Inspector, and disposed of by the Committee, numbered 63. The total number of dwelling-houses set forth in the plans during 1912 amounted to 50. The dwellings classified, according to size, may be summarised as follows:—Two apartments, 9; three apartments, 29; four apartments, 2; and five apartments and upwards, 10.

**One-apartment Dwellings.**—In Table G the houses erected each year are classified according to size, and in the last column the percentage proportion of one-apartment houses is given.

TABLE G.—SHOWING NUMBER AND SIZE OF HOUSES SET FORTH IN PLANS SUBMITTED UNDER THE BYE-LAWS REGULATING THE BUILDING OR RE-BUILDING OF HOUSES OR BUILDINGS DURING EACH OF THE TWELVE YEARS 1901-1912.

Year.	One Apartment.	Two Apartments.	Three Apartments.	Four Apartments.	Five Apartments and Upwards.	Total Houses.	Percentage proportion of One-apartment Houses.
1901	...	87	20	39	...	146	...
1902	25	70	22	44	41	202	12·3
1903	23	79	23	22	25	172	13·3
1904	15	37	40	19	25	136	11·0
1905	18	38	30	12	47	145	12·4
1906	11	30	62	25	37	165	6·6
1907	10	56	49	22	28	165	6·0
1908	33	88	35	21	17	194	17·0
1909	6	30	25	8	19	88	6·8
1910	9	30	11	3	14	67	13·4
1911	13	28	22	6	14	83	15·6
1912	...	9	29	2	10	50	...

The following table, extracted from the Census Report, Vol. I., Part 24, page 1539, shows the number of houses with the number of windowed rooms, classified according to parish. As many dwellings are used as summer residences, and as the Census is taken in the month of April when such houses are empty, a considerable number of dwellings are returned in the Census as unoccupied, whereas in the Valuation Roll they are returned as occupied.

PARISH.	NUMBER OF WINDOWED ROOMS.							TOTAL.
	1.	2.	3.	4.	5.	6.	7 and up.	
Biggar, . . .	13	40	12	12	14	14	41	146
Carluke, . . .	345	975	313	173	100	53	106	2,065
Carmichael, . . .	30	174	23	9	8	5	20	269
Carnwath, . . .	176	618	258	104	32	28	58	1,274
Carstairs, . . .	33	200	86	24	19	6	27	395
Covington and Thankerton, } . . .	8	27	8	12	8	7	16	86
Crawford, . . .	27	160	71	42	21	21	43	385
Crawfordjohn, . . .	15	34	25	29	15	7	18	143
Culter, . . .	5	30	17	8	6	7	18	91
Dolphinton, . . .	—	24	5	5	5	4	4	47
Douglas, . . .	48	277	70	44	28	23	44	534
Dunsyre, . . .	—	18	3	1	1	1	10	34
Lamington and Wandel, } . . .	6	28	9	6	2	3	12	66
Lanark, . . .	68	172	119	36	17	17	55	484
Lesmahagow, . . .	398	1,095	358	220	123	88	111	2,393
Libberton, . . .	11	42	11	11	1	6	21	103
Pettinain, . . .	6	15	9	7	3	1	11	52
Symington, . . .	18	37	23	9	9	7	10	113
Walston, . . .	1	21	5	12	4	2	8	53
Wiston and Roberton,	5	29	10	6	11	8	16	85
TOTAL, . . .	1,213	4,016	1,435	770	427	308	649	8,818
	13·76	45·54	16·27	8·73	4·84	3·5	7·36	...

**School Buildings.**—The plans relating to schools are here tabulated with a description of the buildings:—

School Board.	School.	Description of Buildings.
Lesmahagow, . . .	Higher Grade,	Additions—Water-closets.
Carnwath, . . .	Carnwath, . . .	Additions—Class-rooms, central hall, cookery and manual instruction rooms.
Libberton, . . .	Arthurshields Road,	New School.

**Domestic and Sanitary Conveniences.**—Considerable attention has been paid to the provision of proper domestic and sanitary conveniences at workmen's dwellings.

*Woodlands Square, Law.*—An inspection was made by the Medical Officer and Sanitary Inspector, as the result of which the owner of this property was communicated with, and asked to provide four wash-houses and improved privy accommodation. These improvements have now been carried out.

*Whorleyburn.*—The miners' dwellings here consist of three blocks, containing 27 houses. An inspection was made during the year by the Medical Officer and Sanitary Inspector, and an intimation served on the owners under Section 16 of the Public Health Act, calling attention to the following defects:—

(1) Accumulations of household refuse owing to the want of proper ash-pits, and deposits due to want of privies, making the surroundings foul and offensive.

(2) No proper means of ventilation, as the result of (a) the houses being placed back to back in the two blocks of one apartment dwellings, and (b) most of the windows in all the three blocks being dead lights.

A meeting was arranged on the ground with the company's general manager, and it was agreed, as the lease expires in four years, that the best remedy would be to vacate two of the blocks, and put the remaining block of 10 houses into sufficient state of repair for habitation.

**Housing Acts.**—All the inspections made and action taken for the improvement of workmen's dwellings were carried out under the provisions of the Public Health Act, and without any special reference to the powers contained in the Housing and Town Planning, &c., Act, 1909. During the year 1913 a number of inspections have been made with a view to proceedings under the latter Act.

**Tents, Vans, and Sheds.**—In the course of the year 140 inspections were made by the Sanitary Inspector, of the accommodation provided for seasonal workers (fruit gathering, &c.).

In connection with a complaint received regarding the housing conditions of berry-pickers in Nemphlar district, an inspection was made by the Asst. Medical Officer (Dr. Watt). The conclusions formed as a result of this inspection were:—

(1) That more frequent inspections should be made, especially during the height of the fruit season.

(2) That sanitary conveniences should be provided where necessary.

(3) That the farmer should be asked to enforce the separation of the sexes.

(4) That some of the worst houses should be considered unfit for human habitation.



**Workshops.**—The number of workshops on the register at the close of the year was 279, being a decrease of 8 compared with the preceding year.

The number of notices received from the Factory Inspector during the year was as follows:—

Commencement to occupy workshops, ...	2 notices.
Sanitary defects, ... ..	0 „
Sanitary Accommodation Order, ... ..	1 „

**Outworkers.**—Under Section 107, three lists of outworkers were received by the District Clerk, giving the names of 12 outworkers.

The inspections made by the sanitary staff, the defects found, and the action taken, were as follows:—

1.—INSPECTIONS MADE BY THE SANITARY INSPECTORS.

PREMISES.	NUMBER OF—		
	Inspections.	Written Notices.	Prosecutions.
Factories, - - - - -	29	...	...
Workshops, - - - - -	445	...	...
Workplaces, - - - - -	...	...	...
Total, - - - - -	474	...	...

2.—DEFECTS FOUND.

PARTICULARS.	NUMBER OF DEFECTS.			Number of Prosecutions.
	Found.	Remedied.	Referred to H. M. Inspector.	
Nuisances under the Public Health Acts:—				
Want of cleanliness, - - -	4	4	...	...
Want of ventilation, - - -	1	1	...	...
Overcrowding, - - - - -	...	...	...	..
Want of drainage of floors, - -	2	2	...	..
Other nuisances, - - - - -	8	8	..	...
Sanitary Accommodation, {	Insufficient, -	...	...	...
	Unsuitable, or Defective, -	...	...	..
	Not separate for sexes, -	...	...	..
Total, - - - - -	15	15	...	..

## 3.—HOME WORK.

Lists received from employers, ... ..	3
Number of outworkers, ... ..	12
Addresses of outworkers received from other Councils, ... ..	—
Addresses of outworkers forwarded to other Councils, ... ..	—
Prosecutions, ... ..	—
Inspections of outworkers' premises, ... ..	—
Outwork in unwholesome premises, ... ..	—
Outwork in infected premises, ... ..	—

## 4.—REGISTERED WORKSHOPS.

Total number of workshops on register at end of 1912—279. For detailed list see Table H.

## 5.—OTHER MATTERS.

Matters notified to H.M. Inspector of Factories, ... .. —

A detailed tabular statement, prepared from the register of workshops, classified according to the trade or industry, is here given, along with a note of the number of employees:—

TABLE H.—WORKSHOPS, INCLUDING RETAIL BAKEHOUSES, CLASSIFIED ACCORDING TO THE NATURE OF THE INDUSTRY.

Parish or Group of Parishes.	Dressmakers.	Tailors.	Milliners.	Bakers.	Shoemakers.	Saddlers.	Blacksmiths.	Joiners and Cabinetmakers.	Laundry-keeper.	Other Manufacturers.	Total.
Group No. 1, ...	2	4	...	3	3	...	10	12	...	1	35
„ 2, ...	11	6	...	4	7	1	10	8	...	4	51
„ 3, ...	4	3	...	4	5	1	8	4	...	1	30
Lesmahagow, ...	9	13	...	6	9	1	8	14	...	6	66
Carlisle, .. ...	13	21	4	8	9	2	4	13	1	22	97
Total Workshops,	39	47	4	25	33	5	40	51	1	34	279

The parishes included in the different groups are as follows:—

- Group No. 1.—Biggar, Dolphinton, Walston, Culter, Symington, Lamington, Crawford, Crawfordjohn, Wiston and Robertson, and Covington.  
 „ 2.—Carnwath, Carstairs, Dunsyre, and Libberton.  
 „ 3.—Lanark, Pettinain, Carmichael, and Douglas.

**Special Districts.**

The extent to which local administration contributes to the advancement of general sanitation may be realised from the number of districts formed for special purposes—Water supply, Drainage and Sewage disposal, Scavenging, and Lighting. The number of districts so formed is shown in the following tabular statement, where a blank space in the assessment column will be understood to indicate that no district has been formed for the special purpose indicated.

TABLE I.—LIST OF Special Districts IN THE Upper Ward, AND THE RATES LEVIED FOR THE YEAR 1912-1913 (AS ASCERTAINED FROM THE COUNTY CLERK).

District.	Parish.	RATE OF ASSESSMENT PER £.			
		Water.	Drainage.	Lighting.	Scavenging.
Carlukc, - -	Carlukc, - -	7d.	1d.	1½d.	3d.
Law, - - -	Do., - - -	2d.	1½d.	...	...
*Carnwath, -	Carnwath, -	9d.	1s. 4½d.	...	...
Forth, - - -	Do., - - -	2s. 4d.	...	...	...
Crawford, -	Crawford, -	7d.	...	...	...
Douglas, - -	Douglas, - -	2½d.	2½d.	3½d.	5d.
Lesmahagow, -	Lesmahagow, -	11½d.	1½d.	2d.	4d.
Blackwood and Kirkmuirhill,	{ Do., - - -	1s. 6d.	...	...	...
Kirkfieldbank,	Do., - - -	1s. 1d.	...	...	...
Crosslaw, - -	Lanark, - -	...	3d.	4d.	...
Braidwood, -	Carlukc, - -	1s.	...	...	...
Roberton, - -	{ Wiston and } { Roberton, }	2s. 6d.	...	...	...
Symington, -	Symington, -	1s. 3d.	...	...	...
Thankerton, -	Covington, -	1s. 2d.	3½d.	...	...
Leadhills, - -	Crawford, - -	...	..	...	9d.

\* The water district includes Carstairs Junction.

If the districts be classified according to the number of purposes for which local administration and taxation are applied, we obtain the following results:—

W.	D.	S.	L.	Carlukc, Douglas, and Lesmahagow.
W.	D.	—	—	Law, Carnwath, and Thankerton.
—*	D.	—	L.	Crosslaw.
W.	—	—	—	Crawford, Blackwood and Kirkmuirhill, Kirkfieldbank, Braidwood, Roberton, Forth, and Symington.
—	—	S.	—	Leadhills.

In the above the initial letter only is used to indicate the purpose.

\* Water in this district is supplied by the Burgh of Lanark.

### Water Supplies.

**Public Supplies.**—A stream known as Camps Water, which with its tributaries drains the north-eastern portion of the Parish of Crawford, was investigated in the year 1902 by the Upper Ward District Committee in connection with a proposal to have a general scheme of water supply for the whole Upper Ward area. During the year 1912 the Middle Ward District Committee and the County Council promoted a Bill for the securing of this desirable source of supply. The provisions of this Bill had to be carefully considered from an Upper

Ward point of view by a Committee, and a remit was made to the District Clerk and Medical Officer to report on the needs of the Upper Ward District in relation to Camps Water.

*Symington.*—The supply from the springs on the lands of St. John's Kirk was turned on in the month of September, and has been giving every satisfaction.

*Carluke.*—The proposal to utilise the overflow from Law Reservoir for Carluke was reported upon by the Engineers, who suggested it would be desirable, before adopting any scheme, to have some observations made for a period of some months in order to ascertain the number of days when there is an overflow.

*Douglas Water.*—Investigations have been proceeding regarding an additional supply for this village, and numerous inspections made by the Medical Officer and Sanitary Inspector. No definite arrangement, however, has yet been come to with the Coltness Iron Company.

*Hazelbank.*—No scheme has yet been formed for this district, the matter still being in the hands of the Committee.

**Private Supplies.**—*Upper Ward District Hospital.*—The private supply to the Hospital was complained of during the year as being inadequate. An inspection was made by the Medical Officer, and the Hospital Attendant was instructed to measure the flow. This was done, and the flow was found to be about 1 gallon per minute, or 1,440 gallons per day. Subsequently the District Clerk communicated with the Clerk of the Carluke Water District Sub-Committee, asking them to make arrangements to provide the Hospital with a constant supply of water from Carluke main pipe.

*Lammerlaw Farm, Elsrickle.*—A sample of water was received from the tenant of this farm, the analysis of which did not show any distinct evidence of pollution. Another sample was requested, the physical characters of which showed the water to be unfit for domestic or dairy purposes. A new supply was provided during the year, and a sample taken from this supply proved to be of great purity.

*Braidwood.*—The water supply to the Old Tollhouse at Fiddler's Bridge was complained of during the year. This supply is drawn from a deep unprotected well by means of a force pump. Two samples of water were taken for analyses, one in the month of June, and the other in September. The physical characters in the first sample showed evidence of the presence of earthy and vegetable particles. The analyses of the second sample showed the water to be satisfactory.

*Hardington Mains, Lamington.*—The lack of a proper water supply for domestic and dairy purposes was investigated by the Sanitary Inspector, and two samples were taken for analyses (see Nos. 13 and 14 of table). The first sample was taken from a pump well in the boiler-house, and results of analysis indicated that the water was of doubtful purity. The second sample was taken from a pipe discharging into a trough at the farm steading, and showed no evidence of contamination, but the physical characters were unsatisfactory.

TABLE J.—SAMPLES OF WATER ANALYSED IN THE PUBLIC HEALTH LABORATORY.

Results of Analysis stated as Parts per 100,000.

No.	Chlorides as Cl.	Nitrates as Nitrogen.	AMMONIA AS NITROGEN.		Oxygen Absorbed.	Total Hardness.	Total Solids.	Colour, Platinum Standard.	Water Supply.
			Free.	Albumi- noid.					
1	1·2	—	·0019	·0043	·110	—	14·0	—	Lammerlaw House, Biggar.
2	2·4	·048	·0012	·0030	·130	8·8	14·2	2·2	Do.
3	2·2	·016	Nil.	·0012	·230	69·5	87·0	2·1	Upper Spring, Hallcraig, Carluke.
4	2·3	·024	·0076	·0019	·350	37·6	42·6	4·6	Lower Spring, Hallcraig, Carluke.
5	2·0	·274	Nil.	·0019	·480	6·29	26·0	—	Toll House, Fiddler's Glen, Braidwood.
6	1·4	·020	Nil.	·0019	·080	5·86	14·6	2·0*	Do.
7	1·2	·000	·0004	·0056	·220	13·6	16·6	2·2	4-inch tile due west, Brownfield Steading.
8	1·1	·011	·0004	·0072	·255	2·8	4·6	2·2*	Thorneyhill, Carmichael (Lanark Supply).
9	1·4	·040	Nil.	·0017	·085	8·0	40·0	1·4	Lammerlaw Farm, Ponfeigh.
10	2·8	·260	Nil.	·0016	·075	13·6	37·6	1·8	Station House, Ponfeigh.
11	1·6	·044	·0011	·0126	·305	13·3	24·0	3·1	Parkhead Cottages, Corehouse.
12	2·5	·115	·0033	·0100	·30	16·7	37·6	3·8*	Milnwood, Braidwood.
13	1·9	·600	·0041	·0132	·195	12·1	22·6	2·3*	Hardington Mains, Lamington.
14	1·2	·073	·0038	·0081	·315	5·29	16·4	3·0*	Do.

Nitrites were present in Nos. 2, 5, 10, 11, 12, 13 and 14.

\* Paper-filtered before colour estimation was made.

### Drainage and Sewage Disposal.

*Carlukc.*—The question of the prevention of pollution of Jock's Burn was still under consideration at the close of the year.

*Crawford.*—An improved system of drainage for this village has been under discussion, but nothing has so far been done.

*Braidwood.*—The question of forming a special drainage district for this village was discussed, and a report was prepared by the engineers showing a proposed scheme of sewerage, with an estimate of the cost of same. This report is quoted in the District Sanitary Inspector's Annual Report.

*Lesmahagow.*—The local Committee's engineers have during the current year prepared a report dealing with the question of the prevention of pollution of the River Nethan.

**Thankerton Creamery.**—In the Annual Report for the preceding year a short description of this creamery is given, with illustrations taken from the plans. The premises have continued to be fully taken advantage of by farmers in the surrounding district, and the co-operative movement thus set agoing is, I understand, yielding satisfactory results from a commercial point of view. The description above referred to stated that the drainage from the creamery was discharged to the village drainage system, and consisted mainly of washings from the milk cans and other vessels. This description now requires to be amended, in respect that during the months of June, July, and August a considerable quantity of cheese is made, when some of the whey produced is discharged into the drainage system. During the Glasgow Fair Holidays the greater portion of the milk supply is made into cheese.

In the month of *July, 1911*, the tenant of Covington Mill Farm complained that the Glade Burn, which receives the effluent from the irrigation field, was seriously polluted, and had affected his cattle watering at that stream. There was reason to believe that the tenant of Boat Farm, whose cattle graze on the other side of the stream, had also cause for complaint. This complaint was investigated by the Rivers Inspector (F. M'Arthur) and by the County Medical Officer, who found that the stream had undoubtedly been polluted, as evidenced by the condition of the bed of the stream, which was coated with a fungoid growth. The pollution was believed to have been due to a discharge of whey from the creamery into the drainage system at a time when the sewage had not been properly irrigated during the cutting of the hay crop on the irrigation field. Later the whey was said to be all returned to the farmers for pig feeding, and there was no further trouble that year.

No complaint of pollution reached this department during *1912*, and since then pollution of the stream has not been seriously complained of. Complaints of smells from the irrigation fields, and of damage thereto, have however been made, and these are fully referred to under Thankerton Drainage. Complaint of smells from the whey tank at the creamery and of smoke nuisance from the creamery chimney were also made during *1912*, in connection with which steps were taken which removed cause for complaint.

**Thankerton Drainage.**—Thankerton Special Drainage area was formed in 1902. The latest returns shew that there are 64 dwelling-houses, with a population of 183, within the district. This population is considerably increased by visitors during the Summer months. The only industry within the area of the district is the creamery, which has an assessable rental of £70. The district also takes in the railway station. The main part of the village is to the west of the railway, but there are also a considerable number of houses on the east side. In connection with an inquiry by the Local Government Board, an ordnance survey tracing has been prepared shewing the area of the district and the present sewage

disposal arrangements. The outfall sewer is laid in the road leading to Thankerton Mill (disused), where there are three dwelling-houses, one occupied as a boarding-house, and the other two by *Summer visitors*.

About 100 yards from these dwelling-houses the outfall leaves the road in an eastward direction (originally in an open channel) and takes a line through a field to a covered tank. The effluent from this tank is irrigated on the adjacent lands. When the drainage scheme was inaugurated, the irrigation was confined to an area of some  $2\frac{1}{2}$  acres—the field adjacent to the mill houses in which the tank is situated.

Prior to 1911 the District Sanitary Inspector had complaints from the occupiers of the mill houses.

In the *Summer of 1912* further complaints had been made to the local committee of management, and in the minute of their meeting held on *20th August, 1912*, are referred to as follows:—

The members of committee considered the drainage question and visited the fields on which the village drainage was spread, and regarding which complaint was made by neighbouring householders. The Chairman remarked that septic tanks to purify the effluent might be found preferable to irrigation, and suggested that views of experts might be obtained on the subject for the committee's guidance, but the majority were of the opinion that there was little cause to complain of the existing method even now; and no cause if the drainage were somewhat better controlled and distributed, and it was agreed that a representation be made to the users of the drainage to clean and sort the water courses surrounding their fields, and generally, to improve the distribution.

At a subsequent meeting of committee the last section of the paragraph was amended so as to read—

and that there would be no cause if the sewage could be distributed over a greater area.

Owing to the difficulty of dealing with the question the Medical Officer was consulted, and he on *24th March, 1913*, along with the District Sanitary Inspector made an inspection of the sewage outfall and disposal works, meeting the tenants of Covington Mill (Mr. Brown) and Boat Farm (Mr. Ballantyne). The notes of this Inspection shew

that at the time of inspection there was a strong flow of weak sewage, which was not passing through the tank but was being led straight on to the Boat Farm lands from which it passed into a ditch which joins the Glade Burn. The Medical Officer explained to Mr. Ballantyne that the discharges from the creamery were rich in organic material and very liable to become offensive, but that when properly diluted and irrigated no cause for complaint should arise. Indicated that the local committee should consider proper disposal of the sewage on the various fields, and, that if need be, a reasonable sum should be allowed to the farmers for the irrigation of the sewage on their lands. Suggested that samples of the whey and washings from the creamery should be obtained. Also called upon the Chairman of the local committee (Sir Nathaniel Dunlop), with an ordnance

survey sheet showing the drainage district, and discussed with him the results of the inspection and the best means of improving the sewage disposal. He undertook to consider with the local committee how the drainage could be run on to ground further south than the present outfall. Summarised, the results of this inspection indicated that there was no good reason why the whole sewage of Thankerton should not be properly purified on the lands available provided that the creamery discharges were sent off fresh, and that as little whey as possible was discharged to the drainage system, and also that the irrigation received proper attention.

A short time after this inspection (*11th April*) a meeting of the local committee was held. The Medical Officer and Rivers Inspector attended this meeting, along with the District Clerk and Mr. George Dunlop, W.S., representing the Trustees of Carmichael Estate on which the irrigation fields are situated. Verbal complaints by the occupiers of the mill houses were again made whilst the committee were inspecting the sewage disposal works. At this meeting it was agreed (1) to abandon the field close to the mill houses (Marshall's field) for the purpose of irrigation and to extend the irrigation area by carrying the tank effluent direct in a new channel further east on to Boat Farm; (2) to clean out the tank; and (3) to have the channel leading to the tank inlet entirely covered up so as to keep down smells as much as possible, and it was remitted to two members of committee along with the Drainage Superintendent to have these improvements at once carried out. Suggestions to remove the outfall and tank south of the present outfall, and further away from the complainers' houses, were also considered, but the Medical Officer thought that the proposals agreed on would remove any good cause for complaint.

These alterations were duly carried out, the factor on the Carmichael Estate, who is also a member of the local committee, taking a special interest in the work, but still complaints continued to be made. First, the occupier of Rowantree Cottage, one of the mill houses, complained in a letter of *24th May*, in which he stated:—

At present the cesspool has been cleaned out, but all the filth has been lying in the field for the past three weeks, and although in wet or breezy weather the smell is not very noticeable, yet in certain directions of the wind and whenever warm weather arrives the stench is almost unbearable.

The factor on Carmichael Estate also wrote on *18th June*, that on account of the large amount of whey from the creamery being discharged into the drain, the hay on the new irrigation field was being destroyed, and that if it continued the irrigation scheme would be a failure.

These complaints were carefully inquired into, and numerous inspections made during *June, July and August*.

Thus, on *21st June*, the Rivers Inspector paid a visit and took samples of the crude sewage and tank effluent. The District Sanitary Inspector was also present at this inspection, the notes of which were as follows:—



Made an inspection to-day (Saturday) between 10.50 a.m. and 2.30 p.m., and took three samples of the crude sewage and three of the tank effluent at the sewage works. In the course of the visit met Mr. Plenderleith, the Creamery Manager, and Mr. Ballantyne, of Boat Farm. It was a warm dry day but not sultry. No odour could be detected in the vicinity of the tank or irrigation field. An odour could, of course, be easily detected when close at the tank outfall and at the inlet to the tank when some of the boards were removed.

On examining the sewage outfall it was at once evident that it contained discharges from the creamery. It was opalescent in character, and had a sourish smell. It continued like this all the time of the inspection, but was not so white when leaving about 2.30. The tank effluent was much worse in appearance than the crude sewage. It had a deeper colour and contained much more suspended matter, and remained like that all the time.

With regard to the irrigation field, I found the tank effluent being run on to the hay at the end nearest to the tank. The main channel has been formed right along to the fence—a good many yards. The distribution is changed every two or three days. The hay crop on the sloping ground seemed fairly good in places, but Mr. Ballantyne showed me a part of the ground where the hay had been quite destroyed. See samples. If these samples are compared, the difference will be easily apparent, yet Mr. Ballantyne assured me that the growth on the poor sample was originally better than that on the other. This bad effect may, however, have occurred by putting too much effluent on the one place and not spreading it enough.

The samples taken were examined in the Chemical Laboratory on *2nd July*, the figures for acidity being as follows:—

*Crude Sewage.*—Dense, opaque whitish liquids, with small white, curdy flocculent deposit, and a foul odour.

No. 1, taken at 11.55 a.m.,	-	282.6	} Acidity as Lactic Acid— Parts per 100,000.
„ 2, „ 12.20 p.m.,	-	264.6	
„ 3, „ 1 „	-	43.2	

*Tank Effluent.*—Physical characters same as crude sewage, but opacity more dense.

No. 1, taken at 11.55 a.m.,	-	538.2	} Acidity as Lactic Acid— Parts per 100,000.
„ 2, „ 12.20 p.m.,	-	556.2	
„ 3, „ 1 „	-	369.0	

Another inspection was made by the Rivers Inspector on *10th July*. The notes of this visit and analyses of the samples taken indicated that whey was still being discharged from the creamery, and were as follows:—

Inspected the drainage outfall and irrigation field, &c., and also called at the creamery. Also took samples of crude sewage, tank effluent, main drain outfall to the Glade Burn, and of the growth on the stones in the River Clyde, a few yards below its junction with the burn.

When the first samples were taken there was a small flow of comparatively weak sewage, slightly opalescent in appearance. The tank effluent at the same time looked stronger and was more opalescent. About 2 o'clock, however, the flow increased and the sewage was much stronger, indicating the discharge of whey from the creamery,

Found the tank effluent discharging on to a pasture field adjacent to the hay meadow. This had newly been done. With regard to the condition of the meadow, the parts affected by the effluent were more easily seen to-day as the grass was longer than at my last inspection, affording a greater contrast. The effluent discharging from the main outfall drain near the bridge was found to be quite clear in appearance. Below, however, and in the Clyde itself for about 200 yards down, the fungoid growths indicated pollution.

Had an interview with Mr. Ballantyne of Boat Farm, who has strong objection to the sewage, in its present condition, going on to his ground. Besides spoiling the hay, he alleged that what does grow is of poor quality. He also suggests that the sewage will have the same effect on his pasture. He also complains of the pollution of the Glade Burn to which his cattle have access for drinking, and mentioned that fishers were complaining of pollution of the Clyde, and that recent complaints had been before the Parish Council.

At the creamery, Mr. Plenderleith stated that if these complaints did not cease there was a possibility of the creamery being closed. Indeed, he said, they were seriously considering such a step. Assured him that we would deplore any such action. With regard to a previous suggestion that the Association might start a piggery, and thus be certain of using up all the whey produced, he now said they would not consider it.

The chief difficulty now seems to be to get the effluent irrigated. Perhaps if the committee acquired the ground and directly controlled the irrigation it would be the best arrangement.

The analyses of the samples taken at this inspection were as follows:—

	ANALYSIS, PARTS PER 100,000.				
	1. Crude Sewage, 12 noon.	2. Crude Sewage, 1.45-2.0 p.m.	3. Tank Effluent, 12 noon.	4. Tank Effluent, 1.50 p.m.	5. Main Drain Outfall to burn, 3 p.m.
Oxygen Absorbed, - - -	44.1	170.0	114.3	36.4	26.1
Free Ammonia as Nitrogen,	2.28	6.89	4.72	4.04	2.52
Albuminoid ,, ,, ,,	2.20	31.72	14.08	6.56	2.68
Total Ammonical ,,	4.48	38.61	18.80	10.60	5.20
Solids: Total, - - -	322.0	4108.6	1475.0	389.0	105.0
,, Volatile, - - -	172.0	3663.0	1296.0	349.0	80.0
,, Suspended, - - -	5.0	106.2	92.6	18.8	3.0
Acidity as Lactic Acid, -	12.8	336.0	105.6	16.6	17.6

## PHYSICAL CHARACTERS.

No. 1. Greyish liquid, very turbid, small greyish flocculent deposit. Faint whey odour.

No. 2. Dense milky opaque liquid, small whitish, curdy and flocculent deposit. Distinct sour whey odour.

No. 3. Whitish opaque liquid, small greyish flocculent deposit. Marked whey odour.

No. 4. Very similar in appearance to No. 1., but with marked whey odour.

No. 5. Greyish liquid, turbid, type just visible, very small greyish flocculent deposit. Very foul odour.

On *21st July*, a complaint of pollution of the Glade Burn, made by the Parish Council of Covington, was submitted to the Upper Ward Public Health Committee, and the Medical Officer was instructed to deal with it. It was explained that the matter had engaged the Medical Officer's attention for some time and that from the results of analyses of samples of sewage effluent he had obtained, there was ample evidence that a considerable quantity of whey was gaining access to the drainage system, which was making it almost impossible to purify the sewage by irrigation. The Medical Officer also again visited Thankerton on the same day, in company with the District Sanitary Inspector. No pollution seemed to be occurring at that time, but evidence of previous pollution was observed. He also made a careful inspection at the creamery, and made the following notes of the visit:—

At the creamery met Mr. Plenderleith and learned that cheese-making is, at this time of the year, the chief method of disposing of the milk. During the Fair Holidays it is all practically made into cheese. He estimated the production of whey, about 11 o'clock and 3 o'clock in the day, to be 450 gallons each time, the procedure being somewhat as follows:—In the general purposes room there are three long vats or tanks. Two of these are identical in construction and are provided with jackets in which hot or cold water is placed, either to heat or cool the milk. In these two vats the curd is prepared. When ready for removal the whey is run off and the curd is thrown into the third vat, which is fitted up with a strainer, and here the cheese is worked up into a body. Any liquid escaping from this strainer is allowed to go on to the floor with the rest of the rinsings and washings, but the whey from the other two vats is collected in the whey tank. By occluding the ordinary drainage aperture and opening the whey one, the whey tank is thus filled. The tank has a capacity of 1,500 gallons, so that it is capable of holding more than a full day's production of whey. Of the 40 members who send their milk to the creamery, a considerable number keep pigs. The construction of the whey tank is of considerable interest. There is an opening at the top from which can be seen the level of the liquid. At the side of the tank furthest away from the building there is a manhole with a cover, which was open. At the bottom of the manhole there is an outlet valve in the tank, which is operated by a rod connected with an ordinary turn-cock. In this way the tank is said to be cleaned out once a year. In this same manhole there is an overflow pipe, both discharges going direct to the drain connected

with the main outfall of the creamery. After discussion with Mr. Plenderleith, impressed upon him two points (1) the need for getting the members of the creamery to utilise the whey, and (2) the desirability of letting any whey that may escape to the sewer off from the bottom cock of the tank as a driblet. This outlet could be controlled so as to empty slowly over the 24 hours, instead of, as at present, being allowed to discharge in a few minutes, twice daily. Mr. Plenderleith promised to give effect to this. Subsequently, saw Mr. Forrest, who looks after the local drainage, and mentioned to him what I had suggested. A sample of whey from the tank was also taken, and when examined next day in the laboratory, was found to contain an acidity equal to 496.0 parts per 100,000, which increased in four days to 744 parts per 100,000.

On *26th July*, the Medical Officer and District Sanitary Inspector made another inspection at the creamery, when the whey tank was found to be overflowing. The manager stated that, after the Fair Holidays, 450 to 480 gallons would be about the total daily production of whey. The irrigation field was also inspected in company with the creamery manager, Mr. Ballantyne the farmer, and the Drainage Superintendent.

Mr. Ballantyne pointed out the damage that had been done to his field, and the deficient crop of hay that had been obtained from the upper part where the new distributing channel had been cut. Suggested to the Superintendent that under his instructions he ought to improve the present means of irrigation. Thus (1) the new main carrier is somewhat flat, especially at the point where the liquid had overflowed continuously, and where the hay crop had been affected; (2) at the present point of discharge a track should be cut getting access to the main outfall field drain, so that if necessity arose, from either the character of the sewage or otherwise, to stop irrigation, then, as a choice between two evils, it would be better to allow the liquid to go unirrigated; (3) provision should be made for irrigating the lower part of the meadow on Boat Farm, so soon as the hay crop is removed. This means the using of a certain channel on Marshall's meadow. The outfall to the stream was inspected, and no serious cause for complaint was found. Inspected the junction of the burn with the Clyde, and found that the edge of the river was coated with a fungoid growth. There was abundance of minnows, however, in both the Clyde and the burn, and evidently any pollution taking place recently has not had any serious effect. Finally discussed the question of payments being made to Mr. Ballantyne (1) for loss of hay, and (2) in the way of an annual allowance for irrigating the sewage. Mr. Ballantyne was evidently unwilling to have anything to do with the sewage, but ultimately all parties seemed to be agreed that a money payment should be made. Mr. Plenderleith suggested that any damages and claims should be assessed at once.

With reference to the last part of these notes, it should be explained that Mr. Ballantyne had lodged a claim of £10 for damage and loss of crop.

On *18th August* the Rivers Inspector made another inspection, and reported that the tank effluent was discharging on to the far end of the irrigation field, and that the field was now looking well, the growth on

the upper parts especially being green and luxuriant. It was also reported that the track to gain access to the main field drain referred to in the Medical Officer's notes of 26th July had been cut (but, of course, had not been brought into use), and that the effluent to the burn was quite good. The pasture at the point where the sewage had been discharged during the hay cutting had a burned-up appearance. In an interview with Mr. Plenderleith he was informed that no whey was at that time going to the drain owing to the increase in the demand for milk and to the quantity received from the farmers becoming less.

On *21st August*, when in the locality, the Medical Officer and District Sanitary Inspector made another inspection and again met the farmer. The drainage outlet to the burn was at this time running like clear water. They found, however, paper and other solid matter from the tank being carried into the distributing channel, which suggested that the tank was not working properly, and the District Sanitary Inspector was to inquire into the cause of this with the Superintendent. With regard to Ballantyne's claim, the Medical Officer explained to him that his own view was that the committee should make an arrangement for Ballantyne to take all the sewage for disposal on his lands, and that an annual payment should be made.

During all these later inspections no question as to nuisance from smells was raised, and no offensive odours liable to affect the householders at the mill were detected, the chief difficulty, as will have been seen, arising in connection with the question of irrigation.

Towards the *end of August and beginning of September*, however, three written complaints were received, two from the occupier of Millend House and one from the occupier of Rowantree Cottage. These complaints were as follows:—

(1)

Millend House,  
Thankerton, 30th August, 1913.

DEAR SIR,

THANKERTON DRAINAGE.

Until lately we have not been troubled with the obnoxious odours previously complained of, but this week past, for some reason they are again very much in evidence. I would therefore be obliged if you would give the matter your *immediate* consideration, as it is most serious for me with visitors staying at Millend. I may say that I solicit your support in this important matter, as it is not my desire to adopt stronger measures. Thanking you in anticipation,

I am, Yours sincerely,

ALICE MILLER.

A. W. PATERSON, Esq.,  
*District Clerk,*  
Lanark.

(2)

49 Nithsdale Road,  
Strathbungo, Glasgow, 3rd September, 1913.

DEAR SIR,

## THANKERTON DRAINAGE.

I regret that there is still very serious cause for complaint regarding above. In spite of the alteration in the flow from the sewage tank the smell, during the hot weather especially, has been simply dreadful at times. When an east wind is blowing we get the full benefit at the mill, and during the summer there have been three cases of throat trouble among visitors at my house there, one being of a serious nature and requiring medical attention. Rightly or wrongly, visitors blame the drainage system for this, and, as it stands at present, the thing is an intolerable nuisance and a danger to health. This being so, immediate steps should be taken to remove it, but as those in charge on the spot will evidently never do so, I trust you, as Medical Officer of Health, will apply the necessary spur to compel immediate attention to it.

Yours faithfully,

ANDREW GALT.

Dr. WILSON,  
Hamilton.

(3)

Millend Boarding House,  
Thankerton, Lanarkshire, 5th September, 1913.

DEAR SIR,

I beg to appeal to you *re* the present unsatisfactory state of the drainage system of Thankerton, Lanarkshire. The odours arising from the fields over which the discharge from the drains flow are unbearable, and as my residence is placed in close proximity to said fields I suffer particularly from this serious menace to health. My guests seriously complain of this matter, and as it directly affects my means of livelihood I have appealed to the local authorities, and also the County Authorities, without result. Your gracious consideration and attention in this matter would greatly oblige,

Yours very sincerely,

ALICE MILLER.

THE SECRETARY,  
Local Government Board for Scotland.

Further careful inspections and inquiries were at once made into these complaints by the Rivers Inspector, which showed that at that time, when the wind from the east, objectionable odours were undoubtedly carried towards the mill houses, and that this condition was probably due not so much to the character of the sewage discharging to the tank at the time of inspection, but mainly to the condition of the tank, which was found choked up with solid matter, mostly conveyed there with the

creamery drainage, and to be emitting very objectionable smells especially when disturbed. It was impossible to clean out the tank then, as the nuisance would have been greatly increased, but temporary measures were at once taken to minimise cause for complaint. The notes of these inspections are also given as they are of considerable interest:—

*4th September, 1913.*—Inspected to-day in connection with Miss Miller's complaint. Interviewed Mrs. Miller and Mr. Forrest, who looks after the drainage.

There was no appearance of whey coming from the creamery, and the effluent had the appearance of ordinary sewage. The tank effluent was discharging on to the middle portion of Ballantyne's meadow. The effluent from the main drain to the burn was perfectly clear. (See sample.) There was no pollution of the burn. The fungoid growths in the burn and Clyde have disappeared. A dozen cattle (10 stirks, a cow, and a bull), and 2 horses, were grazing on the irrigated meadow.

With regard to the complaint, made careful observations. There was a fresh east breeze blowing right over the sewage works in the direction of Millend House. At first (about 12 o'clock) on the Mill Road and up to a few yards from the tank I could hardly say I felt any odour. A distinct odour, however, could be felt close to the tank and right along the main distributing channel, especially on the far away portion of Ballantyne's field. Traversing the channel the odour was very strong indeed. This channel has recently been cleaned out and the deposit removed laid to the side. As already noted I had detected no odour on the road opposite the tank. This was before I had interviewed Mrs. Miller, and I then had the idea that the cleaning of the channel, and disturbing of the deposit had given rise to the odours complained of, but on walking up the road after leaving Mrs. Miller about 1.30, I detected a strong odour when I came almost in line with the tank.

Mrs. Miller complained bitterly of the smell last week and this week. She said it had been felt even at the back of the house. Visitors coming down the road complained of it. They felt it most when the wind was from the east, as it had been for 4 or 5 days. She was inclined to blame the creamery, and feared her business would be affected if the conditions were not improved. She said her daughter had gone over to the tank on Wednesday, and found the sewage discharging white. Mr. Forrest also knew of the smells. Assured her we would do everything possible to remove cause for complaint.

I afterwards called on Mr. Forrest. He had felt the odours too. The distributing channel had been cleaned out at the beginning of the week. He could not explain the recurrence of the smells as there had been no complaint all summer, but Mr. Ballantyne had mentioned to him that while cutting the hay on his meadow the odour was very bad, and that he suffered from "sore throat" during that time. Of course there was little or no wind then. I arranged to meet him to-morrow to inspect the outfall and tank together, and again go into the matter carefully.

*5th September, 1913.*—As arranged, made a further inspection at Thankerton in company with Mr. Forrest, between 9 and 10 a.m.

The wind was still in the same direction as yesterday, and the odour from the sewage tank and field was easily perceptible. As I found yesterday, the odour was very strong close to the tank and along the distributing channel.

Had the cover of the tank removed and a close inspection made of the contents of the tank. When the boards were taken off the odour was abominable. Found the right-hand section of the tank completely sludged up, while the left-hand section, as far as could be ascertained, contained about 18 inches of sludge. When the sludge in the right-hand section was the least bit disturbed the odour was almost unbearable. The nature of the sludge, due to the creamery drainage, is quite different from what is found in a tank receiving ordinary domestic sewage, and is evidently composed largely of whey curd. The tank was cleaned out as recently as the beginning of May (when both sections were full of sludge), and in ordinary circumstances would not have been in its present condition. There can be no doubt whatever but that the discharges from the creamery are responsible for the difficulties which have arisen in disposing of the sewage. I understand that no whey has been discharged to the drain for three or four weeks now, but the nuisance caused is the result of the discharges from the creamery during the three months or so of the cheese-making season.

For an immediate remedy the tank would require to be cleaned out and the channel deposits removed, but if this were attempted just now the nuisance caused would be very great. The channel deposits might, however, be taken away and disposed of in such a manner as to give no cause for complaint.

As a temporary remedy, have arranged for the top of the tank to be covered with earth, and for the overflow at the inlet end on the left-hand section to Marshall's meadow to be closed up, with a view to preventing, if possible, any odour being blown in the direction of the mill houses. This is to be done to-morrow. The tank outlet and this overflow are in a direct line, and, with an east wind, odours forming in the tank would likely be blown in the direction of the houses.

For a permanent remedy, the whey discharges, I fear, will require to be discontinued, or some steps taken at the creamery to render the discharges incapable of interfering with the satisfactory disposal of the sewage. To remove the tank to another site would not get over the difficulty.

*8th and 9th September, 1913.*—Made further inspections at Thankerton on these dates, in the evening about 8 p.m., on the 8th, and about 9.30 a.m. on the 9th, staying overnight at Millend House.

Found that the tank had been covered with earth for a depth of about six inches over both top and sides, and that the outlet to Marshall's field had also been covered up.

On Monday night the wind was from the west, and on the Millend House side of the tank no odour could be detected. On the other side, along and close to the main channel there was a little odour which the wind did not carry very far. The conditions at the tank have been much improved by the earth covering.



On Tuesday morning there was practically no wind, and except close to the effluent channel no odour could be detected.

Again interviewed Mrs. and Miss Miller, who repeated their complaints, and stated that they would not cease to complain until something satisfactory was done to remove the nuisance. They suggested that the tank should be taken away from its present position altogether.

Also called on Forrest, and asked him to remove the channel deposits, and have them carefully buried where they would not give rise to any nuisance. He promised to have this attended to at once. Told him also not to attempt to clean the tank until he received instructions from here.

### Scavenging.

*Leadhills.*—Consideration was given by the local Sub-Committee to the best means for the removal of refuse from this district. It was subsequently agreed to have the public ashpits repaired and the refuse removed thrice weekly; that the private ashpits should be emptied more regularly; and that more attention should be given to the cleanliness of the village by the scavenger appointed by the Committee. This arrangement has proved quite satisfactory.

*Lesmahagow.*—The scavenging arrangements of this district proved quite satisfactory during the year. An inspection was made by the Medical Officer of several properties where the question of sanitary conveniences was under discussion and the abolition of several ashpits suggested.

### Nuisances.

*Carlisle.*—This nuisance related to the want of proper sanitary conveniences in High Street and Rankine Street. The *locus* was inspected by the Medical Officer and Sanitary Inspector, and the notes made were as follows:—

The premises include two lots of dwelling-houses. That fronting High Street, Nos. 47 and 49, is a two-storey tenement, the ground floor being occupied as an ice-cream shop and as a plumber's workshop. On the upper floor are two dwelling-houses, reached by an outside stair at the rear. The plumber employs several workmen, who are entitled, under the Workshops Acts, to have reasonable provision in the way of sanitary conveniences. For the ice-cream shop, there is not only the people occupying and serving the public, but the public themselves, the shop being a place of refreshment.

One of the dwelling-houses upstairs is occupied by the plumber, who has put a slop sink inside the dwelling, with a gravitation water supply. For the other house there is a slop sink on the stair, but the water supply is carried from a wash-house common to all the houses.

Fronting Rankine Street, 34 and 38, are two one-apartment dwellings. These are without any means of disposing of liquid household refuse. They obtain their water supply from the wash-house already referred to.

For these six tenancies the only accommodation for the collection of excremental refuse is an ashpit and privy situated between the two lots of property, but nearer to the Rankine Street property than to High Street. The ashpit is simply a wooden enclosure. The privy is a brick-built structure abutting on two coal-cellars. There is a surface grating outside the ashpit, evidently connected with an underground drain. This was surrounded with foul liquid. The drainage goes towards High Street, where there is a public sewer at such a depth as can drain the whole of the premises. The Sanitary Inspector suggested the provision of two water-closets on ground adjoining the wash-house, which seemed quite reasonable, also a proper ashpit.

This nuisance was the subject of legal proceedings during the year 1913.

*Lawhill.*—This nuisance related to a large two-storey tenement dwelling, the chief cause of complaint being the want of proper means of drainage, but other sanitary defects were discovered. The Medical Officer and Sanitary Inspector inspected the *locus*, and the following notes were made :—

The water supply is obtained from a stand-pipe at the corner of the property. As the houses on the upper floor are entered by a stair to the rear of the building, a considerable distance has to be travelled to get to this water supply, some tenants having to travel the whole length of the tenement at the back and the whole length of the tenement at the front to reach the well.

The drainage at the front, for the houses on the ground floor, is a surface channel, which is in a bad state of repair, and altogether unsuitable for the purpose. The contents enter an underground drain at the west end of the tenement. The drainage from the houses on the upper floor enters an underground drain at the rear, but the surface grating giving access thereto was choked at time of visit.

The privy ashpits were foul. A large quantity of ashpit refuse was lying on the ground near the entrance to the wash-house.

The dwellings on the ground floor suffer from dampness, especially along the back wall, the ground surface being some inches above the floor level. As the water supply in this district is somewhat hard, rain water is collected in water barrels, and these abut on the back wall, conducing to dampness.

This nuisance was also the subject of legal proceedings during the year 1913.

*Carnwath.*—Notice was served on the proprietor of a bakehouse and dwelling-houses in Main Street, pointing out the existence of a nuisance at these premises in respect of want of proper sanitary conveniences, and requesting that the existing ashpit be reduced in size and rendered watertight, and that the two existing privies be replaced by a water-closet. An inspection was made of the *locus*, and the proprietor interviewed, when he agreed that the improvements suggested would be carried out.

### Dairies.

**Veterinary Inspection of Dairy Herds.**—The following tabular statement gives the results of inspection of all dairy herds in the district inspected by the Veterinary Surgeon during the season ending May, 1913, viz. :—

TABLE STATEMENT, SHOWING RESULTS OF THE VETERINARY INSPECTION OF DAIRY HERDS IN THE UPPER WARD DISTRICT, CLASSIFIED ACCORDING TO PARISH.

PARISH.	Herds.	Cows.	Suspected Tubercle.						Cows with Abnormal Conditions of Udder.					
			Samples of Milk.	Results.				Tubercle.	Mammitis.	Eruption on Teats.	Induration N.T.	Indurated Teats.	Atrophy.	TOTAL.
				Smear.		Biological.								
				+	-	+	-							
Biggar, -	29	434	1	...	1	...	1	...	6	2	13	...	14	35
Carlake, -	72	1,154	...	...	...	...	...	...	4	2	18	...	35	59
Carmichael, -	27	525	1	1	...	...	...	1	7	3	17	...	25	53
Carnwath, -	106	1,635	4	2	2	...	2	2	12	5	33	...	53	105
Carstairs, -	33	727	5	2	3	1	2	3	7	4	11	...	28	53
Covington and Thankerton, } 18		233	...	...	...	...	...	...	3	2	6	...	12	23
Crawford, -	11	71	...	...	...	...	...	...	...	...	...	...	4	4
Crawfordjohn, -	36	395	1	...	1	...	1	...	1	1	6	...	15	23
Culter, -	19	155	...	...	...	...	...	...	1	1	5	...	2	9
Dolphinton, -	22	190	...	...	...	...	...	...	...	...	4	...	8	12
Douglas, -	26	350	1	...	1	...	1	...	2	5	5	...	10	22
Dunsyre, -	12	183	...	...	...	...	...	...	1	2	5	...	8	16
Lamington and Wandel, } 12		96	...	...	...	...	...	...	1	...	1	...	1	3
Lanark, -	38	488	1	...	1	...	1	...	11	7	4	...	18	40
Lesmahagow, -	189	3,300	6	2	4	...	4	2	29	22	61	...	115	229
Libberton, -	32	534	...	...	...	...	...	...	8	...	12	...	16	36
Pettinain, -	20	365	...	...	...	...	...	...	3	3	6	...	11	23
Symington, -	17	139	...	...	...	...	...	...	2	2	...	...	4	8
Walston, -	31	203	...	...	...	...	...	...	2	1	7	...	4	14
Wiston and Roberton, } 22		288	2	1	1	...	1	1	3	...	4	...	9	17
Total, -	772	11,465	22	8	14	1	13	9	103	62	218	...	392	784

When the smear proved positive no biological examination was done.

To the total figures for abnormal conditions of udder should be added 13 cases of suspected tubercle which gave negative results.

This shows that 22 samples of milk were taken from suspected udders, and that 9 of these gave positive results. So soon as these results were obtained the owners were communicated with as to the disposal of the animal. The Sanitary Inspector kept in touch with each case, and reported that in two instances the cows had been slaughtered at the farms, and in the other four sold to butchers in the open market.

### Offensive Businesses.

**Private Slaughter-houses.**—The renewal of licenses to all occupiers of private slaughter-houses was granted, with the exception of one at Haywood, it being decided that the butcher here should slaughter at the Public Slaughter-house being erected at Forth. A complaint was received from the butchers in Lesmahagow Village, stating that it was unfair that the butchers in Coalburn and Blackwood should be allowed to continue slaughtering in private premises while they were slaughtering in Lesmahagow Public Slaughter-house. Subsequently it was agreed that these two licences, Blackwood and Coalburn, should be dropped from Whitsunday, 1913.

1 cow carcase was partially condemned at Forth, and another at Blackwood.

**Public Slaughter-houses.**—*Kirkfieldbank.*—A proposal to erect a slaughter-house near Kirkfieldbank was not agreed to.

*Forth.*—The building of this public slaughter-house was not quite completed at the close of the year. The cost of the building was estimated to be about £700. In the latter part of the year it was agreed that the dues to be charged in the meantime should be for cattle 2s., sheep 5d., swine 9d., and calves 4d.

*Carlisle Public Slaughter-house.*—These premises were opened on 24th November, 1903. The amount of business done each year during 1904-1912 is given in the following table:—

	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Cattle,	874	866	852	886	910	819	769	754	700
Calves,	1,102	1,044	1,108	1,454	1,482	4,799	6,159	5,012	4,730
Sheep,	1,161	1,038	962	1,017	1,137	1,389	1,353	1,341	1,385
Swine,	1,060	1,012	971	1,025	1,169	1,085	1,426	1,943	2,125

The following table shows the proportion of cattle totally or partially condemned as unfit for human food:—

Class of Animals.	Total number Slaughtered.	Carcases totally condemned.	Carcases partially condemned.	Carcases in which Organs only were condemned.
Oxen, Bulls, Heifers, ...	497	3	4	1
Cows, ...	203	17	30	11
Calves, ...	4,730	5	...	...
Sheep, ...	1,385	1	..	...
Swine, ...	2,125	3	28	2
Total, ...	8,940	29	62	14

The above condemnations were mostly due to the presence of tuberculosis.

The second-hand steam boiler for the plotting of pigs, referred to in the Annual Report for 1911, did not prove a success. Subsequently a boiler-house was built adjoining the tripery, and a new boiler obtained. Two new cranes of modern pattern, for hoisting carcasses, were also provided.

*Douglas Public Slaughter-house.*—These premises were opened about the Middle of August, 1903. The amount of business done each year during 1904-1912 is given in the following table:—

	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	To 9th Nov., 1912.
Cattle,	248	222	220	212	191	195	165	167	126
Calves,	31	25	22	14	41	16	8	1	2
Sheep,	369	369	264	300	409	341	392	354	275
Swine,	34	24	23	19	7	14	4	3	3

The organs of two sheep were condemned.

*Lesmahagow Public Slaughter-house.*—These premises were opened on 10th April, 1905, and the amount of business done each year is given in the following table:—

	1905. From 10th April.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Cattle,	- 461	648	739	740	691	632	611	621
Calves,	- 3	2	4	—	—	—	—	4
Sheep,	- 477	618	2,818	11,062	1,297	608	689	660
Swine,	- 48	58	74	62	52	47	106	81

The carcase of 1 cow was totally condemned, of 3 cows and 1 pig partially condemned, and the organs of another cow condemned.

The following table shows the results of the tests conducted on the water supply during the month of June, 1912. The water was found to be of good quality and suitable for drinking purposes.

The water was analyzed for various impurities and found to contain the following amounts per gallon:

Impurity	Amount per Gallon
Total Solids	1.2
Total Hardness	1.0
Calcium	0.8
Magnesium	0.2
Iron	0.05
Manganese	0.02
Lead	0.01
Copper	0.01
Chlorine	0.1
Fluorine	0.05

The above results show that the water is of good quality and suitable for drinking purposes.

### REPORT OF H. WARD

The following table shows the results of the tests conducted on the water supply during the month of July, 1912. The water was found to be of good quality and suitable for drinking purposes.

The water was analyzed for various impurities and found to contain the following amounts per gallon:

Impurity	Amount per Gallon
Total Solids	1.1
Total Hardness	0.9
Calcium	0.7
Magnesium	0.2
Iron	0.05
Manganese	0.02
Lead	0.01
Copper	0.01
Chlorine	0.1
Fluorine	0.05

The above results show that the water is of good quality and suitable for drinking purposes.

The water was analyzed for various impurities and found to contain the following amounts per gallon:

Impurity	Amount per Gallon
Total Solids	1.0
Total Hardness	0.8
Calcium	0.6
Magnesium	0.2
Iron	0.05
Manganese	0.02
Lead	0.01
Copper	0.01
Chlorine	0.1
Fluorine	0.05

The above results show that the water is of good quality and suitable for drinking purposes.

MIDDLE WARD.

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Annual Report for 1912.



MIDDLE WARD

JOHN ROBERT FOR THE

# STAFF.

## PUBLIC HEALTH DEPARTMENT.

### MIDDLE WARD DISTRICT.

**County and District Medical Officer—**

JOHN T. WILSON, M.D., D.P.H.

**Tuberculosis Officers and Asst. M.O.H.—**

FRANK H. SCROGGIE, M.B., Ch.B., D.P.H.

DANIEL STEWART, M.D., D.P.H.

JOHN W. MILLER, M.B., Ch.B., D.P.H.

J. THOMSON DICK, M.B., Ch.B., D.P.H.

CHRISTINA BARROWMAN, M.B., Ch.B., B.Sc.(P.H.).

**District Sanitary Inspector—**

JAMES DOBSON.

**Local Sanitary Inspectors—**

WILLIAM B. MITCHELL, Strathaven, ... ..		{ Avondale, East Kilbride, Glas-
		ford, and Stonehouse.
JAMES BUCHANAN, Cambuslang, ... ..		} Blantyre and Cambuslang.
ROBERT MILLIGAN, Blantyre, ... ..		
WILLIAM DICK, Bellshill, ... ..		} Bothwell.
ALEXANDER JENNINGS, Bellshill, ... ..		
JAMES CALDWELL, Wishaw, ... ..		{ Cambusnethan, Dalziel, and
ROBERT BROWN, Shotts, ... ..		
EBENEZER W. CONCHIE, Larkhall, ... ..		} Dalsersf and Hamilton.
GEORGE BUTTLE, Hamilton, ... ..		
JOHN FINNIE, Baillieston, ... ..		Old Monkland.
JAMES MUIR, Airdrie, ... ..		New Monkland.
THOMAS FRAZER, Hamilton, ... ..		

SAMUEL JACKSON, Hamilton, ... ..	Special Scavenging Districts.
PETER STEWART, Hamilton, ... ..	Do. do.

GEORGE MILLER, Hamilton, ... ..	<i>Inspector of Buildings.</i>
WILLIAM MARTIN, ... ..	<i>Assistant.</i>

**Health Visitors—**

Nurse M'NEILL.	Nurse STEWART.
,, STRATH.	,, ARNOT.
,, ROSS.	

**Superintendents of Slaughter-houses—**

ALEXANDER CAMERON, Bellshill.	ROBERT RANKIN, Stonehouse.
JOHN F. SMELLIE, Blantyre.	JOSEPH M'GOWAN, Strathaven.
ALFRED NIMMO, Larkhall.	ROBERT BELL, Shotts.

STAFF.  
PUBLIC HEALTH HOSPITALS.  
MIDDLE WARD DISTRICT.

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**Medical Officer—**

JOHN T. WILSON, M.D., D.P.H.

<i>County Hospital, Motherwell,</i> (100 beds)	- - - Dr. JOHN REID, Resident Physician-Superintendent. Miss J. CHAPMAN, Matron.
<i>Lightburn Joint-Hospital (Shettleston),</i> (60* beds)	- - - Dr. ANDREW COWAN, Resident Physician-Superintendent. Miss S. MONTGOMERY, Matron.
<i>County Hospital, Bellshill,</i> (30 beds)	- - - Drs. JAMES MUIR and WALTER S. FINDLAY, Visiting Physicians. Miss M. THOMSON, Matron.
<i>County Sanatorium, Stonehouse,</i> (30 beds)	- - - Dr. A. H. M'LEAN, Visiting Physician. Miss J. STEVENSON, Matron.
<i>County Sanatorium, Shotts,</i> (30 beds)	- - - Dr. J. M'MILLAN, Visiting Physician. Miss ISA KEIR, Matron.
<i>County Sanatorium, Longriggend,</i> (30 beds)	- - - Dr. JAMES KIRKLAND, Visiting Physician. Miss A. BALLANTYNE, Matron.
<i>Blantyre Hospital,</i> (10 beds)	- - - Dr. F. H. SCROGGIE, Visiting Physician. Miss A. MANN, Matron.
<i>Dalserf Hospital,</i> (10 beds)	- - - Dr. F. H. SCROGGIE, Visiting Physician. Miss F. SMITH, Matron.

\*30 beds owned by the Middle Ward District Committee.

## COUNTY OF LANARK.

## DISTRICT OF THE MIDDLE WARD.

(Area, 186,623 acres.)

## Report by the Medical Officer of Health

FOR THE YEAR 1912.

## I.—VITAL STATISTICS.

The **Area** of the District at the close of the year was **186,623 acres**. The acreage of each parish and the population of each registration district is stated in Table B.

The density of population was 1.08 persons to the acre.

The **Population** at the decennial census, 2nd April, 1911, was **202,663**, and at the middle of the year 1911 was estimated to be **203,279**. At the middle of the year 1912 it has also been estimated as **203,279**.

The number of inhabited houses according to the Valuation Roll, 1912-13, was **39,352**, and of unoccupied houses, 1,738. As the figures only show an increase of 50 in the number of occupied houses, it was considered undesirable to make any increase on the population given for 1911, in making up the Vital Statistics for 1912.

The following table shows the increase of population during the two last decennial periods from the excess of births over deaths, compared with the actual increase as ascertained at the decennial censuses :—

	Total Births.	Total Deaths.	Population.			
			Natural Increase.	Actual Increase.	Gain.	Loss.
1891-1900, ...	62,323	29,080	33,243	36,815	3,572	—
1901-1910, ...	74,121	31,188	42,933	23,300	—	19,633

The decennial population for each parish or registration district, as ascertained at the last three censuses—1891, 1901, and 1911—is

given in the following table. The 1911 census figures given in last year's report have been revised in four instances:—

PARISH OR REGISTRATION DISTRICT.*	CENSUS POPULATION.		
	1891	1901	1911
Avondale, ... ..	5,069	5,773	5,033
East Kilbride, ... ..	3,861	3,948	3,977
Glasford, ... ..	1,317	1,321	1,312
Stonehouse, ... ..	3,400	3,665	3,688
Blantyre, ... ..	11,352	14,145	16,821
<i>Bothwell</i> , ... ..	11,490	16,260	18,956
<i>Bellshill</i> , ... ..	8,319	14,135	18,638
<i>Holytown</i> , ... ..	11,553	15,510†	16,617‡
Cambuslang, ... ..	15,364	20,211	24,864
<i>Cambusnethan</i> , ... ..	8,675	9,814†	11,585
<i>Calderhead</i> , ... ..	1,567	2,515	2,991
<i>Dalserf</i> , ... ..	2,965	4,088	4,427
<i>Larkhall</i> , ... ..	8,845	12,034†	14,202
Dalziel, ... ..	1,343	2,030†	1,876‡
Hamilton, ... ..	6,164	7,597†	7,755
New Monkland, ... ..	14,608	14,498	13,728
<i>Old Monkland, East</i> , ... ..	2,410	2,665	2,469
<i>Do., Coatbridge</i> , ... ..	2,675	2,939	2,772
<i>Do., West</i> , ... ..	9,614	10,653	12,472
<i>Shotts, East</i> , ... ..	2,822	3,593	3,960
<i>Do., Middle</i> , ... ..	1,610	2,823	3,270
<i>Do., Calderhead</i> , ... ..	2,961	4,126	5,680
<i>Do., West</i> , ... ..	3,148	3,757	4,559
<i>Do., North</i> , ... ..	1,416	1,263	1,234
	142,548	179,363	202,663

\* When there is more than one Registration District in a parish, the district bearing the name of the parish is put first, and all are printed in italics.

† Alterations in the boundaries of these parishes were made in 1896, for details of which see Annual Report of the County Medical Officer for that year.

‡ Owing to an extension of the Burgh of Motherwell, an alteration of the boundaries of these parishes took place in 1908, for details of which see annual report for that year.

The constitution of the population as regards age, sex, and conjugal conditions, as ascertained at the last census, is given in the County portion of this report, but may be summarised thus:—

	Males.	Females.	Both Sexes.
Single, - - -	70,371	60,227	130,598
Married, - - -	31,767	32,213	63,980
Widowed, - - -	3,048	5,016	8,064
Not stated, - - -	15	6	21
Total, - - -	105,201	97,462	202,663

The percentage proportion of the population at quinquennial age-periods, beginning with under 5 years and ending with 90 years and over, was as follows:—

14.74, 13.40, 11.57, 9.75, 8.63, 8.04, 7.06, 6.42, 5.14, 4.08, 3.41, 2.53, 1.89, 1.48, 1.04, 0.47, 0.19, 0.07, 0.01; not stated, 0.00.

**Statistical Tables.**—Table C, which in former years contained death-rates from certain causes of death during the whole period of County administration, has been modified, and is now lettered A. It contains only birth-rates, death-rates from all causes, and infantile death-rates:—

TABLE A.—BIRTH-RATES AND DEATH-RATES PER 1000 OF THE POPULATION. INFANTILE DEATHS PER 1000 BIRTHS.

Year.	Births.	Birth-rate.	Nett Deaths.	INFANTS UNDER 1 YEAR.		
				Death-rate.	Deaths.	Death-rate.
1891	5,853	40.8	2,908	20.1	752	128.4
1892	6,027	41.0	2,859	19.2	764	126.9
1893	6,163	41.0	2,890	19.1	851	137.7
1894	6,117	39.7	2,624	16.9	700	114.4
1895	5,996	38.1	3,100	19.5	833	138.9
1896	6,125	38.0	2,382	14.7	666	108.7
1897	6,183	37.5	2,737	16.6	796	128.7
1898	6,361	37.7	3,003	17.8	863	135.6
1899	6,607	38.3	3,209	18.6	882	133.4
1900	6,891	39.0	3,368	19.0	991	143.8
<b>1891</b>	<b>62,323</b>	<b>39.1</b>	<b>29,080</b>	<b>18.1</b>	<b>8,098</b>	<b>129.9</b>
<b>to</b>						
<b>1900</b>						
1901	7,263	40.3	3,175	17.6	1,009	138.9
1902	7,356	40.2	2,996	16.4	841	114.3
1903	7,415	40.0	2,995	16.1	912	122.9
1904	7,505	39.9	3,079	16.3	934	124.4
1905	7,283	38.1	3,041	15.9	913	125.3
1906	7,285	37.6	3,096	15.9	945	129.7
1907	7,452	37.9	3,085	15.7	867	116.3
1908	7,703	39.1	3,580	18.1	1,088	141.2
1909	7,550	38.1	2,996	15.1	843	111.6
1910	7,309	36.4	3,145	15.6	860	117.6
<b>1901</b>	<b>74,121</b>	<b>38.9</b>	<b>31,188</b>	<b>16.3</b>	<b>9,212</b>	<b>124.2</b>
<b>to</b>						
<b>1910</b>						
1911	6,981	34.3	3,002	14.7	782	112.0
1912	7,111	34.9	2,967	14.5	804	113.0

The death-rates from 1901 to 1910 have been revised since the census population (1911) was obtained, and may now be considered as final.

The **Births** registered were 3,617 males and 3,494 females, making a total of **7,111**. Of this number 292, or 4·1 per cent., were illegitimate. The birth-rate was **34·98** per thousand of the population, and is one of the lowest recorded in this district, but it is still one of the highest rates in Great Britain. The average annual birth-rates for the previous four quinquennial periods were as follows:—

1891-95	1895-1900	1901-05	1906-10
40·2	38·1	39·7	37·8

For the three divisional areas the rates for the year 1912 were—in the First, 24·1; in the Second, 35·8; and in the Third, 35·4 per thousand.

The **Deaths** registered amounted to 2,947. After making corrections for deaths which occurred in institutions and in other districts, as shown in the following tables, the deaths of persons belonging to the district amounted to **2,967**, and gave a death-rate of **14·5** per thousand of the population. This is the lowest death-rate yet recorded during the whole period of County administration (see Table A). The average annual rate for the last two decennial periods was 18·1 and 16·3 respectively. The rates for the three divisional areas were—in the First, 14·1; in the Second, 14·6; and in the Third, 14·4 per thousand.

The number of births exceeded the deaths by 4,144, which constitutes the *natural increase* in population.

PUBLIC INSTITUTIONS SITUATED WITHIN THE DISTRICT WHERE SOME PERSONS NOT BELONGING TO THE DISTRICT DIED AND WHOSE DEATHS WERE EXCLUDED.

NAME OF INSTITUTION.	PARISH WHERE SITUATED.	POPULATION, POLICE CENSUS, DEC., 1912.	DEATHS.	
			Total during 1912.	Allocated to the Middle Ward.
Kirklands Asylum, ... ..	Bothwell, ...	250	23	9
Hartwood do., ... ..	Shotts, ...	1,051	82	26
Dalziel Poorhouse, ... ..	Dalziel, ...	78	27	3
New Monkland Poorhouse, ...	New Monkland,	152	29	6
Omoa Combination Poorhouse,	Shotts, ...	205	36	22
County Hospital, Motherwell,	Dalziel, ...	226	58	53
Do. do., Bellshill, ... ..	Bothwell, ...	45	20	17
Do. Sanatorium, Shotts, ...	Shotts, ...	26	8	7
Do. do., Stonehouse,	Stonehouse, ...	33	2	2
Do. do., Longriggend,	New Monkland,	26	5	4
Blantyre Hospital, ... ..	Blantyre, ...	7	1	1
Dalserf do., ... ..	Dalserf, ...	2	...	...
Blantyre Cottage Hospital,	Blantyre, ...	8	...	...
Elmwood Convent, ... ..	Bothwell, ...	54	...	...
St. Vincent Home for Deaf and Blind Children, ... ..	Old Monkland,	137	...	...
TOTAL, ... ..		2,300	291	150

PUBLIC INSTITUTIONS SITUATED OUTWITH THE DISTRICT WHERE SOME PERSONS BELONGING TO THE DISTRICT DIED AND WHOSE DEATHS ARE INCLUDED.

<i>General Hospitals.</i>		<i>Poor Institutions.</i>	
Glasgow Royal Infirmary, -	83	Hamilton Poorhouse, -	20
Glasgow Western Infirmary,	24	Old Monkland Poorhouse, -	3
Glasgow Victoria Infirmary,	6	Renfrewshire Combination	
Edinburgh Royal Infirmary,	4	Poorhouse, - - -	1
Alexander Hospital, - -	1	Glasgow Eastern District	
		Hospital, - - -	1
		Barnhill Poorhouse, - -	1
<i>Infectious Hospitals.</i>		<i>Other Institutions.</i>	
Lightburn Hospital, - -	7	Children's Hospital, - -	7
Ruchill Hospital, - -	1	Maternity Hospital, - -	6
Edinburgh City Hospital, -	1	Cancer Hospital, - - -	4
		Samaritan Hospital, - -	2
		Private Nursing Homes, -	13
<i>Asylums.</i>			
Smithston Asylum, - -	1		
Gartnavel Asylum, - -	1		
Larbert Institution, - -	1		
	<u>130</u>		<u>58</u>
Total, 188			



The foregoing tables show that of 291 deaths occurring in institutions within the District, 141 were excluded as they were persons not belonging to the Middle Ward, and that, on the other hand, 188 deaths were included as they were persons belonging to the Middle Ward, who died in institutions outwith the District. For the same reason 51 deaths were excluded of persons dying in private residences, and 24 deaths were included.

**Deaths in Relation to Age and Cause.**—The deaths are classified in Table B1 according to age and cause. The deaths are here arranged in recognised age-periods, and the percentage proportion of deaths at each age-period :—

Infant Period—under 1 year, ... ..	804 deaths, or 27·1 per cent.
Under School Age—1-5 years, ... ..	485 „ 16·3 „
School Age—5-15 years, ... ..	142 „ 4·8 „
Adolescent—15-25 years, ... ..	153 „ 5·1 „
Early Mature Period—25-45 years, ... ..	345 „ 11·6 „
Late Mature Period—45-65 years, ... ..	476 „ 16·0 „
Post-Mature Period—65 years and upwards,	562 „ 18·9 „

The population at each of these periods, except the infant period, has been obtained from the Registrar-General, so that the actual death-rates for each age-period can now be given :—

POPULATION, DEATHS, AND DEATH-RATES AT AGE-PERIODS.

	Under 5.	5-15.	15-25.	25-45.	45-65.	Over 65.
Population (Census, 1911), - -	29,882	50,615	37,272	54,060	24,169	6,665
Deaths (year 1912),	1,289	142	153	345	476	562
Death-rate per 1000 of the population,	43·14	2·80	4·10	6·38	19·69	84·31

The high death-rates at the extremes of life, and the very low rate during the school age-period are clearly shown. The infant death-rate can only be calculated in relation to the number of births.

**Infant Period.**—The infant death-rate for each year since 1891 is given in Table A. The average annual rate for the last two decennial periods was 129·9 and 124·2. For the year 1912 the rate was only 113·0. Of the 804 deaths recorded, 298 took place during the first month, and 132 during the next two months, making 430 deaths of children under 3 months.

Infant deaths classified in groups, according to cause. Number in each group compared with that for the preceding year:—

	1912.	1911.
1. Prematurity, 115; Congenital Malformations, 54; Atelectasis, 11; Injury at Birth, 12,	192	179
2. Diarrhœa, 75; other Digestive Diseases, 24; Atrophy, Debility, and Marasmus, 118; Rickets, 1, ... ..	218	273
3. Pneumonia, 144; Bronchitis, 47; other Respiratory Diseases, 6, ... ..	197	135
4. Tuberculosis—Pulmonary, 1; Meningeal, 12; Abdominal, 11, ... ..	24	43
5. Meningitis, 19; Convulsions, 15; other Nervous Diseases, 6, ... ..	40	34
6. Measles, 47; Whooping - Cough, 38; Diphtheria, 3; Cerebro-Spinal Fever, 1; Syphilis, 1, ... ..	90	76
7. Violence, 4; Suffocation (overlying) 3, ...	7	4
8. All other causes, ... ..	36	38
	<hr/>	<hr/>
	804	782
	<hr/>	<hr/>

**Infectious Disease.**—The number of deaths due to infectious diseases which are compulsorily notifiable was 269, made up thus:—

Diphtheria, - - - 28	Puerperal Fever, - - 10
Scarlet Fever, - - 29	Erysipelas, - - - 5
Typhoid Fever, - - 17	Pulmonary Tuberculosis, 177
Cerebro-Spinal Fever, - 3	

The deaths from infectious diseases not compulsorily notifiable amounted to 360—diarrhœa, 94; measles, 170; and whooping cough, 96. The prevalence of these various diseases will be further referred to in the second portion of this report.

**Respiratory Diseases.**—The group of diseases under the heading “respiratory” has varied from time to time. In the years preceding 1906 this group included deaths from pneumonia and from influenza with respiratory symptoms. Since the year 1906 these two causes of death have been given a separate column in Table B. Since

1911 bronchitis has also been given a separate heading. This change in the classification is indicated in the following tabular statement:—

OLD CLASSIFICATION.

Year.	Deaths.	Death-rate.	Year.	Deaths.	Death-rate.	Year.	Deaths.	Death-rate.
1891	553	3·85	1896	392	2·43	1901	458	2·54
1892	534	3·63	1897	592	3·59	1902	580	3·17
1893	546	3·63	1898	492	2·91	1903	538	2·90
1894	464	3·01	1899	570	3·30	1904	576	3·06
1895	634	3·98	1900	666	3·77	1905	549	2·87

NEW CLASSIFICATION.

Year.	PNEUMONIA.		BRONCHITIS.		INFLUENZA.		OTHER RESPIRATORY DISEASES.	
	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.
1906	128	0·66	—	—	20	0·10	378	1·95
1907	175	0·89	—	—	26	0·13	415	2·11
1908	193	0·97	—	—	24	0·12	500	2·52
1909	321	1·61	—	—	25	0·12	239	1·20
1910	348	1·73	—	—	13	0·06	218	1·08
1911	311	1·52	200	0·98	22	0·10	28	0·13
1912	343	1·68	188	0·92	12	0·05	29	0·14

The rates from 1901 to 1910 have been revised.

*Pneumonia.*—Deaths from this disease have been classified separately since 1906. Deaths from broncho-pneumonia were, up till 1908, included in the general respiratory group, and since 1909 they have been included under the heading “Pneumonia.”

343 deaths occurred during the year 1912—197 of these being in the Parishes of Blantyre, Bothwell, and Cambuslang. Classified according to age, the deaths were as follows:—

Under 1	1-2	2-5	5-15	15-25	25-45	45-65	65 and upwards
144	64	37	10	10	32	33	13

*Bronchitis.*—Up to the year 1911, deaths from this disease were included under the general respiratory heading. 188 deaths occurred during the year, giving a death-rate of 0·92 per thousand of the population. Classified according to age, the deaths were as follows:—

Under 1	1-2	2-5	5-15	15-25	25-45	45-65	65 and upwards
47	9	5	1	1	7	46	72

*Influenza*.—Deaths from this disease have been classified separately since the year 1906. 12 deaths from this cause were registered during the year, 5 of which were persons over 65 years of age.

*Other Respiratory Diseases*—including asthma, congestion of lungs—caused 29 deaths. Classified according to age, the deaths were as follows :—

Under 1	1-2	2-5	5-15	15-25	25-45	45-65	65 and upwards
6	1	2	—	1	3	8	8

**Malignant Diseases.**—This group includes deaths from diseases certified as cancer, carcinoma, sarcoma, &c. The proportions so certified are, roughly, about 50 per cent. cancer, 40 per cent. carcinoma, and 10 per cent. other forms. The average number of deaths from these diseases has been gradually increasing. Thus, for the quinquennial period 1891-95, the death-rate per 10,000 of the population was 4·9, for 1896-1900 it was 5·1, for 1901-05 it was 5·2, and for 1906-10 it was 6·9. During 1912 the death-rate was 7·3, as compared with 5·9 in 1911. Classified according to age the deaths were as follows :—one between 5 and 15; four between 15 and 25; sixteen between 25 and 45; seventy-four between 45 and 65; and fifty-four over 65 years of age.

MALIGNANT DISEASE IN EACH REGISTRATION DISTRICT OF THE MIDDLE WARD.—AVERAGE ANNUAL NUMBER OF DEATHS FOR QUINQUENNIAL PERIODS 1891-1910, AND FOR EACH OF THE YEARS 1911 AND 1912; ALSO, THE AVERAGE ANNUAL DEATH-RATES FOR SAME PERIODS.

Registration District.	Population, Census 1911.	1891-1895.	1896-1900.	1901-1905.	1906-1910.	1911.	1912.
Avondale, - - -	5,033	2·2	3·2	3·6	5·6	5	6
East Kilbride, - -	3,977	4·0	4·2	3·2	3·6	3	4
Glasford, - - -	1,312	0·8	1·2	1·6	1·4	2	1
Stonehouse, - - -	3,688	2·0	2·0	1·8	2·6	2	2
Blantyre, - - -	16,821	7·0	6·0	6·6	8·6	13	10
<i>Bothwell</i> , - - -	18,956	} 18·4	} 20·6	7·4	14·2	12	20
<i>Bellshill</i> , - - -	18,638			8·0	8·8	7	11
<i>Holytown</i> , - - -	16,617			7·6	9·6	13	10
Cambuslang, - - -	24,864	7·2	8·8	9·2	15·6	16	20
<i>Cambusnethan</i> , - -	11,585	} 6·6	} 4·4	5·8	11·0	6	12
<i>Calderhead</i> , - - -	2,991			1·4	3·0	1	3
<i>Dalserf</i> , - - -	4,427	} 6·2	} 10·0	0·6	3·0	2	3
<i>Larkhall</i> , - - -	14,202			7·8	13·2	7	9
Dalziel, - - -	1,876	0·2	0·4	0·2	1·2	2	1
Hamilton, - - -	7,775	3·8	4·8	3·8	3·8	5	4
New Monkland, - -	13,728	7·6	5·8	9·4	10·4	8	10
<i>Old Monkland—East</i> , - -	2,496	} 6·4	} 10·4	1·8	2·0	2	4
<i>Coatbridge</i> , - - -	2,772			2·8	1·6	2	1
<i>West</i> , - - -	12,472			7·8	9·4	5	14
<i>Shotts—East</i> , - - -	3,691	} 3·0	} 5·8	1·4	0·8	1	1
<i>Middle</i> , - - -	3,270			0·8	1·0	1	...
<i>Calderhead</i> , - - -	5,680			1·6	2·8	3	...
<i>West</i> , - - -	4,559			2·2	2·6	3	3
<i>North</i> , - - -	1,234	0·8	0·4	...	...		
Middle Ward District,	202,663	75·4	87·6	97·2	136·2	121	149
Average Annual Death-rate per } 10,000 of Population, - - - }		4·95	5·19	5·24	6·91	5·95	7·32



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Chapter XXV	370
Chapter XXVI	385
Chapter XXVII	400
Chapter XXVIII	415
Chapter XXIX	430
Chapter XXX	445
Chapter XXXI	460
Chapter XXXII	475
Chapter XXXIII	490
Chapter XXXIV	505
Chapter XXXV	520
Chapter XXXVI	535
Chapter XXXVII	550
Chapter XXXVIII	565
Chapter XXXIX	580
Chapter XL	595
Chapter XLI	610
Chapter XLII	625
Chapter XLIII	640
Chapter XLIV	655
Chapter XLV	670
Chapter XLVI	685
Chapter XLVII	700
Chapter XLVIII	715
Chapter XLIX	730
Chapter L	745
Chapter LI	760
Chapter LII	775
Chapter LIII	790
Chapter LIV	805
Chapter LV	820
Chapter LVI	835
Chapter LVII	850
Chapter LVIII	865
Chapter LIX	880
Chapter LX	895
Chapter LXI	910
Chapter LXII	925
Chapter LXIII	940
Chapter LXIV	955
Chapter LXV	970
Chapter LXVI	985
Chapter LXVII	1000





Population for 1920, by sex and age, and by race and color

Age	White		Colored		Total
	Male	Female	Male	Female	
Under 5	125	145	15	18	243
5 to 9	135	165	25	30	255
10 to 14	140	175	30	35	280
15 to 19	145	180	35	40	290
20 to 24	150	185	40	45	305
25 to 29	145	180	35	40	290
30 to 34	135	170	25	30	265
35 to 39	125	160	15	18	243
40 to 44	115	150	10	12	227
45 to 49	105	140	5	6	211
50 to 54	95	130	0	0	225
55 to 59	85	120	0	0	205
60 to 64	75	110	0	0	185
65 to 69	65	100	0	0	165
70 to 74	55	90	0	0	145
75 to 79	45	80	0	0	125
80 to 84	35	70	0	0	105
85 to 89	25	60	0	0	85
90 and over	15	40	0	0	55
<b>Total</b>	<b>1,435</b>	<b>1,655</b>	<b>105</b>	<b>135</b>	<b>3,330</b>

TABLE B<sup>2</sup>.—MIDDLE WARD.—Year 1912.—Births and Deaths in each Registration District. 158B2  
Deaths classified according to age periods, and corrected for Institutions, &c.

REGISTRATION DISTRICTS.	Births.	Nett Deaths.	DEATHS AT DIFFERENT AGE PERIODS.																
			Weeks.					Months.					Years.						
			-1	1-2	2-3	3-4	Total -4	1-3	3-6	6-9	9-12	Total -12	1-2	2-5	5-15	15-25	25-45	45-65	65 and over.
Avondale, - - -	98	77	...	...	...	1	1	1	...	3	1	6	1	2	...	1	7	16	44
East Kilbride, - - -	103	47	4	...	...	...	4	...	1	1	1	7	...	2	1	...	7	16	14
Glasford, - - -	31	16	...	...	...	...	...	...	1	1	...	2	...	4	1	...	1	3	5
Stonehouse, - - -	106	58	4	2	...	...	6	2	1	...	2	11	...	2	2	1	8	14	20
First Division, - - -	338	198	8	2	...	1	11	3	3	5	4	26	1	10	4	2	23	49	83
Blantyre, - - -	637	258	13	2	2	1	18	13	17	13	16	77	24	17	9	20	37	37	37
Bothwell, - - -	602	286	12	4	1	2	19	10	12	9	7	57	32	29	24	9	30	49	56
Bellshill, - - -	786	318	18	3	4	4	29	17	14	21	12	93	32	28	22	10	47	47	39
Holytown, - - -	670	261	15	4	6	...	25	13	16	12	20	86	27	32	11	11	30	38	26
Cambuslang, - - -	838	315	26	7	4	3	40	17	9	13	9	88	22	21	10	21	34	59	60
Cambusnethan, - - -	373	155	10	2	3	5	20	6	...	3	10	39	15	10	7	6	22	19	37
Calderhead, - - -	141	60	2	...	...	2	4	3	4	4	6	21	5	7	3	2	3	10	9
Dalserf, - - -	138	45	8	1	...	...	9	4	...	...	...	13	1	1	1	8	8	3	10
Larkhall, - - -	447	233	15	4	4	...	23	14	10	12	6	65	16	17	6	14	16	39	60
Dalziel, - - -	77	22	...	2	1	...	3	1	1	1	2	8	1	1	1	2	5	2	2
Hamilton, - - -	289	91	6	2	1	...	9	6	5	2	1	23	13	4	4	2	9	13	23
Second Division, - - -	4,998	2,044	125	31	26	17	199	104	88	90	89	570	188	167	98	105	241	316	359
New Monkland, - - -	503	199	10	5	...	5	20	8	9	9	4	50	12	14	12	15	28	33	35
Old Monkland, Eastern, -	94	37	2	...	...	...	2	...	2	...	1	5	6	4	5	2	2	5	8
Old Monkland, Coatbridge, -	96	39	1	1	1	1	4	3	2	2	3	14	3	4	1	1	3	8	5
Old Monkland, Western, -	447	193	20	2	5	4	31	7	6	9	7	60	13	7	13	11	18	32	39
Shotts, Eastern, - - -	136	40	5	1	...	1	7	1	...	2	...	10	5	6	...	5	2	4	8
Shotts, Middle, - - -	99	32	4	...	...	...	4	1	1	3	2	11	4	2	...	2	6	7	...
Shotts, Calderhead, - - -	216	93	7	2	4	...	13	4	4	5	10	36	13	8	3	4	7	10	12
Shotts, Western, - - -	150	81	5	1	...	...	6	1	3	5	6	21	11	5	5	5	13	12	9
Shotts, Northern, - - -	34	11	...	...	...	1	1	...	...	...	...	1	2	...	1	1	2	...	4
Third Division, - - -	1,775	725	54	12	10	12	88	25	27	35	33	208	69	50	40	46	81	111	120
Total, - - -	7,111	2,967	187	45	36	30	298	132	118	130	126	804	258	227	142	153	345	476	562

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The *Vital Statistics* relating to each registration district or parish will be found in Tables B, B1, and B2, and the *morbidity*, or number of cases of infectious disease notified, is given in Part II. of the Report.

## II.—PREVALENCE OF INFECTIOUS DISEASE.

On August 1st, 1912, pulmonary tuberculosis, which had been made compulsorily notifiable in December, 1907, for a period of five years, was made permanently notifiable throughout Scotland, by a regulation of the Local Government Board.

By resolution of the Local Authority, and with the approval of the Local Government Board, the following diseases were made permanently compulsorily notifiable from 24th October, 1912, viz. :— Ophthalmia neonatorum, acute poliomyelitis or infantile paralysis, tetanus or lockjaw, anthrax or malignant pustule, glanders or farcy, actinomycosis.

The total prevalence of notifiable infectious diseases remained about the same high level of 1911, and was maintained largely by the continued high prevalence of scarlet fever. There were 2,262 cases of infectious sickness during 1912, against 2,206 in 1911. Smallpox and typhus fever were absent during the year. Scarlet fever showed an increase of 197, pulmonary tuberculosis 29, while there were decreases in diphtheria, 71, erysipelas 65, typhoid fever 37, cerebro-spinal meningitis 4, and puerperal fever 1. Each infectious disease is dealt with under a separate heading, but reference should be made to the following statistical tables. Table B shows for the year 1912 the number of deaths registered in each Parish or Registration District, and Table E shows the cases notified in each parish. From these two sets of figures is calculated the rate of fatality, which is generally expressed as the number of deaths occurring in 100 cases. Table D, which was incorporated in former reports previous to 1909, has been discontinued, and all the information will now be found in the new Tables D, of which there are seven, distinguished by figures. Thus Table D1 relates to smallpox, and Table D2 to diphtheria. The following Table E shows the distribution of the cases of infectious sickness in each parish.

TABLE E.—NUMBER OF CASES OF INFECTIOUS SICKNESS RECOGNISED IN EACH PARISH DURING 1912.

PARISH.	Smallpox.	Diphtheria.	Scarlet Fever.	Typhus Fever.	Typhoid Fever.	Cerebro-Spinal Fever.	Puerperal Fever.	Erysipelas.	Pulmonary Tuberculosis.	Ophthalmia Neonatorum.	Infantile Paralysis.	Total.
1. Avondale, -	...	17	21	...	...	...	...	1	9	...	...	48
2. East Kilbride,	...	4	31	...	1	...	...	2	10	...	...	48
3. Glasford, -	...	5	9	...	...	...	...	1	1	...	...	16
4. Stonehouse, -	...	1	61	...	...	...	...	3	4	...	...	69
<i>First Division,</i> -	...	27	122	...	1	...	...	7	24	...	...	181
5. Blantyre, -	...	12	65	...	6	...	8	11	56	...	...	158
6. Bothwell, -	...	71	488	...	25	...	4	33	103	1	1	726
7. Cambuslang, -	...	69	227	...	13	...	2	13	43	3	...	370
8. Cambusnethan,	...	29	48	...	7	...	...	18	20	...	...	122
9. Dalsersf, -	...	6	34	...	22	2	1	3	13	...	...	81
10. Dalziel, -	...	8	7	...	2	...	...	1	5	...	...	23
11. Hamilton, -	...	12	21	...	1	...	1	1	2	...	...	38
<i>Second Division,</i> -	...	207	890	...	76	2	16	80	242	4	1	1518
12. New Monkland,	...	36	60	...	28	...	...	13	23	1	...	161
13. Old Monkland,	...	63	128	...	6	1	2	18	44	1	...	263
14. Shotts, -	...	25	54	...	6	1	1	19	32	1	...	139
<i>Third Division,</i> -	...	124	242	...	40	2	3	50	99	3	...	563
<i>Middle Ward,</i> -	...	358	1254	...	117	4	19	137	365	7	1	2262

**Smallpox.**

No cases occurred in any part of the district, but the following Table D1 shows the prevalence in previous years, and that the last case of smallpox occurred in 1910.

TABLE D1.—SMALLPOX.

YEAR.	NUMBERS.		YEAR.	NUMBERS.	
	Cases Notified.	Deaths Registered.		Cases Notified.	Deaths Registered.
(1)	(2)	(3)	(1)	(2)	(3)
1891	...	...	1902	35	1
1892	1	1	1903	15	1
1893	11	1	1904	127	9
1894	8	1	1905	38	1
1895	1	...	<i>Average,</i>	<i>53</i>	<i>3</i>
<i>Average,</i>	<i>4</i>	...	1906	1	...
1896	...	...	1907	...	...
1897	2	...	1908	...	...
1898	1	...	1909	...	...
1899	11	...	1910	2	...
1900	7	1	<i>Average,</i>	...	...
<i>Average,</i>	<i>4</i>	...	1911	...	...
1901	50	6	1912	...	...

*The Vaccination (Scotland) Act, 1907*, which provided for returns of statutory declarations of conscientious objection to vaccination, came into operation in that year. Forms were prepared, duly approved by the Local Government Board, and issued to registrars in

the month of December, 1907. The returns received since that date are of considerable interest, and may be tabulated here as follows:—

Registration District.	No. of Declarations.					Registration District.	No. of Declarations.				
	Year. 1908.	Year. 1909.	Year. 1910.	Year. 1911.	Year. 1912.		Year. 1908.	Year. 1909.	Year. 1910.	Year. 1911.	Year. 1912.
Avondale, ...	16	17	14	16	12	Larkhall, ...	142	153	165	170	173
East Kilbride, 3	11	18	9	20		Dalziel, ...	8	16	18	12	27
Glasford, ...	8	8	16	12	8	Hamilton, ...	77	135	109	129	128
Stonehouse, 36	33	23	23	46		New Monkland, ...	46	64	92	116	111
Blantyre, 122	149	183	197	231		Old Monkland, E.,	27	36	34	28	28
Bothwell, ...	93	89	106	119	122	Coatbridge, ...	7	18	16	24	22
Bellshill, ...	248	272	321	348	365	Old Monkland, W.,	25	19	42	48	48
Holytown, 132	228	225	225	264		Shotts, East, ...	54	59	81	73	71
Cambuslang, 9	149	156	189	248		„ Middle, ...	29	19	24	36	27
Camb'nethan, 58	42	86	82	90		„ Calderhead, ...	26	37	72	72	76
Calderhead, 17	27	29	44	42		„ West, ...	17	43	64	54	46
Dalserf, ...	20	23	23	33	25	„ North, ...	2	5	6	2	6
						Totals, ...	1222	1632	1923	2061	2236

The number of unvaccinated children in the district continues to mount up at an alarming rate. Since the 1907 Act came into force, almost 10,000 children have not been vaccinated. By comparing the number of births with the figures above given, the extent to which children have not been vaccinated on account of conscientious objection may be estimated. The proportion of declarations for the whole district is 31·4 per cent. of the total births. The proportion varies greatly in different localities. The largest proportion of statutory declarations was registered in the registration districts of Shotts Eastern, 52·2 per cent.; Bellshill, 46·4 per cent.; Hamilton, 44·2 per cent.; Stonehouse, 43·3 per cent.

TABLE D2.—DIPHTHERIA AND MEMBRANOUS CROUP.

YEAR.	NUMBERS.		RATES.		
	Cases Notified.	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1891	149	61	40.9	1.04	4.2
1892	262	91	34.7	1.78	6.1
1893	220	86	39.0	1.46	5.7
1894	245	80	32.6	1.59	5.2
1895	175	51	29.1	1.11	3.2
<i>Average.</i>	<i>210</i>	<i>74</i>	<i>35.1</i>	<i>1.39</i>	<i>4.9</i>
1896	193	38	19.7	1.2	2.3
1897	108	26	24.0	0.65	1.5
1898	115	27	23.5	0.7	1.6
1899	132	41	31.0	0.76	2.3
1900	170	43	25.3	0.96	2.4
<i>Average.</i>	<i>144</i>	<i>35</i>	<i>24.3</i>	<i>0.85</i>	<i>2.0</i>
1901	122	42	34.4	0.67	2.3
1902	146	31	21.2	0.79	1.6
1903	109	25	22.9	0.57	1.3
1904	170	37	21.7	0.88	1.9
1905	210	34	16.2	1.09	1.7
<i>Average.</i>	<i>151</i>	<i>34</i>	<i>22.3</i>	<i>0.80</i>	<i>1.8</i>
1906	261	46	17.6	1.33	2.3
1907	439	40	9.1	2.22	2.0
1908	442	44	9.9	2.23	2.2
1909	351	35	9.9	1.75	1.7
1910	424	43	10.1	2.09	2.1
<i>Average.</i>	<i>383</i>	<i>41</i>	<i>10.8</i>	<i>1.93</i>	<i>2.0</i>
1911	429	44	10.2	2.10	2.1
1912	358	28	7.8	1.76	1.3

**Diphtheria and Membranous Croup.**

Cases, 358; deaths, 28; fatality, 7.8.

The number of cases notified as diphtheria has in recent years been influenced by bacteriological examination of suspected cases, and since the facilities for such examination began to be fully taken advantage of by the medical practitioners in the district, the number of cases



notified has remained much above that of former years. The death-rate given in Column 6 of Table D2 is probably the best index of the existence of the disease, and it is satisfactory that the figures for 1912, viz., 1.3 per 10,000 of the population, which is equal to that of 1903, is the lowest yet recorded.

In no case was the milk supply found responsible for the spread of the disease.

The number of removals to hospital was 245 or 68 per cent.

CLINICAL CASES, INFECTED CONTACTS, AND DEATHS DURING EACH MONTH AND AT CERTAIN AGE-PERIODS.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Clinical Cases, . . .	39	29	37	31	26	19	14	26	4	46	29	28	358
Contacts, . . . . .	12	4	6	1	10	...	...	6	1	30	13	5	88
Deaths, . . . . .	1	3	1	1	5	3	1	4	2	2	3	2	28

Ages,	-1	1-5	5-15	15-25	25-45	45-65	65+	All ages.
Cases,	9	126	181	27	14	1	...	358
Deaths,	3	19	6	...	...	...	...	28

TABLE SHOWING THE DISTRIBUTION OF CLINICAL AND CONTACT CASES, AND ALSO THE NUMBER OF FATAL CASES NOTIFIED BEFORE AND AFTER DEATH.

PARISH.	CLINICAL CASES.			CONTACT CASES.		Deaths classified in relation to notification.				
	Houses Invaded.	Persons Attacked.	Deaths.	Cases notified.	Cases not notified.	Days notified before death.			Day of death.	Notified after death
						Over 7.	2-7.	1.		
Avondale, -	15	17	...	2	3	...	...	...	...	...
East Kilbride, -	4	4	1	...	...	...	1	...	...	...
Glasford, -	4	5	2	3	16	...	...	...	1	1
Stonehouse, -	1	1	1	...	4	...	...	...	...	1
Blantyre, -	11	12	...	3	2	...	...	...	...	...
Bothwell, -	61	71	9	11	20	2	1	...	...	6
Cambuslang, -	60	69	3	2	2	...	...	...	...	3
Cambusnethan, -	24	29	...	...	3	...	...	...	...	...
Dalserf, -	6	6	1	...	...	...	...	...	...	1
Dalziel, -	5	8	...	...	...	...	...	...	...	...
Hamilton, -	11	12	3	...	1	2	...	...	...	1
New Monkland,	33	36	5	1	...	1	1	1	...	2
Old Monkland, -	53	63	2	1	8	1	...	...	...	1
Shotts, -	17	25	1	6	...	...	1	...	...	...
	305	358	28	29	59	6	4	1	1	16

The investigations made, and the preventive measures adopted will now be dealt with for each parish.

**Avondale.**—17 cases, with no deaths. In January three cases occurred on a farm (N) near Strathaven. All the inmates were swabbed, and a positive result was obtained from a boy who had complained of sore throat about three weeks before. In the case of another child who had had a sore-throat illness two months previously, the swab proved negative. No doctor had been consulted regarding the

illness of these two children, but it is probable that infection had been present at this farm for a considerable time before it was recognised. As the milk was churned, however, there was no danger of the disease being spread by its means. A relation on a neighbouring farm C, who had been visiting the family, contracted the disease, and the milk from this farm, which was sent to Glasgow, was stopped until the risk of infection had passed. The other cases, including two positive contacts, who were removed to hospital from a dairy farm, do not call for comment.

**East Kilbride.**—4 cases and 1 death. The first case, which occurred in Busby in February, sickened two days after returning from a visit to Glasgow. In the case which proved fatal, the illness was not recognised as diphtheria until nine days after the onset, and when the child was removed to hospital there was little chance of recovery.

**Glasford.**—5 cases, with 2 deaths. All the cases occurred in the village of Glasford, in the month of November.

The first two cases were boys aged 3 and 4 years respectively, who lived quite close to each other, and who were constant playmates. The other members of the families were swabbed, and several positive results were obtained. As all these positive contacts had been quite well, the source of infection remained obscure until it was found that another boy, residing in a neighbouring house, had suffered from a sore throat some time previously. A swab from his throat proved positive. Subsequently several suspicious illnesses were reported by the local practitioner or discovered by the local Sanitary Inspector, and these were examined and swabbed by the Assistant Medical Officer. Although in several cases the throat was found to harbour the diphtheria bacillus, in only two cases were the symptoms those of genuine diphtheria.

**Stonehouse.**—1 fatal case.

A girl, aged 5 years, died on the day of notification before she could be removed to hospital. A swab taken from her throat was, however, negative, and the symptoms were of a doubtful nature.

**Blantyre.**—12 cases; all recovered.

The cases were scattered throughout the district, and occurred at intervals throughout the year. None of the cases could be traced back to a previous case, and in some the illness was so slight that the diagnosis was considered doubtful.

**Bothwell.**—71 cases occurred in 61 families, with 9 deaths. The cases were distributed as follows:—Bellshill, 26; Bothwell, 3; Carfin, 3; Carnbroe, 4; Chapelhall, 4; Holytown, 4; Mossend, 2; Newarthill, 5; New Stevenston, 3; Tannochside, 3; Uddingston, 14.

*Bellshill.*—Four cases occurred amongst members of one family. The source of infection was a girl in another family in the same property, who had been notified as suffering from scarlet fever, and was removed to hospital, where, on admission, the case was found to be one of diphtheria. Four days later the first case occurred in the family referred to, and three secondary cases were subsequently notified.

*Bothwell.*—On the 3rd October a case of diphtheria was notified at Elmwood Convent, and another on the 7th October. Both were boarders, and were removed to hospital. The Assist. Medical Officer visited on the 7th October, and took swabs from all the pupils in the class in which the two cases had occurred. Swabs were also taken from all the boarders and those pupils having meals at the convent. Nineteen of the swabs proved positive, while in two cases pseudo-diphtheria bacillus was found. On the 8th October the Assist. Medical Officer again visited, and arranged the removal to hospital of eight of the children giving positive swabs, and who were boarders, while the other thirteen who attended daily at the convent were excluded till further notice. On the morning of the 11th October, the medical attendant telephoned to the District Offices that a further case of diphtheria had occurred among the boarders. An ambulance was sent from the hospital about 12.30 p.m. to the convent, but by that time the mother of the patient had arrived, and, in spite of remonstrance and warning, took the child away in a cab to her home in Carfin. The same day the medical attendant reported that three pupils had complained of sore throat. The Assist. Medical Officer visited and examined the cases, but with negative results. All the pupils now at school, both boarders and those attending daily, were again swabbed, as also were six members of the staff coming into intimate relation with them. Out of the forty-three swabs taken, only one proved positive. Because of the numbers absent, both on account of actual infection and also being kept at home through parents' apprehension (64 on roll, 35 present), and also in view of the opportunities for infection, arrangements were made to close the school for a period of three weeks. As many boarders as possible were sent home, and those remaining were kept under observation. Disinfection was carried out with a Lingner's apparatus. No further cases occurred.

*Uddingston.*—In one case, an adult, investigation showed that infection had occurred outwith the district. Two cases occurred in one family. The onset in the first case was on the 19th April, but the nature of the illness was not suspected till the 24th. The patient was removed to hospital on the 25th. The second case sickened on the 2nd May, and was removed to hospital the same day.

**Cambuslang.**—69 cases, with 3 deaths, distributed thus:—Halfway, 11 (1 death); Cambuslang, 28 (1 death); Newton, 30 (1 death).

*Halfway.*—All the cases occurred in the first half of the year. A boy of four years died before notification was received, and no swab was received to confirm the diagnosis.

*Cambuslang.*—The cases were, on the whole, of a very mild type, and in many, where the patient had complained of slight sore throat, the diagnosis depended solely on the bacteriological report. In such cases, where satisfactory isolation could be carried out, removal to hospital was not urged, and only 9 of the 28 cases were removed to hospital.

*Newton.*—The infection here was apparently conveyed by personal contact, and in some of the cases delay on the part of the parents in calling in the doctor prevented prompt isolation. In the fatal case, the medical practitioner saw the child for the first time one hour before it died.

**Cambusnethan.**—29 cases in 24 families, with no deaths. The cases were distributed as follows:—Morningside, 1; Netherton, 12; Newmains, 9; Stane, 7. Two cases were notified three weeks after the onset, the medical attendant advising in each case that post-diphtheritic paralysis of palate only was present, with a history of sore throat. One case occurred at a dairy farm in the Netherton district, and a visit was made by the Assist. Medical Officer. The infection had probably been contracted in the Burgh of Wishaw, and, the case having been removed to hospital and the other inmates having no symptoms, no further action was taken.

**Dalserf.**—6 cases, with 1 death. One case occurred in Dalserf, and 5 in Larkhall.

The Dalserf case was infected while on holiday in Ayr, and when the medical attendant was called in after its return, the child was seriously ill, and died in three days.

*Larkhall.*—All the cases were mild.

**Dalziel.**—8 cases in 5 families, with no deaths. One of the cases was the child of the attendant at the Middle Ward Hospital, but it was thought that the infection had been contracted at school in the Burgh of Motherwell.

**Hamilton.**—12 cases, with 3 deaths, distributed as follows:—Hamilton, 1; Cadzow, 2; Udston, 2; Quarter, 2; Ferniegair, 5.

*Cadzow.*—Both cases were of laryngeal type, one requiring tracheotomy on admission to hospital.

*Udston.*—A child, aged 15 months, died two days after admission to hospital. It had been taken ill eight days before admission, and three days later it had difficulty in swallowing, but even then the parent did not consider it necessary to call a doctor. There is no doubt that if this child had received antitoxin at the onset of its illness it would have recovered. A cousin of the above case was infected.

*Quarter.*—A child, aged 4 years, suffered from a severe attack of laryngeal diphtheria and died before removal to hospital. The other case occurred in a dairy farm, where, however, the milk was churned.

*Ferniegair.*—5 cases. The first case occurred in Allanton Rows. The mother of the patient also complained of a sore throat, and a swab proved positive. Two other cases in the Rows subsequently took the disease.

**New Monkland.**—36 cases in 33 families, with 5 deaths. The cases were distributed as follows:—Airdrie, 1; Annathill, 11; Caldercruix, 2; Glenboig, 3; Glenmavis, 6; Longriggend, 2; Medrox, 3; Meikle Drumgray, 1; Plains, 2; Roughrigg, 2; Stand, 1; Whiterigg, 2. Two of the cases were notified after death. The cases at Meikle Drumgray and Stand occurred in the same family, the first case having died at the latter place, and the second case, which recovered, occurring after removal to Meikle Drumgray.

**Old Monkland.**—63 cases in 53 families, with 2 deaths. The cases were distributed as follows:—Baillieston, 19; Bargeddie, 9; Broomhouse, 5; Calderbank, 5; Carmyle, 3; Douglas Support, 1; Easterhouse, 2; Glenboig, 6; Tollcross, 3; West Maryston, 10.

*Broomhouse.*—2 cases occurred in the house of a ploughman, whose wife milked at a large dairy farm in the district. A history was obtained of a boy in the family having had a "cold" a week previously, and a swab from his throat was found to be positive. The milker was instructed to cease milking until all danger of infection of milk was past. A negative swab was obtained from her throat.

*Calderbank.*—1 case from this district had visited her home in Armadale on the day when her brother died of diphtheria there. She returned to Calderbank, and developed diphtheria three days later. There had been no cases at Calderbank, so the disease must have been contracted during the visit to the infected house.

*West Maryston.*—In connection with four cases which occurred at West Maryston during January, and in which the history pointed to school infection, the Assist. Medical Officer visited West Maryston

School, and took swabs from the throats of 101 children. The houses of children absent from school were also visited, and swabs taken where indicated. 6 of the swabs proved positive, and these children were excluded from school, with the result that no further cases occurred.

**Shotts.**—25 cases in 17 families, with 1 death. The cases were distributed as follows:—Cleland, 3; Hartwood, 1; Harthill, 2; Northrigg, 2; Salsburgh, 2; Shotts, 14; Springbank, 1.

*Harthill.*—A case occurred at a dairy farm sending out sixty gallons of milk daily. The case—a boy of two years—was removed to hospital, and on the same day the medical attendant took swabs from other three inmates, one of them being a dairymaid engaged in milking. All proved positive, and were removed to hospital. Meantime the milk supply was stopped, according to the terms of the farmer's contract. The following day the Assist. Medical Officer visited, and took swabs from all the inmates not previously swabbed—7 in number. 3 of these were positive, 2 of them being engaged in milking. These latter two were not removed to hospital, but were prohibited from engaging in milking or handling the milk before it left the farm, and arrangements were made so that they did not come in contact with those persons engaged in milking. Outside milkers were obtained, and the milk supply was allowed to be resumed after three days' stoppage. Thus there were 1 clinical case and 6 positive swabs, three of the latter being milkers. 1 clinical case and three persons having positive swabs were removed to hospital, and 3 persons having positive swabs were allowed to remain at home. The history of illness was that, five days prior to the removal of the first case, 2 adults of the household, who subsequently showed positive swabs, complained of slight cold and malaise. There was no complaint of sore throat, but it is probable that the diphtheria bacillus was present in their throats for five days, during which period they milked. There was no evidence, however, of the milk having become infected.

*Shotts.*—A small outbreak occurred in the family of a lodging-house keeper, there being 4 clinical cases, and 3 with positive swabs. All were removed to hospital, with the exception of one adult showing a positive swab. The infection was traced to a servant girl, who had been in the employ of the lodging-house keeper for a fortnight only, during which time she complained of sore throat.

TABLE D3.—SCARLET FEVER.

YEAR.	NUMBERS.		RATES		
	Cases Notified	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1891	1,490	53	3.55	10.39	3.6
1892	1,323	45	3.40	9.01	3.0
1893	828	23	2.77	5.51	1.5
1894	1,043	24	2.30	6.78	1.5
1895	898	26	2.89	5.70	1.6
<i>Average,</i>	<i>1,116</i>	<i>34</i>	<i>3.06</i>	<i>7.42</i>	<i>2.2</i>
1896	648	25	3.85	4.02	1.5
1897	708	20	2.82	4.29	1.2
1898	1,145	44	3.84	6.79	2.6
1899	1,365	65	4.76	7.91	3.7
1900	1,308	52	3.97	7.41	2.9
<i>Average,</i>	<i>1,035</i>	<i>41</i>	<i>3.98</i>	<i>6.13</i>	<i>2.4</i>
1901	1,202	42	3.49	6.66	2.3
1902	867	47	5.42	4.69	2.5
1903	548	17	3.10	2.90	0.9
1904	329	13	3.95	1.72	0.6
1905	281	7	2.49	1.46	0.3
<i>Average,</i>	<i>645</i>	<i>25</i>	<i>3.90</i>	<i>3.44</i>	<i>1.3</i>
1906	463	14	3.02	3.02	0.7
1907	820	21	2.56	4.16	1.0
1908	876	22	2.51	4.42	1.1
1909	1,283	33	2.57	6.41	1.6
1910	1,194	28	2.34	5.91	1.3
<i>Average,</i>	<i>927</i>	<i>24</i>	<i>2.54</i>	<i>4.67</i>	<i>1.1</i>
1911	1,057	22	2.08	5.22	1.0
1912	1,254	29	2.31	6.16	1.4

**Scarlet Fever.**

Cases, 1,254; deaths, 29; fatality, 2.31 per cent.

Table D3 shows the annual prevalence of scarlet fever since 1891. It will be noted that the incidence of scarlet fever has now remained at an almost constant high level for the past four years. The fatality-rate remains satisfactorily low.

Although several cases occurred on dairy premises, in no case did the milk supply become infected.



The number of cases removed to hospital was 1,082, being 86 per cent. of the total cases. 134 of the removals were not notified. There were 29 deaths from scarlet fever during the year.

The monthly distribution throughout the year was as follows:—

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
111	125	97	78	76	64	81	130	92	142	141	117	1254

The age-incidence of the cases and deaths was as follows:—

Ages,	-1	1-5	5-15	15-25	25-45	45-65	65 +	All Ages.
Cases,	10	363	808	52	19	2	—	1,254
Deaths,	—	14	12	2	1	—	—	29

The distribution of the disease according to locality and other data connected with the outbreaks are discussed according to parish.

**Avondale.**—21 cases; no deaths. Until the month of December all the cases notified occurred in the town of *Strathaven*. In December, however, a young woman, aged 17, residing on a farm near Strathaven, took scarlet fever. It was found that a sister, aged seven, had complained of slight sore throat with sickness and vomiting a week before, but the illness was so slight that no doctor was consulted. Examination showed that this illness had also been due to scarlet fever, and the child was removed to hospital. A few days later a dairymaid took the disease; but the milk, which was sent to Glasgow, did not become infected.

**East Kilbride.**—31 cases; no deaths. In October three children residing at a dairy farm took scarlet fever, and on inquiring into the history of illness in the household it was found that three other children had had similar illnesses. All were removed to hospital. As it was suspected that the infection had been got at school, the Assistant Medical Officer of Health visited and examined the scholars. Many of the children had recently complained of sore throats, and several suspects were excluded from school.

**Glasford.**—9 cases; no deaths.

**Stonehouse.**—61 cases; no deaths. 44 of the cases occurred in the months of February and March; 21 of these were secondary cases. As the disease was of a very mild type there was delay in the recognition of the nature of the illness in several cases, and it is probable that several of the mildest cases escaped recognition altogether on this account, and thus helped to spread infection. Medical men find great difficulty in arriving at a correct diagnosis in such cases

unless they are afforded the opportunity of examining the patient during the acute stage, when the rash and other typical signs, which disappear within a few days, are present.

**Blantyre.**—65 cases, with 4 deaths, distributed as follows:—Caldervale, 2; Low Blantyre, 3; High Blantyre, 39; Stonefield, 21. The cases occurred throughout the whole of the year, and the disease did not assume epidemic prevalence at any time. In High Blantyre several house-to-house visitations were made by the Local Sanitary Inspector, and inquiries were made at the houses of scholars who were absent from school on account of illness.

**Bothwell.**—488 cases, with 13 deaths. The cases were distributed as follows:—Bellshill, 59; Bothwell, 52; Carfin, 3; Carnbroe, 4; Chapelhall, 12; Holytown, 4; Mossend, 35; Newarthill, 4; New Stevenston, 11; Omoa, 1; Palace Colliery, 76; Tannochside, 66; Uddingston, 161.

*Bellshill.*—The cases occurred more or less uniformly throughout the year, and infection seems to have been spread chiefly by personal contact. In one family the primary case was followed by 3 secondary cases. In a small dairy farm 3 cases occurred. They were removed to hospital, and the usual precautions taken to safeguard the milk supply. During the first half of the year 5 of the cases notified were found to be "return cases," and 3 families were involved. In one case the disease was contracted outwith the County.

*Bothwell.*—The disease was most prevalent during December. A considerable number of cases occurred in Croftbank Terrace and Waverley Place. Visits were made by the Asst. Medical Officer and local Sanitary Inspector to examine doubtful and missed cases. One case contracted the disease outwith the County. Investigations showed that 4 cases were probably "return cases."

*Carfin.*—One case here had a previous attack of scarlet fever four years ago.

*Chapelhall.*—The history of one of the cases is interesting. A girl, C.W., aged 10, had been on holiday outwith the County. She returned home on the 6th July, and was sick and vomiting, complaining also of sore throat. Next day she felt better, and no doctor was sent for. About a fortnight later a brother went on holiday to Dumfries, and sickened on the day after arriving there (20/7/12). He subsequently returned home. These cases were discovered by a medical practitioner, who was called in on the 22nd August to see a child in the house next door. This child he found to be suffering from

scarlet fever. In order to prevent, if possible, the spread of the disease, he visited Mrs. W. to warn her of the infectious nature of the illness in the neighbouring house, and found the two previously-mentioned cases desquamating, and a third in an earlier stage of the disease. They were all removed to hospital. A secondary case occurred in another family. Thus the first case, C.W., gave rise to 4 secondary cases, and 2 of the latter were in different families.

*Mossend.*—25 of the 35 cases occurred during the first half of the year. In many cases infection seemed to have been spread by personal contact. Two cases were doubtful, and three contracted the disease outwith the district.

*Newarthill.*—Three were primary cases infected outwith the County, and involving three families. In one family the primary case was not recognised till a secondary case occurred.

*New Stevenston.*—In one family the first case was not recognised till desquamation set in, and two secondary cases occurred, one of the cases being in another family. In each of three families a primary case gave rise to a secondary one.

*Palace Colliery.*—In January the local Sanitary Inspector discovered, in the course of his investigations, several cases of illness of a suspicious nature. The Asst. Medical Officer visited, and found that two of the cases had scarlet fever, and they were removed to hospital. Following on the re-opening of the school after the summer vacation, an increase in the number of cases occurred. The Asst. Medical Officer visited the school, and in one class found it necessary to exclude two boys and seven girls, who had histories and signs suspicious of scarlet fever. Four pupils who were absent from school from an unknown cause were visited at their homes. Three had illnesses of a doubtful nature, and were excluded from school, while another was found to be suffering from scarlet fever, and was removed to hospital. The disease, however, still prevailed, and the greatest number of cases occurred in November. Great difficulty was experienced in getting the first case in households, the nature of the illness often not being recognised till desquamation set in and secondary cases occurred.

*Tannochside.*—During the month of March a large number of notifications were received, probably due to unrecognised cases being mistaken for measles, which was also prevalent. As one of the teachers (Miss M.) in the school contracted scarlet fever, the Asst. Medical Officer visited. It was learned from the headmaster that no class was specially affected, the cases occurring sporadically throughout the school. All the pupils in the class in which Miss M. taught

were examined, and two were found desquamating, one in addition having a profuse nasal discharge. They were excluded from school and isolated at home. In the beginning of October the local Sanitary Inspector discovered a pupil attending school with suspicious symptoms. The child was sent home, and was subsequently notified as suffering from scarlet fever. Two cases were probably "return cases."

*Uddingston.*—The prevalence of the disease increased during the latter half of the year, reaching its maximum in the last quarter. More than half the cases were of school age, 99 out of the 161 cases being between the ages of 5 and 15. On the 30th January the Asst. Medical Officer visited the Grammar School, as several cases of scarlet fever had occurred among pupils attending the same class, and home infection could not be traced. All the pupils in the class affected were examined. One pupil, aged 8, showed desquamation on the neck and upper part of the chest, and had suffered from sore throat a week previously. She was excluded from school, and kept under observation at home.

On the 5th February the Asst. Medical Officer visited the Grammar School, as unrecognised cases were again suspected to be attending. All the pupils in a particular class were examined, and it was found necessary to exclude eight of them, to be kept under observation at home. After these measures were taken the notifications gradually lessened. On the 13th May the Asst. Medical Officer again visited the Grammar School, as some cases occurred which pointed to school infection, but no pupils with suspicious illnesses were detected. In August the Asst. Medical Officer visited two families in which unrecognised cases were suspected. In one of the families two suspicious cases were discovered, and excluded from school.

In October the prevalence of the disease again increased, and on the 7th the Asst. Medical Officer visited the district. At the Grammar School the pupils in a class in which there were six absentees from scarlet fever were examined, but only one boy had suspicious signs. He was excluded for a fortnight. St. John's R.C. School was next visited, and inquiries were made as to suspicious illnesses. One class was examined and one case excluded on suspicion. A visit was made to families where members were absent from school from doubtful causes. In one family the boy to be seen was out at the time of the visit, but was met coming down the street. On examination there was desquamation of the skin on the chest, palms, and soles. The nose was discharging and the left parotid gland was swollen. He had been absent from school from about the 20th September, complaining of sore throat, headache, sickness, and vomiting, and at the beginning of the illness

was seen by a local practitioner. As it was quite apparent that the boy was suffering from scarlet fever, and was now going about in a most infectious condition, he was removed to hospital. Many cases still continued to occur during November, but in December there was a marked diminution in the number notified.

One household gave rise to five cases. Two of the inmates were notified on the 2nd February as suffering from scarlet fever. The Asst. Medical Officer visited, and found three others desquamating. The first case in this household probably occurred about six weeks before the subsequent cases were notified. In another family the primary case was not recognised till sixteen days after the onset, and two secondary cases occurred, while in still another family the nature of the disease was not recognised until thirty days after the onset, but no secondary cases occurred.

**Cambuslang.**—227 cases, with 2 deaths. The cases were distributed as follows:—Cambuslang, 83; Halfway, 52; Newton, 92.

*Cambuslang.*—The number of cases notified each month remained remarkably constant, except in the months of March and July. As the schools are closed for the Easter and summer vacations during these months, the suggestion that contact at school kept up infection during the rest of the year presents itself, but no direct evidence of this was obtained. No fewer than 25 cases occurred in 7 families, and in one family 6 children were affected. This large number of secondary cases was due to the failure to recognise the disease in the primary case on account of the mildness of the symptoms.

*Halfway.*—52 cases; all recovered. The majority of the cases occurred in the spring of the year, 19 cases being notified in the months of March and April. As 16 of these cases obtained their milk supply from a dairy company, the Asst. Medical Officer visited that dairy and also the farm, but no case of scarlet fever was found at either place. The dairy supplies the majority of the residents in Halfway with milk.

*Newton.*—92 cases, with 1 death. As in Halfway, the cases in Newton were of a very mild type, as is evidenced by the fact that only one death occurred in a total of 144 cases for both districts. When the disease is so mild, not only are the cases difficult to diagnose, but in some cases the symptoms may be so trivial that no doctor is consulted, and the cases escape recognition altogether. Such outbreaks are much more difficult to control than those in which the well-marked features of the disease lead to prompt isolation of the cases. By means of house-to-house visitations, and by examination of the

children attending the infected classes at school, the Assistant Medical Officer of Health found 12 children who had suffered from suspicious illness, and these were excluded from school.

**Cambusnethan.**—48 cases, with no deaths. The cases were distributed as follows:—Netherton, 13; Newmains, 17; Overtown, 11; Stane, 4; and Waterloo, 3.

*Newmains.*—In one case where home isolation was permitted, two secondary cases occurred in a neighbouring family. Three were "return cases." One case contracted the disease outwith the district.

*Overtown.*—Eight of the 11 cases occurred in January. One case gave rise to three secondary cases in another family. One was a "return case," and one was imported.

**Dalserf.**—34 cases; no deaths. The cases were distributed as follows:—Ayr Road, 1; Ashgill, 1; Dalserf, 1; Larkhall, 24; Netherburn, 1; Shawsburn, 2; Swinhill, 4. The number of cases notified is the lowest received since 1906, and a survey of the cases presented no unusual features.

**Dalziel.**—7 cases, with 1 death.

**Hamilton.**—21 cases, with no deaths, distributed as follows:—Hamilton, 3; Eddlewood, 2; Udston, 2; Limekilnburn, 2; Quarter, 6; Ferniegair, 6. In January a girl, aged 4, residing on a dairy farm near Quarter, was notified and removed to hospital. The Asst. Medical Officer of Health visited, and found that a boy, aged 5, and a man, aged 20, who assisted in milking, both showed signs of scarlet fever. The boy had been out of sorts for a fortnight, while the man had complained of sore throat three days before. Both were removed to hospital. The milk, which was retailed in the burgh of Hamilton, did not become infected.

**New Monkland.**—59 cases, with 3 deaths. The cases were distributed as follows:—Airdrie, 8; Annathill, 9; Arden, 2; Caldercruix, 11; Eastfield, 1; Greengairs, 15; Longriggend, 8; Medrox, 2; Moffat Mills, 2; and Plains, 1.

*Caldercruix.*—Most of the cases occurred in the beginning of the year, and school infection was suspected. On the 7th February the Asst. Medical Officer visited Eastfield Public School, and examined every scholar. Three were found desquamating, and three had suspicious signs. These were excluded. On the 8th February the

Asst. Medical Officer visited Caldercruix School, and the scholars were examined. Two, a brother and sister, showed profuse desquamation, and on calling at their home it was learned that another sister was in bed complaining of sore throat, headache, and sickness. A doctor was in attendance. Those of the family attending school were excluded. Arden Rows were next visited, as the local Sanitary Inspector reported that, in one of the houses, where a child had been removed two days previously with scarlet fever, another had a suspicious illness. It was found that a boy, aged 8, had been out of sorts for nearly three weeks, and was being treated for bronchitis. Examination showed desquamation on the neck and chest. The mother was instructed not to send him to school for at least one month. After these measures had been taken no fresh cases occurred.

*Greengairs.*—All the cases occurred in the last half of the year. The disease was of a mild type, and seems to have been spread by personal contact. One was a "missed case" and one a "return case."

**Old Monkland.**—128 cases, with 4 deaths. The cases were distributed as follows:—Baillieston, 23; Barrachnie, 3; Bargeddie, 12; Broomhouse, 2; Calderbank, 50; Coatbridge, 4; Douglas Support, 1; Easterhouse, 2; Gartsherrie, 1; Gartcosh, 1; Glenboig, 4; Mount Vernon, 6; Old Monkland, 7; Swinton, 1; Tollcross, 9; West Maryston, 2.

*Calderbank.*—The greatest number of cases occurred in August. No notifications were received during the last two months of the year. In many cases the type of the disease was very mild, and primary cases were frequently missed. The local practitioner had often great difficulty in getting correct histories of illness from the parents of children suffering from suspicious symptoms, and in many cases the doctor was not called in till the rash had faded. It was arranged that the Asst. Medical Officer would visit all doubtful cases with the medical attendant. Two cases were not notified till desquamation set in. In one family where a case had occurred the local Sanitary Inspector found other two children desquamating. Two families gave rise to 8 of the cases, each family contributing 4. Two were "return cases," one infected by a sister, while the other was infected by a discharged case in another family.

*Old Monkland.*—Five cases occurred in the family of a ploughman residing at the Cottage, Farm B. The cottage is a single-storey building, consisting of 2 one room and kitchen houses, and situated

about two hundred yards from the farm. One of the houses was occupied by the F., and the other by the L. family. Mrs. F. was removed to hospital on the 13th September, suffering from scarlet fever, and previous to that four of her children were removed to hospital at short intervals, with scarlet fever. The Asst. Medical Officer visited, and investigation showed that seven of the L. family had recently suffered from sore throat. On examination of those who had complained, however, there was nothing to warrant a definite diagnosis of scarlet fever, but those attending school were excluded. No further cases occurred.

**Shotts.**—55 cases, with 2 deaths. The cases were distributed as follows:—Caldercruix, 8; Cleland, 25; Dykehead, 2; Harthill, 9; Salsburgh, 2; Shotts, 9.

*Cleland.*—Three cases occurred at a dairy farm, M. They were all notified on the 4th October, and removed to hospital the same day. The first case sickened on the 19th September, but the nature of the illness was not suspected till desquamation occurred and the other 2 cases sickened. All three slept in the same bed. The Asst. Medical Officer visited and examined the other inmates, but none showed any evidence of scarlet fever. The necessary precautions were taken to safeguard the milk supply.

*Harthill.*—Three of the cases were not notified till desquamation set in, and 2 others were doubtful.



TABLE D4.—TYPHOID FEVER.

YEAR.	NUMBERS.		RATES.		
	Cases Notified.	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1891	417	61	14.62	2.9	4.2
1892	374	58	15.50	2.5	3.9
1893	776	74	9.53	5.1	4.9
1894	333	47	14.11	2.1	3.0
1895	425	38	8.94	2.7	2.4
<i>Average,</i>	<i>465</i>	<i>56</i>	<i>11.95</i>	<i>3.0</i>	<i>4.2</i>
1896	361	35	9.7	2.2	2.1
1897	269	42	15.61	1.6	2.5
1898	486	56	11.52	2.9	3.3
1899	404	56	13.86	2.3	3.2
1900	232	34	14.65	1.3	1.9
<i>Average,</i>	<i>350</i>	<i>45</i>	<i>12.73</i>	<i>2.0</i>	<i>2.6</i>
1901	471	53	11.25	2.6	2.9
1902	231	41	17.77	1.2	2.2
1903	247	42	17.00	1.3	2.2
1904	149	23	15.43	0.8	1.2
1905	371	40	10.8	1.9	2.0
<i>Average,</i>	<i>294</i>	<i>40</i>	<i>13.54</i>	<i>1.5</i>	<i>2.1</i>
1906	341	44	12.90	1.7	2.2
1907	150	17	11.33	0.7	0.8
1908	183	18	9.83	0.9	0.9
1909	185	9	4.86	0.9	0.4
1910	172	9	5.23	0.8	0.4
<i>Average,</i>	<i>206</i>	<i>19</i>	<i>9.40</i>	<i>1.0</i>	<i>0.9</i>
1911	154	22	14.28	0.7	1.0
1912	117	17	14.53	0.5	0.8

**Typhoid Fever.**

Cases, 117; deaths, 17; fatality, 14.53 per cent.

The number of cases removed to hospital was 107, or 91 per cent. of the total.

The age incidence of cases and deaths was as follows:—

Ages,	-1	1-5	5-15	15-25	25-45	45-65	65+	All Ages.
Cases,	—	19	45	20	29	3	1	117
Deaths,	—	—	5	6	6	—	—	17

Table D4 shows the annual prevalence since 1891.

The number of cases notified during the year is by far the lowest yet recorded. The fatality-rate given in column 4 remains at the same high level as in the previous year. Personal contact was found to be the main factor in the spread of the disease, and it is only by careful and thorough investigation into all suspicious illnesses among contacts during an outbreak that the mild cases, which are often unrecognised, can be discovered and the outbreak checked. Several such cases were discovered by the Asst. Medical Officers of Health. There was no evidence that infection had been spread by means of water or milk.

A large number of specimens for Widal's test was received from medical practitioners, and the result of this test is a considerable aid to diagnosis and early recognition of the disease. A short account of the investigations made and preventive measures adopted in each parish will now be given.

**Avondale.**—The only case occurring in this parish was imported from Glasgow.

**East Kilbride.**—One case was notified, but the diagnosis was considered doubtful.

**Glasford.**—No cases were notified.

**Stonehouse.**—No cases were notified.

**Blantyre.**—6 cases; no deaths. In two of the cases the patients were found not to be suffering from enteric fever. The four genuine cases, occurring in different parts of the town, were not connected with each other.

**Bothwell.**—25 cases, with 2 deaths. The cases were distributed as follows:—Bellshill, 9; Mossend, 2; Newarthill, 10; Palace Colliery, 2; and Uddingston, 2.

**Bellshill.**—On the 6th February, 2 out of 3 specimens of blood sent in for examination proved positive to Widal's test. The positive specimens were taken from Mr. and Mrs. M.M., Pollock Street, while the negative specimen was from a lodger, who, nevertheless, was

suffering from typhoid fever. They were removed to the hospital at Motherwell. The Asst. Medical Officer visited on the 8th February, and arranged for the removal of the other members of the family—five children—to Bellshill Hospital for observation. On the 19th February one of the contacts, whose blood was negative, sickened of typhoid fever after being eleven days under observation, and was transferred to Motherwell Hospital. Investigations showed that one of the family, a girl, aged 4 years, was sick and ailing about the 18th December, 1911, and had been treated for pneumonia. A specimen of her blood and one from a brother, aged 9 years, who sickened about the 6th January, were now found to be positive. Mrs. M'M. also sickened about the 6th January, but was not confined to bed till the 29th January. Her husband sickened on the 21st January, and the lodger on the 6th February. The source of infection was evidently a lodger in a neighbouring family, who was removed to hospital on the 5th December, and who had previously lodged with a family in which an outbreak of typhoid fever had occurred in November, 1911.

*Mossend.*—One of the cases was probably associated with the outbreak in Pollock Street, Bellshill. The other case was a Polish child, and the source of infection could not be traced.

*Newarthill.*—The cases occurred in four families, all on intimate terms with one another, and three of them related. Investigation showed that the case which gave rise to the outbreak contracted the disease outwith the County. The first case notified, S. S., a miner, aged 28, Watson's Land, was admitted to hospital on the 19th October. He sickened about the 8th. The Asst. Medical Officer visited on the 21st October, and found a daughter, M. S., aged 4 years, ill in bed. She sickened on the 18th September, and the doctor in attendance had diagnosed meningitis. A specimen of blood was taken and proved positive. She was removed to hospital on the 22nd October. The three other members of the family, Mrs. S. and two children, were next examined. Mrs. S. denied that she had recently been ill, but as she looked rather pale, a specimen of blood was taken and proved positive. It was learned, by careful inquiry from outside sources, that this woman had suffered from very suspicious symptoms a few days prior to the 20th August, the date upon which she returned home from a holiday in Stornoway, where she had been in contact with a niece, who probably was suffering from typhoid fever. Specimens of blood from the other two children proved negative. One of them, C. S., aged 1 year, had diarrhoea lately, attributed to "teething." In the family next door, a young man, aged 19 years, was found ill

in bed, evidently suffering from typhoid fever. A specimen of blood taken by his doctor was negative on the 1st October. Another specimen was now taken and found to be positive. He was removed to hospital on the 22nd October. The other members of the family were well. The house of J. S., miner, Sievewright's Land, a brother of the patient S. S., was next visited. A boy, E. S., aged 12, was found suffering from suspicious symptoms. He sickened on the 7th October, and was confined to bed for a fortnight. A blood specimen taken proved positive, and he was removed to hospital on the 2nd October. The boy was occasionally at his uncle's house in Watson's Land, after the girl M. S. took ill, and sometimes had food there. The other inmates, the father and a girl, M. S., aged 17 years, were said to have had no recent illness, but later it was learned that the girl had been ill for about a week with suspicious symptoms. She was removed to hospital on the 29th October, suffering from typhoid fever. No fresh cases occurred until the 19th November, when the local Sanitary Inspector, who made frequent visits to the districts, reported that the girl C. S., aged 1 year, Watson's Land, had again an illness with fever and bronchitis. A Mrs. S., grandmother of the two previous cases, E. S. and M. S., who nursed them before their removal to hospital, had been feeling out of sorts since the 3rd November. The medical attendants on these patients were informed by telephone, and blood specimens were sent in. The specimen from C. S. was again negative, but that from Mrs. S. was positive, and on the 20th November she was removed to hospital. A grandson who was staying with her subsequently developed the disease, and was removed to hospital. On the 24th December two sisters, J. S., aged 12 years, and M. S., aged 9 years, Warnock's Land, were notified as suffering from typhoid fever, and were removed to hospital. They both sickened about the 21st December. The Asst. Medical Officer visited on the 25th December, and examined the other inmates, but no evidence of recent illness could be detected. The house of S. S., Watson's Land, was revisited, and the girl C. S., aged 1 year, whose blood proved negative on two previous occasions, was again examined. The mother stated that for the last three weeks the child had been quite well. A specimen of blood was again taken and proved positive. She was removed to hospital. This case, a cousin of the two previous cases, J. S. and M. S., probably infected them. No fresh cases occurred.

*Palace Colliery.*—In June, M. L., aged 9 years, was notified as suffering from typhoid fever, but the source of infection could not be traced. The other case, Mrs. G., occurred in July. The Asst. Medical Officer visited, and arranged for the removal of her five children to

Bellshill Hospital for observation. The source of infection was not traced.

**Cambuslang.** — 13 cases, with 1 death. Eight of the cases occurred in the tenement properties near the junction of Colebrooke Street with Mansion Street. The first case in this locality occurred towards the end of 1911 in Mrs. B., who had been infected in Ireland, and who had sickened a few days after her return to Cambuslang. Two months later, in the course of investigation into the source of infection in three neighbouring families, it was found that a daughter of B., aged 3, had had an illness suggestive of enteric fever shortly after her mother, and as this child's blood proved positive to Widal's test, it is possible that her illness had been the cause of the outbreak. Of the remaining 5 cases, 1 was considered doubtful, and was not removed to hospital, while the others had no causal relationship with each other.

**Cambusnethan.** — 7 cases, with 2 deaths. The cases were distributed as follows:—Newmains, 4; Stane, 3.

*Newmains.*—On the 24th December a girl, C. C., aged 8 years, Brown Street, was removed to hospital suffering from typhoid fever, and died there from perforation of the gall bladder. She sickened on the 11th December. It was learned that a sister, J. C., aged 6 years, had just recovered from an illness believed to be pneumonia, but a blood specimen taken on the 25th December proved positive, and on the following day she was removed to hospital. On the 3rd January, 1913, a specimen of blood sent in from Mrs. C. was positive, and she was removed to hospital the same day. The Asst. Medical Officer visited, and examined the other inmates, but no evidence of recent illness was detected. Three other children in the family subsequently developed the disease, and were also removed to hospital.

*Stane.*—The 3 cases occurred at Manse Road, in the same family. The first case, a child, aged 3 years, sickened on the 9th February, and was removed to hospital on the 17th February. The other 2 cases sickened about the 7th March, and were removed to hospital. The source of infection was not traced.

**Dalserf.** — 22 cases, with 3 deaths. All the cases occurred in *Larkhall*.

The incidence of typhoid fever in recent years throughout Larkhall has been comparatively slight. Since 1905 it has been as follows:—

1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
91	13	6	8	3	—	10	22

The large number of cases occurring in 1905 was due to an infected milk supply, and was the subject of a special report incorporated in the Annual Report for that year.

During 1912 the prevalence was almost entirely confined to Meadowhill Rows, where investigations made by the Asst. Medical Officer of Health showed that typhoid fever existed in some four or five families without the true nature of the illness being recognised.

*Meadowhill Rows* occupy a triangular piece of ground at the south-east end of Drygate Street, Larkhall. The sanitary conveniences consist of water-closets situated in blocks of four, and fitted with automatic flushing cisterns. The slop water is thrown into the surface drains which run alongside the dwellings. Dry household refuse is collected in ashbins, and removed weekly by the owner, there being no special Scavenging District.

*S. and G. families.*—On 11/6/12 Mrs. S., 12 Meadowhill Rows, was removed to hospital, a specimen of her blood having proved positive to Widal's test. The Sanitary Inspector visited the neighbouring houses, when it was found that J. G., aged 5, 45 Meadowhill Rows, a sister of Mrs. S., had been confined to bed for six days with an illness associated with sore throat. In view of the nature of Mrs. S.'s illness, a blood specimen was sent by the practitioner in attendance, and this proving positive, the child was removed to hospital on 15/6/12. The Asst. Medical Officer of Health visited, along with the local Sanitary Inspector, on 15th instant, examined all the other members of the S. and G. family, and although no history of illness was obtainable, specimens of blood for Widal's test were taken from the younger children. These all proved negative. A house-to-house visitation was next made throughout the greater part of the Rows, the only history of illness being obtained at No. 146, where a boy, J. M. (14), had complained of persistent headache, said to be due to influenza, which was followed by diarrhœa. The onset of the illness was about 16/4/12, and the boy had been confined to bed for five weeks. For the past three weeks since 25/5/12 he had been running about the Rows, but he had not regained his usual health, and the medical practitioner had advised a change of air. The boy had left on 13/6/12 for Dunoon. On Sunday—16/6/12—the Sanitary Inspector continued the house-to-house visitation, and on the 17th instant the Asst. Medical Officer of Health again visited, when illnesses in the following families were investigated:—

*C<sup>1</sup>. family.*—J. C., aged 10, 115 Meadowhill Rows, was in bed when the Sanitary Inspector visited on 16/6/12. He took ill about 7/6/12 with symptoms suggestive of enteric fever. The medical attendant

became suspicious of enteric fever on 16/6/12, and sent a specimen of blood, which proved positive on 17th, when the boy was removed to hospital. The history of previous illness in this household was as follows :—

Mrs. C. (33), onset 8/3/12. Complained of pain in back, arms, and legs, with bad headache. She was confined to bed for three weeks, and had lost a great deal of flesh during the illness.

Baby C., aged 1 year and 10 months, onset 12/4/12. Became fretty and dull, and disinclined for food. Evidently had pain in abdomen. Diarrhoea lasted about a week. Confined to bed one week. Now well.

R. C. (8), onset 17/4/12. Complained of pain at back of neck. Off school 3 days. Doctor not consulted.

M. C. (6), onset 6/6/12. Complained of shivering and general feeling of illness. Duration about one week.

John C. (10), onset 6/6/12, with headache, shivering pain in abdomen, and diarrhoea.

George C. (4). In bed on 17/6/12 when Asst. Medical Officer of Health visited. Onset 15/6/12, with vomiting, pain in abdomen, loss of appetite, and purging. Examination showed this to be a typical case of enteric fever.

Specimens of blood were taken from the whole of the inmates, and all proved positive except Mr. C. All the children were removed to hospital on the following day, Mrs. C., whose illness dated back 3½ months ago, being allowed to remain at home.

*C<sup>2</sup>. family.*—C. C. (21), 110 Meadowhill Rows, in bed when visited. She had been ill since 3/6/12. Complained at onset of headache, which gradually increased in severity, and for the past few days of pain of abdomen. She continued at work in silk factory until 11/6/12, when she was compelled to go to bed.

*Examination* proved this to be a case of typhoid. The blood proved positive on 18/4/12, and she was removed to hospital. The other inmates here had been well.

*L. family.*—M. L. (13), 68 Meadowhill. On 14/6/12 complained of headache and feeling of weakness. No appetite. Confined to bed since 15/6/12.

*Examination.*—A typical early case. Blood positive, 18/6/12. Removed to hospital.

On 18/6/12 the Asst. Medical Officer of Health again visited and examined a boy, J. S., who had sickened on 16/6/12. He was removed to hospital on 19/6/12.

Three secondary cases occurred among the members of these households, and as the infection was so widespread, frequent house-to-house inspections were made throughout the Rows by the Asst. Medical Officer and the local Sanitary Inspector, when all illnesses were investigated. In this way 3 more cases were discovered in the beginning of July, after which the outbreak terminated. In November three members of one family living in the Rows took the disease, but no further cases occurred. In all, 18 cases occurred in Meadowhill Rows during the year, while three persons whose blood gave a positive reaction were regarded as positive contacts.

**Dalziel.**—2 cases and 1 death, and 15 cases in year 1913.

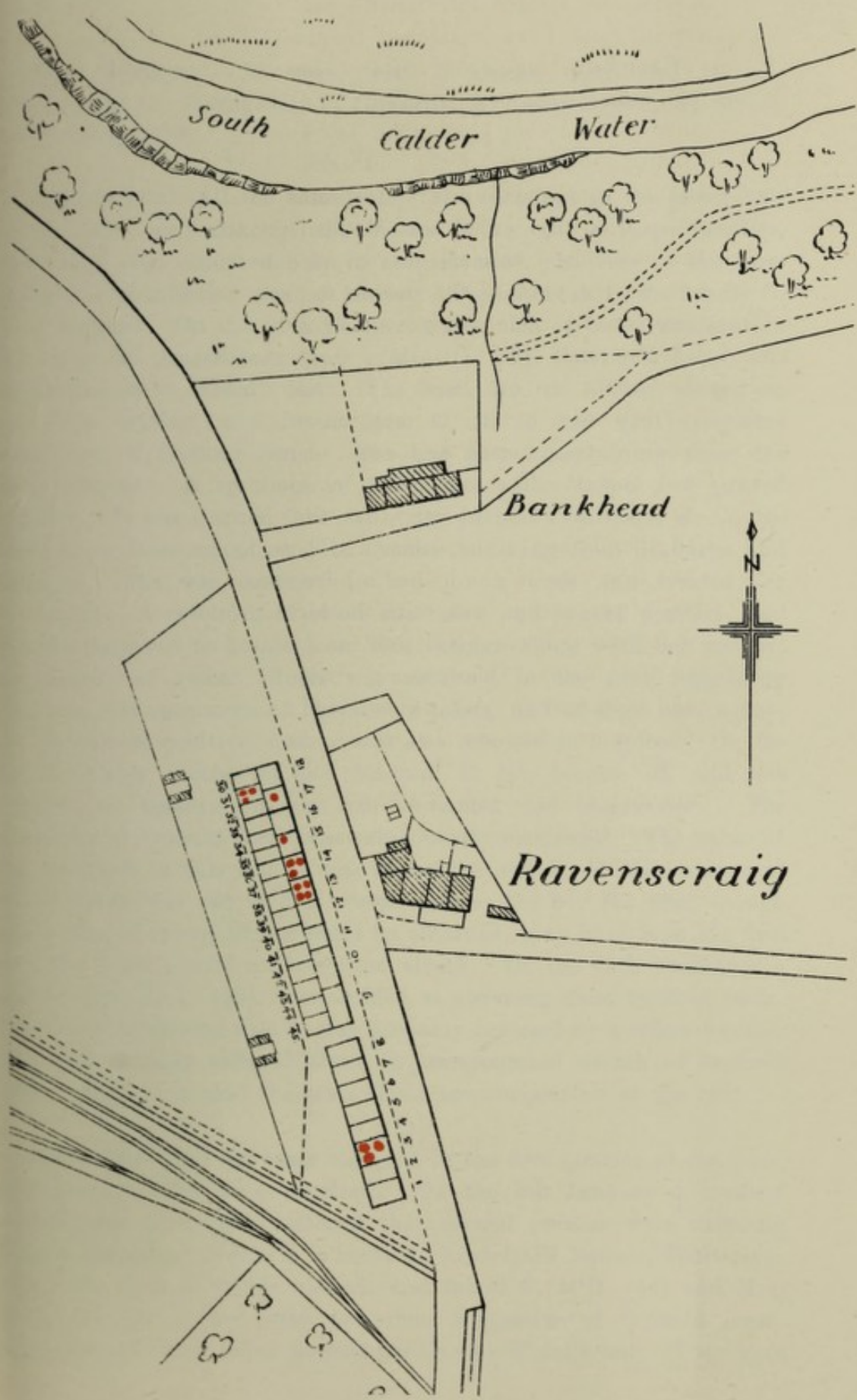
*Ravenscraig Rows*, where the cases occurred, consist of one-storey houses, mostly back-to-back. A gravitation water supply is provided from stand-pipes. There are two large privy middens about 35 feet from the houses, and the waste water is carried off in surface channels. On the 19th November a specimen of blood from a girl, N. M., aged 4, residing at 17 Ravenscraig Rows, gave a positive Widal's reaction, and the patient was removed to hospital on the same day. She probably sickened on or about the 2nd November. The Asst. Medical Officer visited on the 20th November, and examined the other members of the family, of which there were six. Only one, a child of 1½ years, had a history of recent illness, but a specimen of blood taken proved negative to Widal's test. Five houses (Nos. 16, 2, 3, 15, and 33) were next visited, and specimens of blood taken where an illness suggestive of typhoid fever had occurred. None gave a positive result, and the source of infection could not be traced. On the 18th December a blood specimen from Mrs. M., No. 33, was sent in by a local practitioner. This proved negative, but on the 28th December the medical attendant considered the illness to be of a typhoid nature, and the patient was removed to hospital, where she died. The hospital physician (Dr. Reid) was of the opinion that the illness was not typhoid fever.

No further cases occurred until the 15th April, 1913, when a specimen of blood from a girl, E. G., aged 9, residing at No. 15, proved positive to Widal's test. She was at once removed to hospital. Fourteen cases subsequently occurred in four families at Nos. 13, 31, 3, and 14. All five families were on intimate terms with one another, and three of the mothers were sisters. It is worthy of note that in the house from which the first case (E. G.) was removed, the mother—one



of the three sisters already mentioned—was confined a few days later. Such an event must have occasioned frequent intercourse between the inmates of her own house (No. 15) and those of her two sisters (Nos. 13 and 31), which were next involved; and, as will be seen later, one of the inmates of another house (No. 14) was also infected about this time. During the course of the outbreak house-to-house visitations were made by the local Sanitary Inspector, and several cases were discovered in this way. The Asst. Medical Officer visited frequently, and specimens of blood were taken from all doubtful cases. There was a tendency on the part of the people to deny the existence of any recent illness among their children or friends. Thus, in No. 14 the father sickened about the 17th May, then a child on the 1st June, and another about the 8th June. The Asst. Medical Officer visited this house frequently, but on no occasion would the mother admit of recent illness, either in herself or the rest of her children. A specimen of her blood and one from one of her children proved positive, and it was learned from a neighbour that the mother, about "Easter time," had complained of headache and general malaise. She was probably the first case in the house to have been infected, and, after a great deal of persuasion, was, with the rest of her children, removed to hospital for observation. No fresh cases occurred, but on the 23rd of June the Asst. Medical Officer again visited the Rows, as a specimen of blood had been sent in with a suspicious history. Examination of the patient, however, showed that there was no evidence of typhoid fever.

No connection could be traced between the cases in November, 1912, and those cases which subsequently occurred in the first half of 1913, but there is good reason to believe that mild unrecognised cases occurred from time to time in the interval.

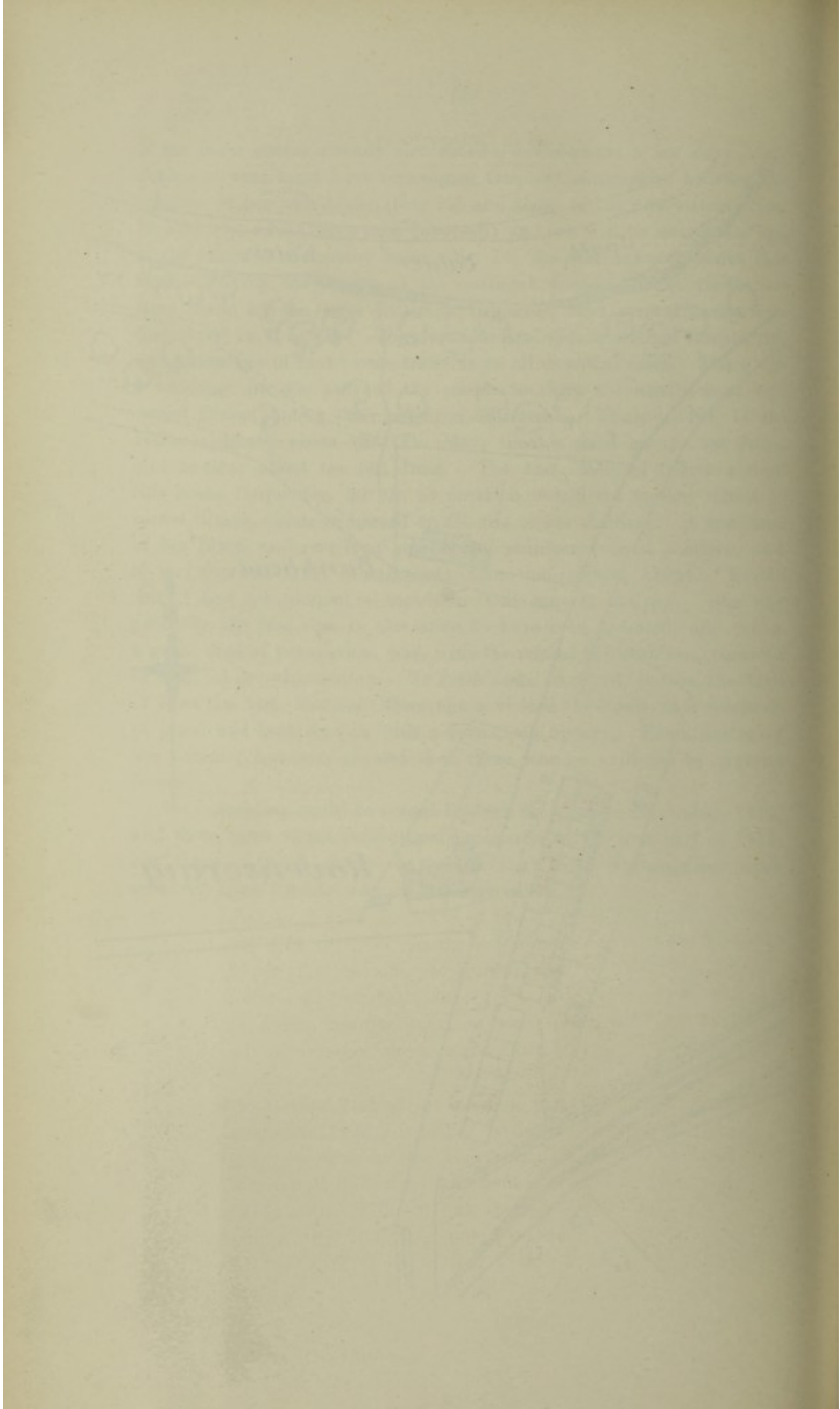


South Calder Water

Bankhead

Ravenscraig

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18  
19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50



**Hamilton.**—1 case occurred in Cadzow Rows.

**New Monkland.**—28 cases, with 5 deaths, distributed thus:—Caldercruix, 8; Darnjavil, 1; Glenboig, 3; Longriggend, 5; Stand, 1; Whiterigg, 10.

*Caldercruix.*—All the cases except one occurred in the latter half of the year, and although the disease broke out in large families, secondary cases occurred only in one instance. In four of the cases the source of infection was not traced. The outbreak in the family C. is of interest. On the 26th October a specimen of blood was sent in by a medical practitioner from a Mrs. C. (32), Cairney's Land, but was negative to Widal's test. The Asst. Medical Officer visited on the 29th October, and found Mrs. C. ill in bed with symptoms suspicious of typhoid fever. She had been complaining since the 18th October. A specimen of blood was again taken and proved positive. It was learned that one of the patient's children, K. C. (8), came home from school on 11th October suffering from headache and sickness. She was confined to bed for a week and treated for bronchitis. A specimen of blood was taken and proved positive, and she was removed to hospital on 30th October along with her mother. No history of recent illness was obtained in the four remaining children, but specimens of blood were taken, and of these one, a boy, R. (2), proved positive, and he was also removed to hospital. On the 1st November another of the children, P. (4), became ill, and was removed to hospital on the 5th November for observation. The diagnosis of typhoid fever was subsequently confirmed. The cause of the outbreak in this family was either the girl K. C., the nature of whose illness was not at first recognised, or the boy R., who, though no history of recent illness could be obtained, may have been the first to suffer from a mild unrecognised attack. On the 19th November a mill-worker, J. Y. (35), was notified as suffering from typhoid fever. Investigation showed that he was probably infected by a fellow-worker, who had recently suffered from an unrecognised attack of typhoid fever. Both men used the same closet accommodation at the mill.

*Whiterigg.*—All the cases occurred in the first quarter of the year, and four families were involved. On the 8th January a medical practitioner in Airdrie 'phoned that several persons were suffering from a suspicious illness in a house at Airdriehill Square, Whiterigg. The Asst. Medical Officer visited, and found P. M'G. (44) and Mrs. M'G. (34) ill in bed with symptoms suggestive of typhoid fever. Specimens of blood taken proved positive to Widal's test. They were

removed to the County Hospital, Motherwell, while the other inmates of the house, four children, were removed to Bellshill Hospital for observation. The source of infection was not traced. The next case occurred on 22nd January, when a boy, W. B. (8), Airdrie Hill Square, was notified as suffering from typhoid fever. He was removed to hospital on the 23rd January. The Asst. Medical Officer visited the same day, and a house-to-house inspection was made, but no unrecognised cases were discovered. On 16th March the Asst. Medical Officer again visited, as two fresh cases were reported, each in different families. On visiting the first family, M'G., 44 Airdrie Hill Square, the father, J. M'G. (26), was found very ill in bed. Mrs. M'G. (32) was also ill in bed with symptoms of typhoid fever. On enquiry it was learned that the baby, C. M'G. (11 months), had "catarrh of the bowels" six weeks previously, but for the past three weeks was quite well. Specimens of blood were taken from each, and all proved positive. Mrs. M'G. was removed to hospital, but J. M'G. was so ill that his removal was not advisable. He died next day. The baby, C. M'G., was left in charge of her grandmother. The house of M., two doors off, from which one of the children, K. M. (9), was removed to hospital with typhoid fever, was next visited. Two of the children, M. M. (2½) and L. M. (4), complained of suspicious symptoms. Specimens of blood taken proved positive, and both children were removed to hospital. A house-to-house visitation was made, but with negative result. The cause of the latter outbreak was probably an unrecognised typhoid illness in baby M'G., who infected her father and mother and the three M. children, who all had been in intimate contact with her. Mrs. M. subsequently contracted the disease. No further cases occurred.

**Old Monkland.**—6 cases, with 1 death. The cases were distributed as follows:—Bargeddie, 1; Cuilhill, 4; Tollcross, 1.

*Cuilhill.*—On the 26th August, A. W. (28), Low Row, was removed to hospital suffering from typhoid fever. He sickened on the 17th August. The Asst. Medical Officer visited and examined the rest of the family. There was no history of recent illness among them, but blood specimens were taken, which, however, proved negative. On visiting the house next door, where the father of the patient resided, it was learned that a boy, S. A. (12), had been ill for about a week in the beginning of August with suspicious symptoms. A blood specimen was now taken, but it proved negative. The other inmates were well. On the 14th September, J. M'L. (11), Store Row, was removed to hospital suffering from typhoid fever. The patient's mother cleaned the privies in Low Row, where the previous case

occurred, and the boy frequently assisted his mother. One case was imported, and gave rise to a secondary one.

**Shotts.**—6 cases with 3 deaths, distributed thus:—Caldercruix, 1; Eastfield, 2; Salsburgh, 1; Shotts, 2.

*Caldercruix.*—On the 1st November the Asst. Medical Officer visited the house of M'A., Main Street, to see a case of suspected typhoid fever. The patient, a boy, T. M'A. (12), was found to be suffering from typhoid fever, and was removed to hospital on the 2nd November. It was learned that the father, T. M'A. (46), was off work recently. The doctor in attendance thought his illness to be influenza. A specimen of his blood was taken and proved positive to Widal's test. He had probably suffered from a mild attack of typhoid fever, and, in addition to infecting his son, also infected a fellow-worker.

### Typhus Fever.

No cases were brought under notice during the year.

### Cerebro-Spinal Fever or Meningitis.

During the year 4 cases were notified.

Tables B and E show the prevalence of cerebro-spinal fever in each parish, and Table D5 shows the annual prevalence of the disease since 1906.

TABLE D5.—CEREBRO-SPINAL FEVER.

YEAR.	NUMBERS.		RATES.		
	Cases Notified.	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1906	33	25	75·7	0·16	1·28
1907	175	135	77·1	0·88	6·85
1908	104	70	67·3	0·52	3·53
1909	12	5	41·6	0·06	0·25
1910	9	6	66·6	0·04	0·29
<i>Average,</i>	<i>66</i>	<i>48</i>	<i>72·3</i>	<i>0·33</i>	<i>2·42</i>
1911	8	3	37·5	0·03	0·14
1912	4	3	75·0	0·01	0·14

**Puerperal Fever.**

In all, 19 cases were brought under notice during the year, 2 of which were not notified.

*Deaths.*—10 deaths were registered from puerperal fever, 1 of which was not notified. The ages of the patients were:—

From 20-25 years,	...	...	...	...	3 cases.
25-30 "	...	...	..	...	6 "
30-35 "	...	...	...	...	0 "
35-40 "	...	...	...	...	1 case.

**Erysipelas.**

There were 137 cases brought under notice in the course of the year, and 5 of these were fatal. 11 cases were removed to hospital.

**Pulmonary Tuberculosis.****Compulsory Notification.—**

New cases notified,	-	-	-	-	-	308
New cases not notified,	-	-	-	-	-	57
Old cases renotified by the same practitioner,	-	-	-	-	-	110
Old cases renotified by a different practitioner,	-	-	-	-	-	17
					<b>Total,</b>	<b>492</b>

**These cases were dealt with as follows:—**

Admitted to hospital,	-	-	-	-	-	323
Waiting for admission at close of year,	-	-	-	-	-	13
Refused treatment,	-	-	-	-	-	73
Died before or soon after notification,	-	-	-	-	-	44
Inmates of poorhouses,	-	-	-	-	-	4
Visitors, or had left the district,	-	-	-	-	-	14
Unsuitable for treatment,	-	-	-	-	-	3
Notified "Do not visit,"	-	-	-	-	-	15
Notified "Hospital treatment not required,"	-	-	-	-	-	3
					<b>Total,</b>	<b>492</b>

The number of deaths during the year was 177.

**Age and Occupation.**—The cases brought to our notice for the first time during 1912 are classified in the following tables according to age and occupation:—

Ages,	-1	1-5	5-15	15-25	25-45	45-65	65+	Total.
Cases,	1	17	88	98	121	33	7	365

<i>Domestic Work.</i> —Housewives, 68 ;	Domestics, 8 ;	Servants, 15 ;	Total.
Children, 25,	...	...	116
Scholars, 82,	...	...	82

	Total.
<i>Miners, &amp;c.</i> —Miners, 56; Pitheadworkers, 2; Driver, 1; Engine-men, 3; Checkweigher, 1, ... ..	63
<i>Metalworkers.</i> —Steelworkers, 7; Ironworkers, 3; Plumber, 1; Blacksmith, 1; Engineer, 1, ... ..	13
<i>Factory and Workshop Employees.</i> —Millworkers, 8; Dress-makers, 4; Printer, 1; Bottlers, 2; Tailor, 1; Coachpainter, 1,	17
<i>Stoneworkers or Brickworkers.</i> —Masons, 2; Bricklayer, 1; Quarryman, 1, ... ..	4
<i>Shopkeepers.</i> —Grocers, 4; Drapers, 3; Shoemaker, 1; Barmen, 2,	10
<i>Miscellaneous.</i> —Clerks, 20; Farm servants, 7; Labourers, 4; Insurance Agents, 2; Carters, 2; Painter, 1; Stockbroker, 1; Medical Practitioner, 1; Draughtsman, 1; Hawker, 1; Roadman, 1; Stationer, 1; Window Cleaner, 1; Gardener, 1; None, 3; Unknown, 13, ... ..	60
	<hr/> 365

**Deaths in Relation to Notification.**—The following figures have been prepared of the time elapsing between the date of notification and death of all deaths from pulmonary tuberculosis during the year 1912:—

Deaths without notification, ... ..	22
„ within one month of notification, ... ..	30
„ between one and three months after notification,	20
„ „ three and six months „ ...	26
„ from six to twelve months „ ...	19
„ over twelve months „ ...	43

The following tabular statement shows the cases notified, and the notified and unnotified fatal cases, year by year, since 1906:—

YEAR.	Total Cases.	FATAL CASES.	
		Notified.	Unnotified.
1906, ... ..	252	54	101
1907, ... ..	189	77	92
1908, ... ..	301	141	43
1909, ... ..	338	155	52
1910, ... ..	370	131	30
1911, ... ..	336	161	24
1912, ... ..	365	138	39†
Total, ... ..	2,151	857	381

†17 of these were non-pulmonary forms, and did not require to be notified.

The average annual number of deaths from pulmonary tuberculosis for the quinquennial periods from 1891 onwards is shown in the under-noted table. There is a steady decline in the number of deaths. For the quinquennial period 1891 to 1895 the number of deaths was 13·57 per 10,000 of the population, while in the quinquennial period 1906 to 1910 the average was 8·83 per 10,000. This represents a saving of about 100 lives per annum.



PULMONARY TUBERCULOSIS IN EACH REGISTRATION DISTRICT OF THE  
MIDDLE WARD—AVERAGE ANNUAL NUMBER OF DEATHS FOR  
QUINQUENNIAL PERIODS 1891-1910 AND FOR THE YEARS 1910,  
1911, AND 1912.

Registration District.	Population, Census 1901.	1891-1895.	1896-1900.	1901-1905.	1906-1910.	1910.	1911.	1912.
Avondale, - -	5,773	10.2	7.4	5.0	7	4	1	2
East Kilbride, - -	3,948	4.6	6.2	5.8	5.8	4	3	3
Glasford, - - -	1,321	1.4	0.8	1.2	1.2	1	1	...
Stonehouse, - -	3,665	4.8	6.8	4.2	2	3	5	3
Blantyre, - - -	14,145	18.2	17.6	22.2	15.6	23	24	20
Bothwell, - - -	16,260	18.0	14.6	17.8	14	8	12	23
Bellshill, - - -	14,135	10.6	18.0	13.6	15.4	23	17	22
Holytown, - - -	15,510	13.4	11.4	13.4	16.8	16	16	15
Cambuslang, - -	20,211	28.4	25.4	27.0	19.4	19	30	18
Cambusnethan, - -	9,814	13.8	7.4	9.2	9.4	9	12	9
Calderhead, - -	2,515	2.2	2.8	2.8	2.6	1	1	...
Dalserf, - - -	4,088	3.8	1.8	4.2	2.6	1	1	5
Larkhall, - - -	12,034	12.0	14.2	12.6	7.4	6	8	9
Dalziel, - - -	2,030	1.8	1.2	2.4	2.4	1	2	3
Hamilton, - - -	7,597	11.0	6.8	6.0	6.8	8	10	3
New Monkland, -	14,498	14.6	18.2	11.6	14.2	8	5	12
Old Monkland— Eastern, - - }	2,665	2.2	1.2	1.8	2	...	3	2
Coatbridge, - -	2,939	2.8	2.6	1.8	2.6	2	3	4
Western, - - -	10,653	15.6	12.0	9.8	11.2	10	15	12
Shotts—East, - -	3,593	2.8	2.8	1.8	3	3	3	2
Middle, - - -	2,823	1.2	1.6	1.6	2.2	3	2	1
Calderhead, - -	4,126	3.0	4.2	5.2	5.4	4	3	1
Western, - - -	3,757	4.6	5.8	4.8	4.6	3	6	7
Northern, - - -	1,263	2.2	2.2	1.8	1.6	1	2	1
Middle Ward District,	179,363	203.2	193.0	187.6	175	161	185	177
Average Quinquennial Death- rate per 10,000 of Population, }		13.57	11.44	10.00	8.83	7.97	9.10	8.71

**Diarrhoeal Diseases.**

Average annual number of deaths and death-rates per 1,000 of the population for four quinquennial periods, and for each of the subsequent years :—

	1891-1895.	1896-1900.	1901-1905.	1906-1910.	1911.	1912.
Deaths,	151	226	250	212	240	94
Death-rate per 1,000,)	0.994	1.33	1.34	1.07	1.18	0.46

The mortality from this group of diseases, like measles and whooping-cough, varies enormously from year to year through circumstances and conditions over which Local Authorities exercise little control. Fatal forms of diarrhoeal diseases occur mostly in infants under one year of age, and the incidence was most marked in the autumn months. The yearly variation and autumnal incidence is illustrated by the records for the years 1911 and 1912, which were as follows :—

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1912,	5	3	4	5	7	5	10	17	13	11	8	6	94
1911,	4	14	13	13	9	12	17	63	70	16	4	5	240

**Measles.**

The importance of measles as a cause of death will be realised from Table D6, which shows that 170 children died from measles during 1912. This gave a death-rate of 0.83 per 10,000 of the population.

TABLE D6.—MEASLES.

YEAR.	NUMBERS.		RATES.		
	Cases Estimated.	Deaths Registered.	Deaths per 100 Cases	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1891	1,620	81	5.0	11.2	5.6
1892	3,240	162	"	22.0	11.0
1893	3,560	178	"	23.3	11.8
1894	1,660	83	"	10.7	5.3
1895	3,960	198	"	25.1	12.5
<i>Average,</i>	<i>2,808</i>	<i>140</i>	"	<i>18.6</i>	<i>9.3</i>
1896	800	40	"	4.9	2.4
1897	820	41	"	4.9	2.4
1898	5,100	255	"	30.2	15.1
1899	640	32	"	3.7	1.8
1900	3,740	187	"	21.2	10.6
<i>Average,</i>	<i>2,220</i>	<i>111</i>	"	<i>13.0</i>	<i>6.5</i>
1901	980	49	"	5.4	2.7
1902	2,120	106	"	11.4	5.7
1903	1,420	71	"	7.5	3.7
1904	1,700	85	"	8.8	4.4
1905	1,660	83	"	8.6	4.3
<i>Average,</i>	<i>1,576</i>	<i>78</i>	"	<i>8.4</i>	<i>4.2</i>
1906	1,940	97	"	9.9	4.9
1907	480	24	"	2.4	1.2
1908	5,300	265	"	26.7	13.3
1909	240	12	"	1.2	0.6
1910	3,460	173	"	17.1	8.5
<i>Average,</i>	<i>2,284</i>	<i>114</i>	"	<i>11.5</i>	<i>5.7</i>
1911	920	46	"	4.5	2.2
1912	3,400	170	"	16.7	8.3

**Whooping-cough.**

The remarks with regard to measles apply with equal force with regard to whooping-cough. This is the most fatal form of infectious disease which affects children under five years of age. The disease was more or less prevalent throughout the whole year, as shown by the

following monthly statistics. Table B shows the incidence according to parish, while Table D7 shows the prevalence in past years:—

Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Tl.
8	11	13	10	5	5	8	6	3	2	13	12	96

The following Table D7 shows the prevalence of the disease in previous years:—

TABLE D7.—WHOOPIING COUGH.

YEAR.	NUMBERS.		RATES.		
	Cases Estimated.	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1891	960	48	5.0	6.6	3.3
1892	1,700	85	"	11.5	5.7
1893	1,820	91	"	12.1	6.0
1894	2,760	138	"	17.9	8.9
1895	2,120	106	"	13.4	6.7
<i>Average.</i>	<i>1,872</i>	<i>93</i>	"	<i>12.4</i>	<i>6.2</i>
1896	1,280	64	"	7.9	3.9
1897	2,240	112	"	13.6	6.7
1898	1,980	99	"	11.7	5.8
1899	2,580	129	"	14.9	7.4
1900	960	48	"	5.4	2.7
<i>Average,</i>	<i>1,808</i>	<i>90</i>	"	<i>10.5</i>	<i>5.2</i>
1901	3,000	150	"	16.6	8.3
1902	2,100	105	"	11.3	5.6
1903	2,220	111	"	11.7	5.8
1904	1,920	96	"	10.0	5.0
1905	1,560	78	"	8.15	4.7
<i>Average,</i>	<i>2,160</i>	<i>108</i>	"	<i>11.5</i>	<i>5.7</i>
1906	1,920	96	"	9.8	4.9
1907	1,740	87	"	8.8	4.4
1908	2,700	135	"	13.6	6.8
1909	1,960	98	"	9.8	4.9
1910	1,400	70	"	6.9	3.4
<i>Average,</i>	<i>1,944</i>	<i>97</i>	"	<i>9.7</i>	<i>4.8</i>
1911	2,840	142	"	13.9	6.9
1912	1,920	96	"	9.4	4.7

### Ringworm.

175 cases of ringworm were brought under the notice of the Department, and 24 successfully treated with X-rays at the Middle Ward Hospital, Motherwell.

### Scabies.

During the year 165 cases were reported. As it is often difficult to prevent the spread of this disease and to get the treatment satisfactorily carried out at home, hospital treatment was offered where this was considered necessary.

### School Closure.

**School Closure.**—The following applications were made during the year for certificates of closure to satisfy the requirements of Article 30 of the Scotch Education Code:—

School.	Parish.	Disease Prevalent.
Mossend Public, ... ..	Bothwell,	Measles.
Bothwellpark Infant (Class IV.), ... ..	"	"
Newmains Public (Infant Dept.), ... ..	Cambusnethan,	"
Bothwell R.C. (Infant Dept.), ... ..	Bothwell,	"
Glenboig Public (Infant Dept.), ... ..	New Monkland,	"
Moffat Mills Public (Infant Dept.), ... ..	"	"
Moffat Mills Public, ... ..	"	"
Glenboig R.C. (Infant Dept.), ... ..	"	"
Waterloo Infant, ... ..	Cambusnethan,	Mumps, Chickenpox and Whooping-cough.
Bothwell Convent, ... ..	Bothwell,	Diphtheria.

**Exclusion of Scholars.**—A special certificate giving the names of scholars excluded from school under the Public Health Act is forwarded weekly to the Headmaster for the purposes of the Scotch Education Code, Article 19F.

### Anthrax.

Under the Diseases of Animals Act, 1894, 6 outbreaks of this disease affecting 6 cattle, were reported by the Inspector under the Anthrax Order. The outbreaks were distributed as follows:—East Kilbride, 2; Glasford, 2; Stonehouse, 1; and New Monkland, 1.

### Hospitals.

All the hospitals were occupied during the year. Table F summarises the work done, and shows that the number of patients admitted from the Middle Ward District to the various hospitals owned by the District Committee was 1,990, which includes 323 cases of

pulmonary tuberculosis and 106 cases of skin disease. Under the heading "Quarantine" 78 persons were admitted. These were mostly babies or nursing mothers; but there were a few positive diphtheria and typhoid fever contacts. A number of patients were admitted to the District Hospital near Motherwell from the areas of other Local Authorities, as shown in the footnote to Table F.

Table F.—Hospitals and Sanatoria.

HOSPITAL.	Cases in Hospital at the beginning of year.	Admitted during year from the Middle Ward*	Discharged.	Died.	Cases remaining in Hospital at the close of year.	NATURE OF CASES ADMITTED DURING YEAR.										TOTAL.	
						Diphtheria.	Scarlet Fever.	Typhoid Fever.	Cerebro-spinal Fever.	Puerperal Fever.	Erysipelas.	Measles.	Quarantine.	Pulmonary Tuberculosis.	Tuberculosis other than Phthisis.		Skin Diseases.
Motherwell, ...	128	1,266	1,186	56	152	155	881	87	1	9	9	5	41	5	12	61	1,266
Lightburn (Joint), ...	34	248	233	8	41	68	164	10	1	3	1	...	1	...	...	...	248
Shotts, ...	10	87	74	8	15	22	14	6	1	...	1	...	5	37	1	...	87
Stonehouse, ...	13	114	110	1	16	...	...	...	...	...	...	...	1	112	1	...	114
Longriggend, ...	25	51	58	5	13	...	...	2	...	...	...	...	1	46	2	...	51
Bellshill, ...	15	189	160	15	29	...	...	2	...	...	...	...	17	123	2	45	189
Dalsersf, ...	...	12	7	...	5	...	...	...	...	...	...	...	12	...	...	...	12
Blantyre, ...	...	23	17	1	5	...	23	...	...	...	...	...	...	...	...	...	23
	225	1,990	1,845	94	276	245	1,082	107	3	12	11	5	78	323	18	106	1,990

\*The cases admitted from outside local authorities to hospitals owned by the Middle Ward District Committee were as follows:—

*Motherwell* admitted 14 cases of diphtheria, 1 case of scarlet fever, and 6 cases of enteric fever from the Burgh of Wishaw; 2 cases of erysipelas, 3 cases for X-ray treatment from the Burgh of Airdrie; 15 cases for X-ray treatment from the Burgh of Motherwell; 1 case of scarlet fever, and 11 cases for X-ray treatment from the Burgh of Hamilton; 4 cases of enteric fever, and 4 cases for X-ray treatment from the Upper Ward; 9 cases for X-ray treatment from the Lower Ward; 1 case for X-ray treatment from the Burgh of Coatbridge; 4 cases for X-ray treatment from the Burgh of Biggar, and a private case of pulmonary tuberculosis. *Shotts* admitted 1 case of pulmonary tuberculosis from Wishaw, 2 cases from Hamilton, and 1 case from Berwickshire. *Stonehouse* admitted 4 cases of pulmonary tuberculosis from Hamilton. *Longriggend* admitted 1 case of pulmonary tuberculosis from Airdrie, 3 cases from Coatbridge, and 1 case from the Lower Ward. *Bellshill* admitted 6 cases of pulmonary tuberculosis from Hamilton. The total number of cases admitted to the Middle Ward Committee's hospitals was, therefore, 2,085.

*County Hospital, Motherwell.*—The work done at this hospital is fully reported upon by the Physician, at page 250, and need therefore be only briefly referred to here. The number of patients admitted during the year was 1,266. The X-ray apparatus was again largely taken advantage of for treatment of ringworm of the scalp. The number of patients treated from the Middle Ward area was 24; Airdrie Burgh, 3; Motherwell Burgh, 15; Hamilton Burgh, 11; Coatbridge Burgh, 1; Biggar Burgh, 4; Upper Ward, 4; and Lower Ward, 9.

As mentioned in last year's report, the land occupied by the hospital has been increased by 11 acres. In this way sufficient space has been secured to double the size of the institution if that should ever become necessary. The additional ground has been surrounded by a wrought-iron palisade. During the year the Airbles Highway in front of the hospital was diverted, in order to improve the frontage.

It has been arranged that the following buildings, &c., should be erected at once:—

- (1) A new entrance gate on the south side will take the place of the two existing ones. A gate lodge, waiting-room, and dispensary will be placed near this new gate.
- (2) A large pavilion for diphtheria, with operating room, and all modern conveniences and appliances for the treatment of diphtheria. The bed accommodation provides 2 ten-bed wards, 2 four-bed wards, and 3 single-bed wards—total, 31.
- (3) A special isolation block, with cubicles, whereby each patient can be completely separated, and thus patients suffering from two different infections will be specially provided for. 20 single beds.
- (4) A tuberculosis pavilion, convenient to the dispensary, of the most approved design. This comprises 8 two-bed wards, 2 eight-bed wards—total, 32. (As this pavilion may be used for non-pulmonary forms of the disease, the design may have to be altered, when it will resemble the large pavilion for diphtheria, with operating-room. *See* Clause 2).
- (5) On the north boundary two double cottages for the outdoor staff (mechanics and assistant gardener). Each dwelling has four apartments and modern conveniences, including bath and water-closet.
- (6) A gate lodge is attached to one of these double cottages, and has similar accommodation. This house may be occupied by a chauffeur.
- (7) A garage for three motor ambulances adjacent to the lodge.
- (8) A mortuary, with a room for funeral service.

The additional bed accommodation thus provided is 83 beds, and it is not proposed to provide any extra accommodation for nurses or maids meantime, but the plans show a site for another nurses' home. The house presently occupied by the chief gardener attendant will be vacated so soon as the new entrance lodge can be occupied. The older accommodation, which consists of seven apartments, will be utilised for staff purposes.

In view of the extension of this institution, the acquisition of an additional motor ambulance was considered. Various types of ambulances were inspected and reported upon, and the committee ultimately agreed to purchase a 15·9 h.p. Arrol-Johnston car. When this new car was acquired it became necessary to secure the services of an additional chauffeur, and the Medical Officer of Health was authorised to make the appointment.

Several repairs and improvements were carried out in connection with the laundry plant, including the provision of a fan in the drying chamber to secure efficient ventilation. The electric lighting and heating arrangements at the hospital were also subjects of consideration. The Engineers were of opinion that it would be possible to heat and light the existing buildings, and the additional buildings which would be required in the immediate future, from the existing plant; and that any extra current which might be required could probably be obtained from the Clyde Valley Electric Power Company or the Burgh of Motherwell supply. It was accordingly decided that, in the meantime, no alterations or additions should be contemplated on the present plant.

*Lightburn Joint-Hospital.*—The work done at this hospital is also fully reported upon by the Physician-Superintendent at page 292. The number of patients admitted from the Middle Ward District during the year was 248.

*County Sanatorium, Shotts.*—During the year it was considered advisable to reserve this institution solely for the treatment of tuberculosis. In order to carry this scheme into effect it was necessary that any patients living in the Shotts district, notified as suffering from any acute infectious disease, should be removed to the central hospital at Motherwell. Some of the patients' relatives demurred to this arrangement at first, but after the Medical Officer of Health had pointed out that the patients would benefit by being taken to Motherwell Hospital, where there was a Resident Physician, the complaints ceased. 87 cases were admitted during the year, 37 of whom were suffering from pulmonary tuberculosis.



Some minor repairs were carried out in the laundry, which has also been equipped with steam-driven machinery, and the heating system has been renewed.

*Stonehouse Sanatorium.*—This institution has been set aside for the treatment of tuberculosis since the latter part of the year 1905. It has two ward pavilions. The larger pavilion has two wards of equal size, with a nominal capacity of 10 beds. With open windows, however, it has been able to accommodate as many as 20 consumptive patients, but many of these were children under 16 years of age. The smaller pavilion has four wards, with a nominal capacity as follows:— at either end two wards with two beds each, and in the centre two single-bed wards. One of these end wards has been utilised as a patients' dining hall. With consumptive patients the bed accommodation has been practically doubled, so that 8 patients have been accommodated in this smaller pavilion. In the front part of the grounds there are 1 chalet and 2 shelters. The chalet contains 4 beds, and each shelter 2 beds. These are all in use. The number of cases admitted since 1905 amounts to 586.

Early in the current year the Committee agreed to the provision of a dining hall for patients, provision of steam laundry, and the renewal of the heating apparatus. They also had under consideration a plan for the provision of additional accommodation for patients, but this was delayed. The Committee have now agreed to the erection of a 20-bed pavilion, and also an open shelter for 20 beds on the Aberdeen plan. There will thus be provided 50 beds for patients in the ward pavilions and 28 beds in open shelters. An additional area of ground extending to  $1\frac{1}{2}$  acres is about to be acquired.

With this additional accommodation it may be desirable to arrange for a Resident Physician.

The number of patients in residence, as ascertained from the weekly reports, was on one occasion as low as 19, and on another as high as 33. Taking four-weekly periods, and omitting two weeks in July during the Fair Holidays, the figures were as follows:—30 and over on three occasions, 25 and over on four occasions, and 20 and over on six occasions. The average number of patients in residence throughout the year was 26. The total expenditure, exclusive of repayment of capital, amounted to £1,847. This, calculated from the average number of patients in residence, gives a cost of £71 per occupied bed per annum. The number of admissions was 101, and discharges 104. The mean of these is 102·5. This figure, calculated into the expenditure, shows the average cost of each patient to be about £18.

Certain telephone facilities have been granted for this institution, but up to the present they have not proved very satisfactory, and the matter has been taken up with the Postal Authorities.

*County Sanatorium, Uppertown, Longriggend.*—The total admissions were as follows:—Pulmonary tuberculosis, 46; other tuberculous diseases, 2; typhoid fever, 2; and 1 baby—total, 51.

The additions here include a tuberculosis shelter or shack, which has accommodation for four patients.

Telephone facilities have not yet been granted for this sanatorium, but the necessary arrangements have been made, and there is reason to believe that a telephone will be introduced shortly.

The contractors for the petrol supply having intimated that they could not enter into a further year's contract to supply petrol unless at an increased rate, the matter was brought before the Committee, and, after consideration, it was agreed that no contract should be entered into meantime, the Medical Officer of Health being authorised to arrange for purchasing the petrol from time to time where most suitable and economical.

*County Hospital, Bellshill.*—The total admissions were as follows:—Pulmonary tuberculosis, 123; other tuberculous diseases, 2; typhoid fever, 2; typhoid fever contacts, 12 (1 with positive Widal); skin diseases, 45; babies, 5—total, 189.

The repairs and improvements here included the conversion of the Matron's bedroom into a sitting or public room, the renewal of some of the furnishings, and the renewal of the internal painter and paper work.

Considerable trouble was experienced with the lighting at the hospital about the end of the year. Owing to underground workings the joints of some of the gas-pipes were drawn, and flooding took place through subsoil water, so that on several occasions no light could be got. After consulting the Gas Manager, the Medical Officer of Health arranged to have new piping laid at one point where considerable subsidence had taken place. These measures proved effective, and the lighting has given no trouble since.

*County Hospital, Dalserf.*—The Medical Officer of Health found it necessary to open this institution as a home for children who were either themselves showing some slight evidence of tuberculosis, or who were living in a home where the mother was suffering from tuberculosis, and required institutional treatment. 12 children were thus admitted. The reopening of the hospital necessitated the renewal of some of the furnishings, including cot bedsteads for the children.

*County Hospital, Blantyre.*—In consequence of an outbreak of scarlet fever, it was found necessary to admit patients suffering from this disease to Blantyre Hospital, instead of reserving the entire accommodation for tuberculosis, as was originally intended. 23 scarlet fever patients were thus admitted.

To make this institution fit for occupation several extensive repairs and improvements were necessary, including the thorough renovation of all the plaster and painter work, the introduction of water-closets to take the place of the old earth closets, the remodelling of the drainage system, &c. Some of the furnishings also required renewal, including a number of bedsteads and bedding.

### HEALTH VISITORS.

The work of health visiting was carried out during the year by a staff of three Queen's Nurses, employed directly by the District Committee, and one District Association, viz., Motherwell. About the middle of the year arrangements similar to those with the Motherwell, &c., Nursing Association were entered into with the Strathaven and Tollcross Nursing Associations, whereby their nurses attended to Health Visitors' work in their respective areas. It was agreed that these nursing associations should each receive £12 and £15 respectively for their services.

The areas which were assigned to each Health Visitor (see 1911 Report) were the same as in the previous year, the work in Avondale Parish and part of the western portion of Old Monkland Parish for the latter half of the year being carried out by the Queen's Nurses employed by the local nursing associations.

**Notification of Births Act, 1907.**—This Act came into operation on 15th May, 1910, and the notifications received each month during the year 1912 were as follows:—

January, - - -	512	July, - - -	462
February, - - -	453	August, - - -	458
March, - - -	461	September, - - -	446
April, - - -	555	October, - - -	468
May, - - -	519	November, - - -	449
June, - - -	492	December, - - -	440

TABLE G.—BIRTHS NOTIFIED DURING 1912 UNDER THE NOTIFICATION, &c., OF BIRTHS ACT, 1907.—VISITS MADE BY HEALTH VISITORS, &c.

REGISTRATION DISTRICT.	BIRTHS NOTIFIED.	FIRST VISITS.	RE-VISITS FOR			METHOD OF FEEDING INFANT.					IN ATTENDANCE.		
			Infant.	Mother.	Other Reasons.	Breast only.	Breast and Bottle.	Breast and Food.	Cow's Milk.	Patent Food.	Doctors.	Midwives.	Handywomen.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Avondale, - -	94	56	8	1	15	45	4	1	5	...	44	...	12
East Kilbride, -	61	12	...	...	...	11	...	...	..	...	12	...	...
Glasford, - -	33	14	1	...	...	12	...	...	2	...	12	...	2
Stonehouse, - -	91	...	...	...	...	...	...	...	...	...	...	...	...
Blantyre, - -	528	574	232	61	21	511	10	3	20	2	119	400	55
Bothwell, - -	510	442	255	92	10	401	16	5	13	...	144	70	228
Bellshill, - -	544	528	213	95	13	485	15	4	9	...	136	197	195
Holytown, - -	467	456	162	28	12	410	7	4	24	...	218	18	220
Cambuslang, - -	763	712	190	31	4	611	25	12	27	2	478	129	105
Cambusnethan, -	371	299	43	7	9	256	11	5	20	1	211	5	83
Calderhead, - -	15	22	3	...	...	21	1	...	...	...	22	...	...
Dalserf, - -	87	...	...	...	...	...	...	...	...	...	...	...	...
Larikhall, - -	323	171	52	32	...	149	6	1	9	...	47	78	46
Dalziel, - -	99	69	12	...	...	65	...	...	2	...	48	5	16
Hamilton, - -	274	246	94	19	2	215	7	3	13	...	74	99	73
New Monkland, -	287	206	54	11	3	172	7	5	11	1	114	35	57
Old Monkland— Eastern, - -	77	64	6	...	1	55	4	...	...	1	59	...	5
Coatbridge, - -	9	...	...	...	...	...	...	...	..	...	...	...	...
Western, - -	427	348	266	99	15	308	10	3	13	1	107	12	229
Shotts—Eastern, -	149	105	24	2	1	85	6	2	7	1	77	...	28
Middle, - -	42	37	8	22	2	35	...	...	2	...	35	...	2
Calderhead, - -	321	265	40	9	...	234	7	5	14	1	246	1	18
Western, - -	142	117	48	...	...	105	5	2	3	1	95	1	21
Northern, - -	1	...	...	...	...	...	...	...	...	...	...	...	...
	5,715	4,743	1,711	509	108	4,186	141	55	194	11	2,298	1,050	1,395

Comparing the notifications received with the births registered, we find that about 80 per cent. of the total births have been notified, either by the medical attendant, midwife, or by one of the parents.

**Work of Health Visitors.** — The notifications as received were classified according to area, and handed to the Visitors, who made a selection of what seemed the more important cases. The work has been classified in Table G, according to Registration District. Column 3 shows that the first visits numbered 4,743; column 2 shows that the number notified was 5,715; so that the proportion of babies visited at their homes amounted to about 83 per cent. of the total notified.

With regard to professional attendance, of the 4,743 visited 2,298 had been attended by medical practitioners, 1,050 by midwives, and 1,395 by handywomen. The proportion receiving medical attendance varies considerably in different districts. It will be noticed that in rural districts the proportion of cases attended by medical practitioners is very much higher than in populous areas, *e.g.*, in the parishes comprising the First Division, out of 82 babies visited, 68 were attended by doctors; whereas in Blantyre, out of 574 babies visited, only 119 were attended by medical practitioners. It is expected, however, that the proportion of births medically attended will in future years be much increased as the result of the provision of maternity benefit under the National Insurance Act.

156 of the cases notified were either still-born or had died before the visits were made.

The information in columns 7 to 11 of Table G relates to inquiries made at the first visit. The statistics show that by far the largest number of infants were breast-fed. Of the 4,743 infants visited, 4,186 were wholly fed on the breast, 141 breast and bottle, 55 breast and food, 194 cows' milk, and 11 on patent foods alone. It is gratifying to note that such a large proportion of the babies visited were fed on the breast alone. In cases where the Health Visitors found the infants being fed on the breast and solids, they instructed the mothers regarding the proper feeding of their infants, with the result that in nearly every instance the mothers followed the instructions given, and afterwards testified to the vast improvement on the condition of their infants. There is still great need for young mothers to be specially instructed regarding the importance of feeding the infant on the breast alone in the early months of its life, the tendency being for the elderly relations to advise as follows:—"That the infant is not half satisfied unless it is getting something from a spoon, such as tea biscuits or bread and milk." In cases where the infants were wholly fed on cows' milk it was difficult to get mothers to realise the importance of protecting the vessels in which the milk

was kept from flies and other contamination. In some instances the mothers adopted the nurse's method of sterilising, and covering the jug with butter-cloth gauze or a piece of muslin.

Among the ailments discovered during the visitation, inflammation of the eyes was one of the commonest. In every instance where the eyes were found to be discharging a swab was sent to the bacteriologist for examination, and the nurse was notified of the result as early as possible. In all cases, where no doctor was in attendance, the nurse impressed upon the parents the necessity for having medical advice at once. In the interval treatment was carried out by the nurse, and the mother or attendant was shown how to carry out the treatment at specified times. In cases where a doctor was in attendance, the nurse gave valuable aid as to how the doctor's orders should be carried out. It is worthy of note that many of those cases were brought to the notice of the nurse by handywomen who were in attendance at birth. These women in the past were very averse to the nurses visiting their cases, and usually advised the people to tell the nurse as little as possible, but now they are only too pleased to get the nurse's advice and assistance.

A number of visits were also made in connection with infectious or contagious diseases, which might be classified as follows:—

Pulmonary Tuberculosis,	.	-	-	90
Conjunctivitis,	-	-	-	177
Ophthalmia Neonatorum,	-	-	-	157
Ringworm,	-	-	-	7
Itch,	.	-	-	4
Whooping Cough,	-	-	-	14
Broncho-pneumonia,	-	-	-	8
				<hr/>
				457
				<hr/>

### III.—GENERAL SANITATION.

#### Housing.

The administrative action relating to housing might be discussed from different points of view, either with regard to existing buildings found to be in an insanitary state or with regard to the plans of new houses to be erected. The chief legislative enactments controlling action are the Public Health Act and the Housing Acts.

**Public Health Act and Building Bye-laws.**—In the bye-laws regulating the building or re-building of houses or buildings made under Section 181 of the Public Health Act the word "house" means a dwelling-house, and includes schools, also factories, and other buildings in which persons are employed.

Under the bye-laws 168 sets of plans were lodged, but as 10 of these were afterwards withdrawn only 158 sets were reported upon. The usual Statistical Tables I., II., and III. are given in the annual report of the District Sanitary Inspector, so will not be reproduced here. Table I. shows the number of plans lodged month by month, classified according to parish. Table II. shows the nature of the buildings to be erected; and may be summarised thus:—The erection of new buildings under Bye-law No. 41—houses and shops, 64; workshops, 0; schools, 4; public buildings, 5; and other buildings, 14; total plans, 87. Alterations on mode of occupancy of existing buildings under Bye-law No. 51—houses and shops, 63; workshops, 1; public buildings, 5; and other buildings, 2; total plans, 71. Table III. shows the number of houses, classified according to size, and the parish in which they were to be erected.

The number of houses to be erected, as shown on the plans lodged during 1912, is the lowest on record. During the five years, 1899-1903, the average annual number of houses to be erected under the plans submitted was 1,270; during the next five years, 1904-8, the average number was 831; during the four years, 1909-12, the average number was 446; during the year 1912 the actual number was 190.

*Prosecution.*—A contravention of the Building Bye-laws was committed by the owners of a two-storey tenement property situated in Chapel Street, Bellshill, in respect that they had converted three two-apartment houses into six single-apartment houses, and a three-apartment house into one single-apartment and one two-apartment house, without giving notice of their intention to do so, or submitting such plans and description as might be necessary to show how far the buildings conformed to the bye-laws, and also that the houses had been used for human habitation without the sanction and approval of the Local Authority. The alterations were also objectionable, in respect that there were no means of through ventilation, the houses now being back-to-back houses, and such as could be dealt with under Section 43 of the Housing and Town Planning, &c., Act, 1909. No satisfactory undertaking could be got that the premises would be restored to their former condition, and legal proceedings were accordingly taken, when the Sheriff imposed a penalty of £1 9s., with the alternative of six days' imprisonment. The agent for the owners undertook that the restoration of the premises would be completed without delay.

**One-Apartment Dwellings.**—In Table J. the houses erected year by year are classified according to size, and in the last column the percentage proportion of one-apartment houses is given. This is shown to be 3·6. These were to be erected as follows:—Bothwell Parish, 2; Cambuslang, 1; Cambusnethan, 1; New Monkland, 1; and Shotts, 2.

TABLE J.—SHOWING NUMBER AND SIZE OF HOUSES SET FORTH IN PLANS SUBMITTED UNDER BYE-LAWS REGULATING THE BUILDING OR RE-BUILDING OF HOUSES OR BUILDINGS DURING EACH OF THE FOURTEEN YEARS, 1899-1912.

YEAR.	One Apartment.	Two Apartments.	Three Apartments.	Four Apartments.	Five Apartments and Upwards.	Total Houses.	Percentage proportion of One-Apartment Houses.
1899,	147	608	110	78	78	1,021	14·4
1900,	98	871	127	40	84	1,220	8·0
1901,	83	714	238	125	71	1,231	6·7
1902,	230	927	229	85	137	1,608	14·3
1903,	175	754	157	27	155	1,268	13·8
1904,	149	395	144	46	159	893	16·7
1905,	107	337	84	59	143	730	14·6
1906,	111	548	99	76	142	976	11·3
1907,	101	397	126	27	101	752	13·4
1908,	114	410	164	52	68	808	14·1
1909,	82	394	89	47	52	664	12·3
1910,	130	205	57	24	73	489	26·5
1911,	72	270*	34	28	40	444	16·2
1912,	7	117	23	11	32	190	3·6

**Domestic and Sanitary Conveniences.**—Wherever an efficient system of sewerage and sewage disposal has been provided, the introduction of water-closets has always been suggested, but when the number and arrangement were such as to allow only one closet for every four families, and these closets were placed at a distance from the dwellings, the result has usually been very unsatisfactory. After long experience, it has been found that the only satisfactory way of providing suitable domestic and sanitary conveniences for workmen's dwellings is to have separate sanitary conveniences for each house. This is of far more importance than the particular type of closet provided.

The following Table L shows the nature of the sanitary conveniences provided for dwelling-houses of one, two, and three apartments, according to the plans passed during the year. It will be seen that all the water-closets provided were either inside or directly attached to the dwelling.



TABLE L.—SHOWING THE NATURE OF THE SANITARY CONVENIENCES PROVIDED FOR DWELLING-HOUSES OF ONE, TWO, AND THREE APARTMENTS DURING 1912.

PARISH.	Houses of 1, 2, and 3 Apartments.	SANITARY CONVENIENCES.			
		Water Closets.			Privies.
		Inside.	Attached.	Detached.	
Avondale, - -	7	3	1	...	1
East Kilbride, -	7	2	3	...	...
Glasford, - -	4	1	...	...	2
Stonehouse, - -	...	...	...	...	...
Blantyre, - -	33	29	2	...	...
Bothwell, - -	27	16	7	...	...
Cambuslang, -	6	5	...	...	...
Cambusnethan, -	4	2	1	...	...
Dalserf, - -	7	4	...	...	...
Dalziel, - -	16	16	...	...	...
Hamilton, - -	1	1	...	...	...
New Monkland, -	11	5	2	...	1
Old Monkland, -	6	3	2	...	...
Shotts, - -	18	11	3	...	1
<b>Total, -</b>	<b>147</b>	<b>98</b>	<b>21</b>	<b>...</b>	<b>5</b>

**School Buildings.**—The plans relating to schools are here tabulated with a description of the buildings—

School Board.	School.	Description.
New Monkland, -	Greengairs, -	New cookery and laundry rooms.
Dalserf, - -	Shawsburn, -	Temporary iron and wood building to be used as cookery, laundry and manual instruction room.
Bothwell, - -	Bothwell Public, -	Detached building having class room accommodation for 100 pupils.
Clarkston, - -	Dumbreck, Caldercruix,	New cookery and laundry rooms.

**Housing Acts.**—A large number of inspections were made with a view to improvements being carried out on workmen's dwellings, and the following tabular statement shows the number of houses inspected during the year 1912, in terms of Article V. of the Local Government Board Regulations, under and for the purposes of Section 17 (1) of the Housing, Town Planning, &c., Act, 1909 :—

	Houses of				Total Houses.
	1 Apt.	2 Apts.	3 Apts.	4 Apts.	
Number of dwelling-houses inspected, . . . . .	292	179	9	1	481
*Houses found unfit for human habitation, . . . . .	21	7	1	1	30
Representations to Local Authority, . . . . .	21	7	1	1	30
Closing Orders made, . . . . .	21	7	1	1	30
Defects remedied after making Closing Orders, . . . . .	—	—	—	—	—
Defects remedied without making Closing Orders, . . . . .	15	29	—	—	44
Houses closed voluntarily without making Closing Orders, . . . . .	44	18	1	—	63
Remedies in progress, . . . . .	132	87	6	—	225
Remedies agreed to, . . . . .	22	6	—	—	28
Remedies being arranged for, . . . . .	58	32	1	—	91

\* The figures under this heading only include houses with regard to which representations were made under the Housing Acts.

*Hairstocks.*—The dwelling-house at the old farm-steading known as Hairstocks, in the Parish of East Kilbride, was found to be quite unfit for habitation. The matter was taken up with the owners, and arrangements made to have the premises thoroughly overhauled, and the work is now proceeding.

*Old Rows, Nackerty.*—These dwellings are referred to on page 126 of the special report on Housing, and the question of domestic and sanitary conveniences was taken up with the Colliery Company, with the result that the single-apartment houses have been provided with scullery, fitted with a boiler, sink, and water supply, and a coal cellar for each dwelling, also a water-closet for every two dwellings, while the two-apartment houses have a scullery, with boiler, sink, and water supply, water-closet, and coal cellar for each dwelling.

*Cuthbert Street and Donaldson Place, Tannochside.*—These dwellings are referred to on page 127 of the special report on Housing, and have now been provided with a scullery, fitted with sink and water supply, water-closet and coal cellar, and a complete new drainage system has been introduced.

*Thorniewood Rows.*—The negotiations for the provision of proper domestic and sanitary conveniences, as mentioned on page 217 of last annual report, were continued with the owners, who ultimately agreed to proceed with the erection of water-closets, in the proportion of one for every four dwellings, a new system of underground drainage, and

an increased water supply. These proposals were afterwards modified by the Company, on the ground that there was considerable risk of mineral subsidence, and accordingly no assurance was given that the improvements which the Company were in course of carrying out would meet the requirements of the Local Authority.

*New Rows, Nackerty.*—As mentioned in last annual report, page 218, the matter of insanitary conditions and the want of proper domestic and sanitary conveniences at New Rows, Nackerty, in the Parish of Bothwell, was taken up with the proprietors, who have now submitted plans showing the provision for each house of a scullery annexe, containing a washing-boiler and a coal cellar, with a water-closet for every two houses.

*Mossend.*—The negotiations with the owners of Wee Stone Buildings, Brick Buildings, and 18-22 New Square, Mossend, referred to on page 216 of last annual report, were continued. The representatives of the Company inspected the dwellings with the Medical Officer of Health, and, having fully considered the question, the Company afterwards decided to demolish the houses, which has since been carried out.

*Jerviston Square.*—With reference to the insanitary condition of the 56 dwellings situated at Jerviston Square, New Stevenston, referred to on page 217 of last annual report, considerable correspondence took place with the agent for the owner, whose estates had been sequestrated, and the agent ultimately referred the Medical Officer of Health to the Scottish Temperance Life Assurance Company, the first bondholders on the property, who, he stated, were about to enter into possession of the property. On being communicated with, the Assurance Company asked for delay until they were in a position to deal with the property, stating that they were likely to get a purchaser, and that if action were taken by the Local Authority this chance would be prejudiced. The whole matter was reported to the Committee, and, after consideration, it was agreed that the Medical Officer of Health should prepare a representation under Section 17 of the Housing, Town Planning, &c., Act, 1909. The representation was accordingly prepared and submitted to the Committee, along with further correspondence with the agents of the Assurance Company, asking that the Committee might delay making any Closing Order for two or three months, to see whether a purchaser might be found who would undertake to carry out the necessary repairs. The Committee, having fully considered the case, were of opinion that the houses in question were in a state so dangerous or injurious to health as to be unfit for

human habitation, and that it was expedient that steps should be taken now with respect to them under the Housing Acts. The Local Authority afterwards made a Closing Order, under and in terms of Section 17 (2) of the Housing, Town Planning, &c., Act, 1909, prohibiting the use of said dwelling-houses for human habitation until, in the judgment of the Local Authority, they were rendered fit for that purpose. Notices of the Order were duly served on the owners, and an appeal was intimated by the Assurance Company in respect, *inter alia*, (1) that the houses were not unfit for human habitation, and (2) that the Order be recalled or its operation suspended to ascertain whether the subjects would find a purchaser. The property was subsequently sold, and the appellants' agents intimated that they did not intend to proceed further in the matter. The appeal was accordingly dismissed, and the Closing Order became operative. The new owner at once commenced repairing the property, and has put forward certain proposals for improvements, but the Local Authority informed him that these could not be considered sufficient to make the houses in all respects reasonably fit for human habitation. Several meetings have since taken place between parties.

*High Biggins.*—Proposals were received from the owners of the eight two-apartment and sixteen single-apartment back-to-back houses, situated at High Biggins, near Clydesdale, in the Parish of Bothwell, for the conversion of these into sixteen two-apartment houses, with a sink, gravitation water supply, and a water-closet for each house. These proposals were approved, and the work is now being carried out.

*Burnside Row.*—The question of repairs and sanitary improvements necessary to render the fifteen one-apartment and eighteen two-apartment houses known as Burnside Row, Newmains, in the Parish of Cambusnethan, reasonably fit for habitation, was taken up with the owners, with the result that certain repairs have been carried out, water-closets introduced in the proportion of one for every two houses, and improved water supply and sink accommodation provided.

*Howlethole.*—The insanitary conditions existing at the five one-apartment and three two-apartment houses, situated at Howlethole, in the Parish of Dalserf, were dealt with, resulting in most of the houses being closed voluntarily. Negotiations have since taken place with the owner, who now wishes to have the property repaired, and proper domestic and sanitary conveniences provided.

*Raploch, Larkhall.*—A group of five one-apartment and two two-apartment dwellings, which had come into the possession of the Local

Authority when acquiring the necessary land for an access to Lark-hall Public Slaughter-house, about five years ago, were found to be in a most insanitary condition, and requiring the expenditure of a considerable sum to make them reasonably fit for human habitation. The matter was brought before the Local Authority, who gave instructions that the houses should be shut up. As the feu charter, however, provides that dwelling-houses of a certain value must be maintained on the feu, the Committee have since had under consideration plans for the erection of model workmen's dwellings.

*Overjohnstone.*—Attention was directed to two dwelling-houses situated at Overjohnstone Pit, in the Parish of Dalziel, the roofs, walls, and floors of which were dilapidated. The matter was taken up with the Colliery Company, who afterwards removed the tenants and shut up the houses.

*Allanton Rows.*—Practically no progress was made during the year with the improvements and the provision of proper domestic and sanitary conveniences at these Rows, which were referred to in last annual report, page 220, and at the close of the year the Medical Officer of Health reported that, while sinks and water-closets had been erected at Boiler Row, no attempt had been made to provide a suitable drain and water supply for these conveniences, nor for the other conveniences erected at Top Row over a year ago; that nothing so far had been done for the twenty houses at Double Row, and that, in these circumstances, there would seem to be no alternative but to institute proceedings without further delay.

*Quarter.*—At the houses in the village of Quarter belonging to the Colliery Company certain repairs are being carried out on the dwellings, and improved sanitary conveniences are being provided.

*East and West Longrigg.*—The houses owned by the colliery companies in these villages are referred to on pages 174 and 176 of the special report on Housing, and the existing insanitary conditions were again brought under the notice of the owners during the year, with a view to having certain improvements effected. As the seams of coal which provide employment in the neighbourhood are said to be nearly exhausted, the houses will soon cease to be occupied. An inspection was made by a Medical Inspector of the Local Government Board, and the following extracts from his report show his views on the subject:—

“(a) HOUSES BELONGING TO DARGAVIL COAL COMPANY, LIMITED.

The village of West Longrigg is owned by the Dargavil Coal Company. It consists of fifty houses in three parallel rows. Twenty-

four of these are of one room, twenty-six of two. Of the fifty, twenty-three are closed. There are thus some twenty-seven families at present inhabiting the village. For these rows there are nine privies and four ashpits. I have found all of the privies in a filthy state; not one is in use or in a condition to be used.

The houses in this village are not well constructed, but I share Mr. Dobson's opinion that, if they were put in a condition of good repair, and certain alterations effected, they, or at least a number of them, might be regarded as tolerably fit for occupation. The alterations would involve the provision of a lining for the walls, repair of the roof, the reconstruction of the window so that it could be opened, and the provision of proper privies, in the proportion of at least one to each two families. As regards the middle row, the houses in which are back-to-back, it would also be necessary to make openings so as to convert each double house into a single two-roomed house capable of through ventilation.

(b) HOUSES BELONGING TO MESSRS. JAMES NIMMO & CO., LIMITED.

The village of East Longrigg, owned by Messrs. James Nimmo & Company, is less satisfactory. It consists of two, or perhaps one should rather say three, rows, situated end to end. In these there are thirty-five houses, twenty-six containing one and nine containing two rooms. Sixteen of the thirty-five are already closed. There are thus about nineteen families in occupation. (Two other rows described in Dr. Dittmar's report, of March, 1905, are now completely demolished.) These houses are in very bad condition, and are practically past repair. The walls are damp, in some parts even wet. Except for one pane in each the windows do not open, the walls are badly racked by subsidence, and the roofs are generally in bad repair. For the nineteen occupied houses there are six ashpits and six privies. The latter are dilapidated, and were found in a filthy state. They neither are nor could be legitimately used. These houses, like those at West Longrigg, have neither coal-house nor wash-house.

It will be seen that, as the defects of these houses are very radical, floors, walls, and roofs all requiring reconstruction, and three-quarters of the whole number being of one room, it is at least very questionable if they are worthy of repair."

The colliery owners were afterwards communicated with, and they promised to proceed with the necessary improvements so soon as the weather permitted.

*Burntbroom.*—The insanitary conditions and want of proper domestic and sanitary conveniences at the six one-apartment and three two-apartment houses, situated at Burntbroom Colliery, in the Parish of Old Monkland, were dealt with at the close of the year, and the matter is presently under negotiation.

*Clyde Ironworks.*—The question of providing modern sanitary conveniences for the workmen's houses at Clyde Ironworks and Fullarton, Tollcross, in the Parish of Old Monkland, referred to on page 224

of last annual report, is still under consideration, it having been understood that the improvements at the Newton houses belonging to the same Company should first be completed. As the latter have now been finished, the Company will be pressed to proceed with the improvements at Tollcross.

*Kenmuir Rows.*—This group of twenty-six one-apartment and thirteen two-apartment dwellings was found to present serious sanitary defects, including the want of proper domestic and sanitary conveniences. Negotiations between the owners and the Local Authority are proceeding, and the Medical Officer of Health has been instructed to prepare a specification of the works considered necessary to make the houses in all respects reasonably fit for human habitation.

*Kerr's Land, Tollcross.*—The negotiations with the owner of this property, referred to on page 224 of last annual report, proved abortive, and a representation under the Housing Acts was accordingly submitted to the Local Authority, setting forth that the twenty-three dwellings known as Kerr's Land, and situated in Causewayside Street, Tollcross, were in a state so dangerous or injurious to health as to be unfit for human habitation. After considering the representation, the Local Authority made an Order, in terms of Section 17 (2) of the Housing, Town Planning, &c., Act, prohibiting the use of the said dwellings for human habitation until, in the judgment of the Local Authority, they were rendered fit for that purpose. Notice of the Closing Order was duly served on the owner, who afterwards appealed to the Sheriff, on the ground that each of the houses was fit for human habitation. At the request of the factors a meeting with the District Sanitary Inspector was arranged at the property, with the result that, when the appeal came before the Sheriff, the appellant's agent intimated that his client withdrew his appeal, and acquiesced in the Closing Order. The Order having become operative, notices were served on the occupiers requiring them to cease to inhabit the houses, and the property has since been shut up.

*Macfarlane's Land, Baillieston.* — If reference be made to page 225 of last annual report it will be seen that a Closing Order was made in respect of the sixteen houses situated on the ground floor, and that the statutory procedure provided by Section 15 was to be put into operation with regard to the houses on the upper floor. After the service of the statutory notices the owners had all the tenants removed from the property, and had same barricaded up. The barricade, however, was not sufficient to keep the public from gaining

access to the property, and as a nuisance might be created thereby it was considered desirable that the property should be demolished, but before a Demolition Order could be pronounced, it was necessary, to keep matters in legal form, that a further Closing Order be made dealing with the houses on the upper floor. A representation was accordingly prepared dealing with the remaining twelve houses on the upper floor, and the Local Authority having made a Closing Order, in terms of Section 17 (2) of the Housing, &c., Act, 1909, the whole property has since been demolished.

*Northrigg.*—Plans for improvements on the ten one-apartment and twelve two-apartment miners' dwellings, situated at the eastern boundary of Shotts Parish, referred to on page 216 of last annual report, have since been approved by the Local Authority. The improvements include the provision of a scullery, fitted with sink, gravitation water supply, and washing-boiler, and coal cellar for each house, and a water-closet for every two houses. The work is being proceeded with.

*Ladylands, Hartwood.*—As the result of negotiations with the owners, certain improvements were carried out at the eleven two-apartment workmen's dwellings known as Ladylands Row, Hartwood. The improvements comprise the provision of an earth-closet of approved design for every two houses, and an existing annexe at each house has been converted into a scullery, fitted with sink, water supply, and washing boiler. Coal cellars have also been provided.

*Sighthill, Salsburgh.*—Two single-apartment houses, situated at Sighthill, Salsburgh, in the Parish of Shotts, were found to be in such a damp and dilapidated condition as to be unfit for human habitation, and a representation was accordingly made, under the Housing, &c., Act, 1909. The Local Authority made an Order prohibiting the use of said dwellings for human habitation until, in their judgment, they were rendered fit for that purpose. No appeal was lodged against the Order, which accordingly became operative.

*Harthill.*—In connection with the complaints made regarding the insanitary conditions existing at the property in Main Street, Harthill, known as "Teapot Close," referred to in last annual report, page 228, the negotiations with the proprietors were brought to a successful issue, and the improvements are now being proceeded with. These consist of sinks with a gravitation water supply, and coal cellars for each house, a water-closet for every two houses, new wash-houses, and the paving of the back court.



*West Benhar.*—The negotiations with the owner of West Benhar Rows with regard to nuisance conditions and the want of proper domestic and sanitary conveniences there, referred to on page 226 of last annual report, were continued, but as no satisfactory agreement could be arrived at, legal proceedings were instituted to have the owner ordained to remedy the complaint, in terms of the notice served upon him under Section 16 of the Public Health Act. The hearing of the case occupied two days in Airdrie Sheriff Court, and the Sheriff afterwards issued a lengthy interlocutor, finding, *inter alia*, that a nuisance existed, and that the reconstruction and increase in numbers of midden privies, proposed by the defender, were insufficient to remove or even appreciably mitigate said nuisance, and allowed defender till 25th February to lodge a plan and proposal for the remedy of the existing nuisance and danger to health, and continued the case till 28th February, 1913. The legal questions raised in this case were most important, and the Sheriff's interlocutor is given *in extenso* at page 20 of the District Sanitary Inspector's annual report.

*Omoa Square.*—In continuance of the remarks in last annual report, page 226, regarding a Closing Order dealing with this property, and the subsequent procedure thereon, it was found that the tenants had a difficulty in securing other house accommodation in the neighbourhood, and, this matter having been reported to the Committee, it was agreed that the colliery owners and other employers of labour should be approached, to ascertain whether they would be prepared to provide houses for the workmen employed by them, and presently residing in Omoa Square; but in every case the employers expressed themselves as unwilling to provide house accommodation. One of the colliery companies afterwards entered into negotiations for the purchase of the houses at Omoa Square, with a view to putting them into a proper sanitary condition, but this also fell through. Matters were allowed to drift, in the hope that the occupiers might find other accommodation, till 5th November, when notices were served on the occupiers, referring them to the notices served on them on 29th April last, requiring them to cease to inhabit the dwelling-houses, and intimating that it was imperative they should forthwith vacate the houses, otherwise proceedings would be taken for their ejection under the statute. On the matter again coming before the Committee it was agreed that a sub-committee should make inquiries regarding the housing conditions in the Omoa Square district, and the Medical Officer of Health was asked to furnish a statement showing (1) the population of the several districts; (2) the occupations of the workers and the places of employment; (3) the number of houses let and unlet; and (4) the rentals of same. In sending this statement

the Medical Officer of Health pointed out that, when action was taken by the Public Health Department, there was no suggestion that the houses should be demolished, as it was hoped the owners would carry out the remedial measures bit by bit; that it was, therefore, unfair to suggest that we could have foreseen from the commencement of the action the position which had now arisen; and that, although this might not be the best locality for the District Committee to commence to build workmen's houses, it seemed, from the information obtained, that it would be very undesirable to eject the tenants without further inquiry. To enable the Committee to go fully into the question the Medical Officer of Health was afterwards asked for certain further information, and reported as follows:—

“ I.—*Population*.—The population, according to the last Police Census, is 3,355, distributed thus:—Cleland, 1,764; Parkside, 501; Bellside, 563; Auchenlea, 185; and Greenhill, 342.

“ II.—*Employment*.—The principal industry in this locality is coal-mining, the employers being:—United Collieries, Ltd., Greenhill Coal Company, Ltd., Murdostoun Coal Company, Ltd., and Auchenlea Coal Company, Ltd.

“ III.—*Houses available*.—So far as ascertained there are only seven empty houses, situated at Omoa Road (one), Main Street, Cleland (one), Spoutcroft (four), and Auchenlea (one).

“ IV.—*Rentals*.—The rentals of working-class houses in this district are from £5 to £11 10s.

“ I send you herewith Ordnance Sheet, showing the locality and the several works and collieries.”

After carefully considering the matter, the Sub-Committee recommended that the procedure provided by the Housing Acts with respect to the enforcement of the Closing Order be carried into effect. Ejectment notices were afterwards served on forty of the occupiers, with the result that the houses were all vacated, and are now shut up.

*Omoa Road, Cleland*.—Proceedings were instituted, under Section 16 of the Public Health Act, against the owner of twenty-one houses and a shop, situated at 118-123 Omoa Road, Cleland, the complaint being with regard to dilapidated privies and ashpit. While Court proceedings were pending the property reverted to bond-holders, and the matter was accordingly taken up with them, with the result that arrangements were made for the provision of sculleries, fitted with sinks, water supply, and washing-boiler for each dwelling, and a water-closet for every two dwellings. The work is being proceeded with.

**Town Planning.**—The sub-committee appointed to consider the propriety of forming a Town-Planning Scheme for Hamilton Road District, in the Parish of Dalziel, adjacent to the Burgh of Motherwell, further considered this matter during the year, and had several meetings with the representatives of the owners concerned—the Town Council of Motherwell, and the Local Government Board—and towards the close of the year the Local Authorities agreed that the conditions of the District warranted the adoption of a Town Planning Scheme, and that the area to be embraced should be fairly wide and comprehensive. In view of the fact that the greater portion of the area involved would be in County territory, the Burgh of Motherwell representatives agreed that the initial procedure should be undertaken by the District Committee, and it was afterwards arranged that the Burgh and District Officials should co-operate in preparing a map (No. 1) required by the Local Government Board Regulations, showing the area proposed to be embraced in the scheme.

There was also considered the formation of a Town Planning Scheme for Carfin and New Stevenston Districts, in the Parish of Bothwell, and Stane and Dykehead Districts, in the Parishes of Cambusnethan and Shotts.

**Houses Let in Lodgings.**—The bye laws regulating houses let in lodgings, or occupied by members of more than one family, have been found useful in preventing overcrowding, especially in mining districts. The number of houses on the register at the end of the year was 361, and inspections were made periodically by the Sanitary Staff with a view to detecting overcrowding.

**Tents, Vans, and Sheds.**—The bye-laws regulating tents, vans, and sheds are also applicable to sheds used for the boarding of berry-pickers during the season, but so far as ascertained there are no places in the Middle Ward area where such workers are housed, the labour being supplied from populous places in the neighbourhood, where the workers can return to their homes each evening. The bye-laws have been useful in dealing with travelling vans, mostly connected with shows or places of amusement, and in the course of the year 92 inspections of these were made. The premises were found clean, and no instances of overcrowding detected.

**Workshops.**—The number of registered workshops at the beginning of the year was 479. During the course of the year 15 were added to, and 48 removed from the register, leaving at the close of the year 446 workshops registered. This number includes 63 retail bakehouses, of which only 1 is considered underground.

The number of notices received from the Factory Inspector during the year was as follows:—

Commencement to occupy a Workshop, . . . . .	9 Notices.
Change of Occupancy, - - - - -	1 „
Sanitary Defects, - - - - -	0 „
Sanitary Accommodation Order, - - - - -	0 „

*Outworkers.*—No lists were received from employers throughout the year.

The names and addresses of 11 outworkers, under Section 107, were received from the City of Glasgow Local Authority, and on inspections being made the premises were found in a satisfactory condition.

The inspections made by the Sanitary Staff, the defects found, and the action taken were as follows:—

#### I.—INSPECTION.

Including Inspections made by the Sanitary Inspectors.

PREMISES.	NUMBER OF—		
	Inspections.	Written Notices.	Prosecutions.
Factories (including Factory Laundries), -	...	...	...
Workshops (including Workshop Laundries),	303	5	...
Workplaces (other than Outworkers' Premises included in Part III. of this Report), -	...	...	...
<b>Total, . . . . .</b>	<b>303</b>	<b>5</b>	<b>...</b>

## 2.—DEFECTS FOUND.

PARTICULARS.	NUMBER OF DEFECTS.			Number of Prosecutions.
	Found.	Remedied.	Referred to H. M. Inspector.	
Nuisances under the Public Health Acts :—				
Want of cleanliness, - - -	2	2	...	...
Want of ventilation, - - -	1	...	...	...
Overcrowding, - - - -	...	...	...	...
Want of drainage, - - - -	1	...	...	...
Other nuisances, - - - -	1	1	...	...
Sanitary Accommodation, { Insufficient, -	...	...	...	...
{ Unsuitable, or -	...	...	...	...
{ Defective, -	...	...	...	...
{ Not separate for sexes, -	...	...	...	...
Offences under the Factory and Workshop Act :—				
Illegal occupation of underground bakehouse (S. 101), - - -	...	...	...	...
Breach of special sanitary requirements for bakehouses (SS. 97 to 100), - - - -	...	...	...	...
Other offences (excluding offences relating to outwork, which are included in Part III. of this report), - -	...	...	...	...
Total, - - - -	5	3	...	...

## 3.—HOMEWORK.

Lists received from Employers, - - - -	...
Notices served on Occupiers, - - - -	...
Prosecutions, - - - -	...
Outwork in Unwholesome Premises, - - - -	...
Do. Infected Premises, - - - -	...

## 4.—REGISTERED WORKSHOPS.

Total Number of Workshops on Register at end of 1912, - 446

## 5.—OTHER MATTERS.

Matters notified to H.M. Inspector of Factories, - -	...
Notified by H.M. do., - - -	...
Underground Bakehouse in use at end of year, - -	1

A detailed tabular statement, prepared from the Register of Workshops, classified according to the trade or industry, is here given, along with a note of the number of employees :—

LIST OF WORKSHOPS, INCLUDING RETAIL BAKEHOUSES AND LAUNDRIES,  
CLASSIFIED ACCORDING TO THE NATURE OF THE INDUSTRY.

PARISH AND LOCALITY.	Dressmakers.	Tailors.	Milliners.	Bakers.	Boot and Shoe-makers.	Saddlers.	Blacksmiths.	Joiners.	Cabinetmakers.	Silk Weaving.	Other Manufactures.	TOTAL.											
<b>BOTHWELL—</b>																							
Bothwell, - - -	3	...	2	2	1	...	1	...	...	...	...	9											
Uddingston, - - -	5	7	...	3	5	...	1	2	1	...	4	28											
Bellshill and Mossend, Holytown, New Stevenston, and Newarthill, - - -	13	16	2	3	7	2	1	2	1	...	...	47											
Chapelhall, - - -	4	4	...	4	...	...	2	3	...	...	2	19											
	...	...	...	...	...	...	...	...	...	...	...	...											
<b>BLANTYRE—</b>																							
High and Low Blantyre, Stonefield, &c., - - -	6	9	2	10	4	1	2	...	...	...	5	39											
<b>CAMBUSLANG—</b>																							
Cambuslang, - - -	14	10	2	6	3	1	1	...	1	...	1	39											
<b>DALSERF—</b>																							
Larkhall, - - -	17	17	5	10	7	1	1	2	2	...	13	75											
<b>AVONDALE—</b>																							
Strathaven, &c., - - -	5	14	1	8	8	2	2	5	...	...	8	53											
<b>STONEHOUSE—</b>																							
Stonehouse, - - -	1	3	...	4	1	...	2	1	...	21	2	35											
<b>SHOTTS—</b>																							
Dykehead, Harthill, &c., - - -	16	12	4	4	7	...	3	5	...	...	2	53											
<b>CAMBUSNETHAN—</b>																							
Newmains, Stane, Overtown, &c., - - -	6	7	1	5	1	...	...	...	...	...	1	21											
<b>OLD MONKLAND—</b>																							
Baillieston, - - -	4	1	...	1	1	...	...	...	...	...	...	7											
<b>EAST KILBRIDE—</b>																							
East Kilbride, - - -	1	2	...	1	...	...	...	...	...	...	...	4											
<b>OTHER LOCALITIES—</b>	5	5	...	2	1	...	1	2	...	...	1	17											
<b>TOTAL WORKSHOPS, -</b>	100	107	19	63	46	7	17	22	5	21	39	446											
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.					
Number of Employees (Male and Female) in above Workshops, - )	359	242	126	...	57	196	7	96	...	13	...	48	...	84	...	13	4	21	16	58	84	771	653

### Special Districts.

The extent to which local administration contributes to the advancement of general sanitation may be realised from the number of districts formed for special purposes--Water Supply, Drainage and Sewage Disposal, Scavenging and Lighting. The number of districts so formed are, for convenience, shown in the following tabular statement, where a blank space in the assessment column will be understood to show that no special district has been formed for the purpose indicated. The districts might be grouped according to the number of special purposes for which they have been formed :—

Water Supply, - - - - -	A public water supply has been provided for the whole Middle Ward District, under special legislation.
Drainage, Lighting, and Scavenging, -	Strathaven, Blantyre, Bellshill, Bothwell, Holytown, New Stevenston, and Carfin ; Uddingston, Cambuslang, Newton and Flemington, and Dalziel and Netherton.
Drainage and Lighting, - - -	Busby, East Kilbride, Stonehouse, Aitkenhead and Tannocho-side, Newmains, Larkhall, Cleland and Omoa, and Baillieston.
Drainage and Scavenging, - - -	Hamilton Road and Mount Vernon.
Lighting and Scavenging, - - -	Gartlea and Carmyle.
Drainage, - - - - -	Chapelhall and Hamilton Road.
Lighting, - - - - -	Bothwellpark, Newarthill, Calderbank, Glengowan and Caldercruix, North Mount Vernon, and Shotts and Dykehead.
Scavenging, - - - - -	Salsburgh.

TABLE M.—LIST OF Special Districts WITHIN THE Middle Ward AND RATES LEVIED (AS ASCERTAINED FROM THE COUNTY CLERK) FOR THE YEAR 1912-1913.

District.	Parish.	Public Water Supply.	RATE OF ASSESSMENT PER £.			
			Water.	Drainage.	Lighting.	Scavenging.
Strathaven,	Avondale,	Middle Ward Water,	1/1 & 3d.	1s.,	4d.	1 1/2 0/10 d.
Busby,	East Kilbride,	Do.,	Do.,	11 1/2 0/10 d.	4d.	...
East Kilbride,	Do.,	Do.,	Do.,	1s.	4 1/2 0/10 d.	...
Stonehouse,	Stonehouse,	Do.,	Do.,	5d.	2 1/2 0/10 d.	...
<sup>1</sup> Blantyre,	Blantyre,	Do.,	Do.,	4d.	3 1/2 0/10 d.	6d.
<sup>2</sup> Bellshill,	Bothwell,	Do.,	Do.,	6d.	3 1/2 0/10 d.	8d.
<sup>3</sup> Bothwell,	Do.,	Do.,	Do.,	2 1/2 0/10 d.	5d.	4 1/2 0/10 d.
Bothwell Park Lighting,	Do.,	Do.,	Do.,	...	6 1/2 0/10 d.	...
Chapelhall,	Do.,	Do.,	Do.,	1s.	...	...
Holytown,	Do.,	Do.,	Do.,	4d.	3 1/2 0/10 d.	5 1/2 0/10 d.
New Stevenston,	Do.,	Do.,	Do.,	1 1/2 0/10 d.	...	...
Newarthill,	Do.,	Do.,	Do.,	...	5 1/2 0/10 d.	...
Aitkenhead and Tannoohside,	Do.,	Do.,	Do.,	2 1/2 0/10 d.	4d.	...
<sup>4</sup> Uddingston,	Do.,	Do.,	Do.,	3d.	3 1/2 0/10 d.	5d.
Carfin,	Do.,	Do.,	Do.,	8d.	3 1/2 0/10 d.	5 1/2 0/10 d.
<sup>5</sup> Cambuslang,	Cambuslang,	Do.,	Do.,	4d.	5 1/2 0/10 d.	4 1/2 0/10 d.
Newton and Flemington,	Do.,	Do.,	Do.,	6d.	...	4 1/2 0/10 d.
Newmains,	Cambusnethan	Do.,	Do.,	5d.	2 1/2 0/10 d.	...
Dalzell and Nethererton,	Cambusnethan and Dalziel,	Do.,	Do.,	8d.	2d.	2d.
Hamilton Road,	Dalziel,	Do.,	Do.,	3d.	...	2 1/2 0/10 d.
Larkhall,	Dalserf,	Do.,	Do.,	5 1/2 0/10 d.	2 1/2 0/10 d.	...
Gartlea,	New Monkland	...	...	...	4d.	5d.
Baillieston,	Old Monkland,	Airdrie and Coatbridge,	...	3d.	3d.	6d.
Calderbank,	Do.,	Do.,	...	...	1 1/2 0/10 d.	...
Mount Vernon,	Do.,	Glasgow,	...	3d.	...	2 1/2 0/10 d.
Carmyle,	Do.,	Do.,	...	...	2d.	...
N. Mount Vernon,	Do.,	Do.,	...	...	3d.	...
Cleland and Omoa,	Shotts,	Middle Ward Water,	1/1 & 3d.	1/1 1/2 0/10 d.	4d.	...
Shotts and Dykehead,	Do. and Cambusnethan	Do.,	Do.,	...	4d.	...
Salsburgh,	Shotts,	Do.,	Do.,	...	...	6d.
Glengowan and Caldercruix,	Do. and New Monkland	Do.,	Do.,	...	4d.	...

<sup>1</sup> Lighting, - - - 3d.  
 Electric Lighting, - - - 1 1/2 0/10 d.  
3 1/2 0/10 d.

<sup>3</sup> Lighting, - - - 3 1/2 0/10 d.  
 Electric Lighting, - - - 1 1/2 0/10 d.  
5d.

<sup>2</sup> Lighting, - - - 2d.  
 Electric Lighting, - - - 1 1/2 0/10 d.  
3 1/2 0/10 d.

<sup>4</sup> Lighting, - - - 2 1/2 0/10 d.  
 Electric Lighting, - - - 1d.  
3 1/2 0/10 d.

<sup>5</sup> Lighting, - - - 3 1/2 0/10 d.  
 Electric Lighting, - - - 2d.  
5 1/2 0/10 d.



### Water Supply.

**Public Supplies.**—The waterworks of the District have continued to receive careful administration, and the Medical Officer of Health has from time to time been consulted with regard to certain aspects of the work, but there is little new to report on this subject. The daily sampling at Glasford Filters has been continued, and the results of examination in the Chemical Laboratory will be found in the County portion of this report.

**SANDFORD.**—The wells from which the water-supply for the Village of Sandford, in the Parish of Stonehouse, is obtained, having failed during the drought of last summer, the question of introducing a gravitation water-supply was brought under the notice of the Water Engineer. The matter was afterwards considered in connection with certain alterations and extensions of the Middle Ward Water Scheme, and it was ultimately agreed that one of the new main pipes should pass quite close to the village, and that a gravitation supply would then be available. The work of laying this main pipe is presently in progress.

**Private Supplies.**—A number of samples from private water supplies were taken by the Sanitary Officers in their routine work. The results of analysis are given in Table N. The reports and proceedings are here briefly summarised.

*Bent Farm, Netherburn.*—Sample No. 1 taken from a barrel used for collecting rain-water, which was the only supply available for domestic purposes, was found unsatisfactory. A notice was served on the owner of the property requiring him to provide a proper supply of wholesome water.

*Hazeldean Farm, Stonehouse.*—Two samples, Nos. 2 and 3, were, on analysis, found to be satisfactory.

*Spence's Property, Gilmourton.*—Four samples, Nos. 4, 5, 6, and 7, proved on analysis to be unfit for domestic purposes. The practicability of obtaining a gravitation water supply to property in the village of Gilmourton from the Glengavel main pipe was discussed with the Water Engineer, who reported that the length of branch pipe required would be about 2,400 yards, and that the available revenue would only show a return of  $2\frac{1}{2}$  per cent. on the necessary outlay, instead of  $3\frac{1}{2}$  per cent. as stipulated for by the District Committee before extending their pipes for such supplies. A meeting was

afterwards held at the village with the parties interested, with a view to getting them to give the usual guarantee and obligation in such cases, but the matter has not yet been finally adjusted.

*Springvalley, Chapelton.*—In samples Nos. 8 and 9 the analysis showed that the water was unsuitable for domestic purposes.

*Trough near Broomfield Pit, Netherburn.*—The analysis of sample No. 10 showed no evidence of organic contamination, but the physical character was not altogether satisfactory.

*Goodoakhill Farm, Salsburgh.*—On analysing sample No. 11 it was found that the water was not of sufficient purity to be used as a domestic supply. Owing to the prohibitive cost of making a connection to the gravitation main pipe, which is over 1,000 yards distant, it was resolved to take no action meantime. A supply of water is occasionally carted from the County supply.

*Torfoot Farm, Drumclog.*—Two samples of water were taken, No. 12 being satisfactory for domestic use. Sample No. 13 was taken from a spring, and on analysis was found to be of great purity. The physical characters were not altogether satisfactory, but if the suspended matter be all removed the water would be very satisfactory. The results of the analysis were communicated to the occupier of the farm.

*Upland Water, Shotts Kirk.*—Samples Nos. 14 and 15 were from a drinking-pool to which cattle have access. It was said that the water might become polluted by drainage from Shotts Kirk School, but the results of analysis afforded no evidence of sewage contamination.

*Blairmuckhill Colliery, Harthill.*—The evidence of analysis in sample No. 16 showed that there was no organic contamination. The water is, however, not well suited for domestic purposes on account of its great hardness, although said to be used greatly by the colliery workmen.

*Back o' Moss Farm, Harthill.*—Sample No. 17 showed on analysis to be unsuitable for domestic purposes. The water from which the sample was drawn is from Blairmuckhill Colliery, and was a suggested supply for cottages proposed to be erected there.

*East Crookedstone Farm, Hamilton.*—The result of the analysis of sample No. 18 could afford no evidence of organic contamination, but the physical character proved to be unsatisfactory, and consequently renders the water unsuitable for domestic purposes.

*Barblues Colliery, Harthill.*—No. 19 was a sample of water from the shaft of No. 10 Pit, Barblues, which was found on analysis to be unsuitable for domestic use owing to its excessive hardness.

*Schoolhouse, Gilmourton.*—In sample No. 20 the result of analysis showed no evidence of organic contamination. The physical character was, however, unsatisfactory owing to turbidity, evidently caused by iron. (See remarks under "Spence's Property, Gilmourton," page 226.)

TABLE N.—SAMPLES OF WATER ANALYSED IN THE PUBLIC HEALTH LABORATORY.  
*Results of Analysis stated as Parts per 100,000.*

No.	Chlorides as Cl.	Nitrates as Nitrogen.	AMMONIA AS NITROGEN.		Oxygen Absorbed.	Total Hardness.	Total Solids.	Colour, Platinum Standard.	Water Supply.
			Free.	Albuminoid.					
1	1·2	abun.	·0936	·0102	·195	—	10·0	—	Bent Farm, Netherburn.
2	1·6	—	Nil	·0025	·120	—	20·0	—	Hazeldean Farm, Stonehouse.
3	1·5	—	Nil	·0048	·240	—	19·0	—	Do. do.
4	1·7	·134	·0022	·0124	·370	10·0	26·2	2·8	Spence's Property, Gilmourton.
5	1·6	·052	·0265	·0257	1·17	6·0	23·0	26·8*	Do. do.
6	3·3	·304	·0003	·0038	·16	13·3	31·0	2·4	Do. do.
7	2·1	·365	·0040	·0116	·365	10·3	21·0	7·2*	Do. do.
8	2·7	·304	0052	·0060	·385	8·14	20·0	2·9*	Moodie's Property, Chapelton.
9	1·3	·004	·0017	·0097	·350	6·9	13·0	2·6*	Do. do.
10	2·9	·050	·0041	·0033	·380	16·4	40·0	6·2	Trough near Broomfield Pit, Netherburn.
11	3·5	·390	·0011	·0059	·385	14·8	20·8	3·2	Goodoak Hill Farm, Salsburgh.
12	4·2	·410	Nil	·0019	·115	10·3	34·0	1·3	Torfoot Farm, Drumclog.
13	1·3	·085	Nil	·0012	·080	4·5	10·2	1·2	Do. do.
14	1·2	·028	·0012	·0036	·345	—	33·6	—	Upland Water, Kirk o' Shotts School, Salsburgh.
15	1·1	trace	·0016	·0064	—	—	—	—	Do. do. do.
16	1·3	Nil	Nil	·0022	·255	26·3	66·0	2·4	Blairmuckhill Colliery, Harthill.
17	1·2	·000	·0137	·0060	·380	27·3	48·0	3·2*	Back o' Moss Farm, Harthill.
18	1·3	·008	·000	·0009	·130	19·6	28·6	2·8*	East Crookedstone Farm, Hamilton.
19	1·3	Nil.	·0068	·0008	·115	72·6	—	—	No. 10 Pit, Barblues, Harthill.
20	1·6	·120	·0003	·0059	·285	12·5	23·2	3·2*	Schoolhouse, Gilmourton.

Nitrites were present in Nos. 1, 4, 5, 6, 7, 8, 10, 11, 17 and 18.

\* Paper filtered before colour estimation was made.

### Drainage and Sewage Disposal.

The provision of proper means of drainage and sewage disposal for villages and groups of houses outwith Special Drainage Districts has been the subject of much serious consideration by a special Committee, who instructed a report by the Chairman, District Clerk, and Medical Officer to be prepared. This report is embodied in the printed minutes for the year 1911, at pages 591 to 611. The opinion formed and recommendations were that the Local Authority should agree to exercise the powers available to them under the Public Health Act, to provide out of the general public health rate (levied for the purpose only on the area of the Middle Ward so far as outwith Special Drainage Districts) sewerage systems for such places as cannot of themselves provide and maintain a scheme, with the proviso that the properties drained should meet the expenditure up to an amount equal to a rate of 1s. 3d. per £, and that no suitable area or district requiring a sewerage system should have the same provided out of the general public health rate if it could of itself provide a scheme at an assessment not exceeding 1s. 3d. in the £.

*Glenboig.*—The proposed formation of a Special Drainage District to include Glenboig was again under consideration of the Special Joint-Committee of the Middle and Lower Ward Districts, and the Engineers reported that the two fireclay companies, who own most of the houses in the village, refused to make any contribution towards the cost of the proposed drainage scheme. A report was also submitted by the Medical Officer of Health, dealing with the existing sanitary conditions in the village, and expressing the view that it was desirable and necessary that a Special Drainage District should be formed, in order to secure a satisfactory remedy for certain of the conditions. The whole question was carefully considered, and another method for the disposal of the sewage from the greater part of the area having been suggested by a member of Committee, it was agreed to continue the whole matter in order that the Engineers might make such survey of the ground, and enquiry regarding the proposal, as might be necessary to enable them to advise on same.

*Shotts.*—The question of the formation of a Special Drainage District, referred to on page 237 of last Annual Report, was again under consideration during the year, and negotiations were entered into for securing the necessary land for purification works, and for a wayleave for the sewers. These were satisfactorily concluded, and the Local Authority afterwards agreed to the formation of a Special Drainage District, to include the area of the present Shotts and Dykehead Special Lighting District.

*Salsburgh.*—A complaint having been received regarding the foul condition of the ditch on the north side of the Public Hall, Salsburgh, the question of drainage facilities for this village was again taken up, and reports thereon submitted, showing how the proposed drainage scheme might be modified. Meetings were also held with the owners of property interested, when the proposed modified scheme was discussed. It was found that the feuars were not in favour of a voluntary scheme, but preferred that the matter should be dealt with by the formation of a Special Drainage District. This, however, was found to be impracticable, as the rate required to meet the expenditure was prohibitive. After fully considering the matter, however, the Subcommittee agreed that a proper drainage scheme should be provided for the village, and that such part of the expense of same as might be afterwards determined should be met out of the general Public Health assessment. In this view the officials were instructed to report with all necessary particulars, including their recommendations, as to the drainage scheme which should be adopted.

*East Kilbride Drainage.*—The Local Authority having resolved to enlarge the area of the existing East Kilbride Special Drainage District to include two small areas, an Appeal was taken to the Sheriff-Substitute by the proprietor of Limekilns House against the inclusion of his property. The Appeal was dismissed, and a further Appeal was made to the Sheriff-Principal, who also dismissed the Appeal, and approved of the resolution of the Local Authority.

*Glen Road, Wishaw.*—In connection with the erection of certain houses in this new street, adjoining the Burgh of Wishaw, certain difficulties were experienced in providing for water supply and drainage, as it was found that these facilities could not be obtained from the Burgh Authorities on reasonable terms. It was ultimately arranged to make certain alterations on the highway drain at the place, so that drainage connections could be made for the properties in question, and also to make an extension of the Committee's water-pipes for the purpose of giving water supplies.

*Stonehouse Drainage.*—Complaint was received as to offensive odours from sewer manholes, and arrangements were made by the District Engineer to have the sewer flushed, with a view to obviating further complaints.

*Harthill Drainage.*—A ditch on the south side of the village of Harthill, which forms part of the County boundary, has long been a source of complaint, through the discharge into same of sewage from the properties situated on the south side of the main street. Meetings were held on the ground with the parties interested, and it was

ultimately arranged that a 15-inch pipe should be laid along the ditch, the cost being borne by each feuar in proportion to the valuation of his property. The pipe has since been laid, and the drains from the various properties have been connected to it.

*Larkhall.*—In connection with the proposed construction of purification works, the Committee arranged to acquire the lessee's interest in the lease of subjects at Millheugh, to deal with the sewage from part of Larkhall Special Drainage District.

*Chapelhall Drainage.*—The District Engineer submitted a report on the question of suggested extension of the boundaries of this Special Drainage District, to include the houses in the vicinity which are presently outwith a Special District. The report showed, *inter alia*, that the whole of the owners of the properties included in the proposed extension were, with one exception, already paying drainage rates and receiving drainage facilities, and the Committee resolved to continue consideration of the matter.

*Gartness.*—Complaint was received regarding the pollution of a burn by sewage from Gartness Rows, in the Parish of Shotts. The whole question of sewage disposal was carefully considered, and, on a report being submitted to the Committee, it was decided not to take any action in the matter.

### Scavenging.

No new Special Scavenging Districts were formed during the year, and the number of Special Scavenging Districts accordingly remains at 13.

*Carmyle.*—Complaint was received that dust-bins at tenements at the corner of River Road and Carmyle Avenue were in an unsatisfactory condition, and the matter received immediate attention.

*Newmains.*—Inquiries were made by a property owner as to whether there was any prospect of scavenging being introduced into this area, and it was found on making inspection that the need for having a Special Scavenging District was clamant. A requisition was afterwards received, calling upon the Local Authority to meet and consider the propriety of the formation of a Special District to include Newmains, &c., and reports on the subject have been submitted by the District Sanitary Inspector. The matter, however, is still under consideration.

*Cambuslang.*—Complaints having been made as to the manner in which the work of scavenging was being carried out by the contractor—the chief complaint being that some parts of the town of Cambuslang

were not scavenged daily, and that the ashpits in the Newton area were not cleaned out in a proper manner, the contents of these often being allowed to lie on the streets overnight—a meeting was arranged between the contractor and the various officials interested, when the whole question was fully discussed, and the contractor undertook to give the work his very best attention.

*Baillieston.*—In the Special District formed at the close of last year, to include the villages of Baillieston and West Maryston, the work of scavenging was commenced on 15th April, 1912. The staff are in the direct employment of the Local Authority. The dry refuse is meantime disposed of in a coup, and the wet ashpit matter is used for farm purposes. Some progress has been made during the year in abolishing privies and ashpits, and introducing water-closets and dustbins in their stead.

**Private Streets.**—A number of inspections of private streets were made during the year, and these will be briefly referred to.

*Blantyre.*—Craig Street is still the subject of consideration and negotiation with the superior and feuars.

The insanitary condition of John Street, Blantyre, was under consideration, and it was arranged that a joint-meeting should be held with the superiors and representatives of the feuars, with a view to having the necessary improvements agreed to.

*Bellshill.*—Complaint having been made as to the condition of Garfield Avenue, a report was submitted showing the work necessary to meet the requirements of Section 39 of the Public Health Act. It was afterwards suggested, however, as an alternative, that the street might be made up to such a condition that it could be taken over as a public highway, and an estimate of the cost of this work was prepared by the Road Surveyor. Several of the owners objected to the latter course, however, as they preferred that the street should remain private, and the repairs were therefore only carried out to meet the requirements of the Public Health Act.

### **Nuisances.**

The method in operation for the issue of statutory notices in the compulsory removal of nuisances is still continued, and a few of the more important nuisances dealt with during the year will be here referred to. It was found necessary to institute proceedings in Court in connection with the following:—

- (1) Omoa Road, Cleland.—Foul ashpit and two privies.
- (2) Craw's Buildings, Larkhall.—Improperly using a water-closet, and causing same to become choked.

- (3) Bellgowan Terrace, Bellshill.—Failing to cleanse a water-closet.
- (4) West Benhar Rows.—Want of proper domestic and sanitary conveniences.

The proceedings were successful in every case.

*Refuse Bing, Calderbank.*—Complaint was received from certain residents in the village of Calderbank with regard to offensive odours from a burning refuse bing there. An inspection was made along with the manager of the Colliery Company, when it was found that the fire extended throughout the greater part of the bing. Attempts had been made to extinguish the burning portion by trenching and the application of water, but this had not been successful. A further extension of trenches and an increased supply of water were recommended, with vertical borings every 6 feet apart, and these measures ultimately proved effective in extinguishing the fire.

*Burning Bing, Mount Vernon.*—Complaint was received regarding noxious fumes from a burning refuse bing at Burntbroom Colliery (disused), Mount Vernon. Several visits were made, and it was found that the bing occupied a considerable area, and that smoke with offensive odours was issuing from the whole area, but that it might be difficult to prove that the conditions found constituted a nuisance under Section 16 of the Public Health Act, in view of the decision given some years ago in the Auchenraith case. The matter was, however, taken up with the colliery owners, when it was found that they were unwilling to do anything in the way of extinguishing the fire, and a notice was accordingly served on them under Section 16 of the Public Health Act, calling upon them to have the nuisance removed within fourteen days. Nothing, however, was done by them, and the fire ultimately burned itself out.

*Model Lodging-house, Shotts.*—A complaint was received regarding alleged insanitary conditions existing at the Model Lodging-house at Shotts. An inspection was immediately made, when it was found that certain alterations and extensions were in progress, and that these operations rendered the premises somewhat untidy, but that there was no ground for action on the part of the Local Authority.

*Ferniegair.*—The drainage from a considerable part of the village of Ferniegair flows into a ditch, and this ditch having become silted up, the sewage escaped over the adjoining land, with the result that the tenant of the land made a complaint. Several inspections were made, but the conditions found were not such as to constitute a nuisance within the meaning of Section 16 of the Public Health Act



*Milton Place, Larkhall.*—The Medical Officer of Health inspected these premises, when numerous sanitary defects were found to exist, and the owner promised to have these put right. It was also explained to the latter that something would require to be done in the new block to have the houses let again as two-apartment dwellings, and that the general repairs, when carried out, would be inspected and further considered.

*Larkhall Private Streets.*—Following upon the important decision obtained in 1909, under Section 16 of the Public Health Act, against the owners of property in certain private streets in Larkhall which were considered a nuisance, requiring them to have these repaired and made good to the satisfaction of the Local Authority, another complaint was made with regard to the condition of Claude Street, Academy Street, Percy Street, and North Street, and legal proceedings have since been instituted.

The **Interments** carried out at the expense of the Local Authority, under Section 69 (1) of the Public Health Act, numbered 24. Of these, 11 were infants, the remaining 13 being adults.

*Medico-Legal Cases.*—5 of these were primarily dealt with by the Constabulary, 1 being from natural causes, 2 being from accident, and 2 from drowning. In connection therewith the police station mortuaries were used in 4 cases—at Bellshill (1), at Coatbridge (1), at Larkhall (1), and at Motherwell (1).

The number of interments in each parish, distinguishing juvenile cases from adults, and cases first dealt with by the police from those dealt with by the Sanitary Staff, are given in the following table:—

TABLE O.—INTERMENTS CARRIED OUT BY THE LOCAL AUTHORITY DURING THE YEAR 1912.

PARISH.	Infants and Juveniles.	Adults.	Police Cases.	Sanitary Cases.
Blantyre, ... ..	2	1	...	3
Bothwell, ... ..	2	3	2	3
Cambuslang, ... ..	1	2	...	3
Cambusnethan, ... ..	1	...	...	1
Dalserf, ... ..	3	1	1	3
New Monkland, ... ..	2	1	...	3
Old ,, ... ..	...	3	1	2
Shotts, ... ..	...	2	1	1
Total, ... ..	11	13	5	19
	24		24	

#### Dairies.

In connection with the erection and occupation of new dairies and dairy premises, seventeen plans of premises were submitted to the Local Authority to give effect to the provisions of Article 7 (1) of the Order of 1885, and facilitate the lawful occupancy of such premises. The plans were examined by the Sanitary Inspector, and, after being made conform to the Order and Regulations, reported to the Committee for approval. The plans lodged were allocated thus:—in the Parish of Avondale, 5; East Kilbride, 2; Glasford, 1; Bothwell, 3; Cambuslang, 1; Dalserf, 1; Hamilton, 2; New Monkland, 1; and Old Monkland, 1.

*Insanitary Conditions.*—Legal proceedings were taken in two instances against the occupiers of dairy farms for carrying on business in premises which were not in accordance with Article 8 of the Dairies, Cowsheds, and Milkshops Order, 1885. The Sheriff found both complaints proved, and imposed penalties of 31s. 6d. and £2 respectively.

Many of the dairy farms throughout the district were found to be in an insanitary condition, and the matter was specially brought under the notice of the Local Authority, with the result that a sub-committee was appointed to visit certain of these, and report with their observations. Ten farms were afterwards visited, and at each explanations were given as to the suitability of the premises for dairy purposes, and how far the existing conditions in regard to floor area, cubic space, ventilation, and lighting, were in conformity with the standards set out in the model regulations prepared by the Local Government Board, and the draft regulations of the Local Authority. It was agreed that the whole subject should be considered at a future meeting.

*Proposed Regulations.*—Negotiations were reopened with the Local Government Board with a view to having the proposed new regulations of the Local Authority for dairies, cowsheds, and milkshops confirmed, and made operative throughout the District as early as possible.

#### **Veterinary Inspection of Dairy Herds.**

The veterinary inspection of dairy herds was carried out by the County Veterinary Officer and an assistant on the same lines as in the preceding year.

The records show that 999 dairy herds, containing 17,956 cows, were examined. As on former occasions, samples of milk were drawn from all udders which, upon examination, showed conditions suspicious of tubercle. In this way 48 samples of milk were taken, and sent to the bacteriological laboratory, where, after examination, 23 were found to contain tubercle bacilli.

In all positive cases certificates were granted by the Veterinary Surgeon, in terms of Article 3 of the Dairies, Cowsheds, and Milkshops Order, 1899.

Communications were at once issued to the owners pointing out their responsibilities under the Dairies, Cowsheds, and Milkshops Orders, and enquiring as to the arrangements to be made for the disposal of the animals.

These inquiries showed that, in every instance, the milk from the tubercular udder was no longer used for human food. In some cases the animal was in full milk, and in others was almost yeld. The animal was either at once slaughtered or fed up for slaughter.

At two farms the dairy animals were found to be in a dirty condition, and notices were served on the occupiers to have the animals properly cleaned and groomed.

Cows with abnormal condition of the udder other than tubercle were also recorded, and the results are as shown in the following table:—

## INSPECTION OF DAIRY HERDS, 1912-13, CLASSIFIED ACCORDING TO PARISH.

PARISH.	Herds.	Cows.	Suspected Tubercle.					Cows with Abnormal Conditions of Udder.					Total.
			Samples of Milk.	Result.				Tubercle.	Atrophy.	Mammitis.	Induration N.T.	Eruption on Teats.	
				Smear.		Biological.							
				+	-	+	-						
Avondale, - -	175	3,613	3	1	2	...	2	1	118	39	61	18	237
East Kilbride, -	143	3,464	12	3	9	1	7	4	121	14	98	22	259
Glasford, - -	62	1,142	6	2	4	...	3	2	31	5	30	9	77
Stonehouse, -	48	822	3	...	3	1	2	1	25	8	17	5	56
<i>First Division,</i> -	428	9,041	24	6	18	2	14	8	295	66	206	54	629
Blantyre, - -	31	367	2	2	...	...	...	2	13	1	7	2	25
Bothwell, - -	93	1,446	4	3	1	...	1	3	51	10	24	3	91
Cambuslang, -	30	745	4	2	2	1	1	3	32	20	15	..	70
Cambusnethan, -	60	949	5	3	2	...	...	3	42	7	25	7	84
Dalserf, - -	38	622	...	...	...	...	...	...	19	1	9	1	30
Dalziel, - -	8	182	...	...	...	...	...	...	14	1	4	4	23
Hamilton, - -	58	1,308	4	1	3	1	2	2	47	9	30	3	91
<i>Second Division,</i> -	318	5,619	19	11	8	2	4	13	218	49	114	20	414
New Monkland, -	94	1,098	4	1	3	1	2	2	33	13	11	3	62
Old Monkland, -	47	809	...	...	...	...	...	...	28	14	13	4	59
Shotts, - -	112	1,389	1	...	1	...	1	...	45	14	24	6	89
<i>Third Division,</i> -	253	3,296	5	1	4	1	3	2	106	41	48	13	210
<i>Middle Ward,</i> -	999	17,956	48	18	30	5	21	23	619	156	368	87	1,253

When the smear proved positive no biological examination was done.

The total figures for abnormal conditions of udder include 25 cases of suspected tubercle, which gave negative results, and are, therefore, classified as induration.

These abnormal conditions, and the number of cows affected, were as follows:—Atrophy, 619; mammitis, 156; induration, N.T., 368; and eruption on teats, 87—total, 1,230. Adding to these figures the 23 affected with tubercle, the number of cows presenting abnormal conditions of the udder was 1,253, or 6·9 per cent.

#### Public Slaughter-houses.

Four public slaughter-houses were in operation during the year, and Mr. Cameron of Bellshill assisted the department in exercising general supervision over these.

The erection of public slaughter-houses at Strathaven and Shotts was proceeded with during the year.

The work done at Bellshill, Blantyre, Larkhall, and Stonehouse Slaughter-houses during the year 1912 has been briefly summarised from the reports by each Superintendent, and will be found on the following pages.

Some further interesting observations have been made by Mr. Cameron on the subject of congenital bovine tuberculosis, and I take the liberty of incorporating them here:—

#### CONGENITAL BOVINE TUBERCULOSIS.

##### OBSERVATIONS BY THE SUPERINTENDENT OF BELLSHILL PUBLIC SLAUGHTER-HOUSE.

In supplement of my previous report on the above subject, I beg to submit the following facts:—

On 14th November, 1912, I was called to Stonehouse Slaughter-house to examine the carcass of a cow detained by the Superintendent there. The carcass was affected with generalised tuberculosis, there being miliary tuberculosis of both lungs; the disease was present in both cavities and their viscera, and the peritoneum was very badly affected. In such pathological conditions it is usual to find the uterus affected. I directed my attention to this organ, and found that it contained a large foetus, about six months old, which I examined for evidence of tubercle, with the following result:—

CARCASS.							
Pharyngeal,	...	...	...	...	Lymph glands affected.		
Prepectoral,	...	...	...	...	"	"	"
Anterior Suprasternal,	...	...	...	...	"	"	"
Lumbar,	...	...	...	...	"	"	"
Deep Inguinal,	...	...	...	...	"	"	"

The other glands of the trunk showed no deposit.

The pleura and peritoneum showed no evidence.

## VISCERA.

*Lungs*.—A few small nodules in substance.

Mediastinal Lymph Glands affected.

Bronchial       "       "       "

*Liver*.—Substance did not show evidence.

Portal Lymph Glands badly affected.

*Mesentery*.—Mesenteric Glands affected.

*Spleen*.—Substance affected.

The above viscera were taken to the County Laboratory, and smear preparations were made in my presence by the Bacteriologist, and the following is a copy of his report:—

## FŒTAL CALF.

<i>Lungs</i> , ... ..	...	show a few tubercle bacilli in smear.	
<i>Mediastinal Gland</i> ,	...	a very few	" "
<i>Bronchial Gland</i> ,	...	a few	" "
<i>Mesenteric Gland</i> ,	...	"	" "
<i>Portal Gland</i> ,	...	very few	" "
<i>Spleen</i> ,	...	a few	" "

I carefully examined the uterus and incised a large number of the cotyledons, and in quite a number of them I could see small yellow spots very like tubercle. I also took one of the cotyledons to the Laboratory, and saw the Bacteriologist make a smear preparation from same; the following is his report:—

## "COTYLEDON FROM UTERUS OF COW.

"Smear shows a large number of tubercle bacilli, many in clumps and some intra-cellular."

**Bellshill**.—The tables given in the report show in detail the class of animals slaughtered, and the extent to which disease was prevalent. From Table I. it will be seen that, during the year, the total number of animals slaughtered was 9,951, being an increase of 358 from 1911. It was found necessary to condemn either the organs or some portion of the carcasses of 954 animals. Of the 954 animals, 717 were affected with tuberculosis, and Table II. shows to what extent the disease was present in each class of animal. The organs of sheep condemned were mostly livers affected with distomatosis.

*Bellshill.*—TABLE I.—ANIMALS SLAUGHTERED, NUMBER HAVING CARCASSES WHOLLY OR PARTIALLY CONDEMNED, AND NUMBER HAVING ORGANS ONLY CONDEMNED.

Animals Slaughtered.		Animals having Condemned Carcasses.		Animals having Condemned Organs.	Total.
Class.	Number.	Wholly.	Partially.		
Cattle, - -	1,710	26	91	605	722
Calves, - -	1,928	26	...	2	28
Sheep, - -	5,733	4	...	134	138
Swine, - -	580	...	...	66	66
Totals, -	9,951	56	91	807	954

Table II. shows that the animals affected with tuberculosis were chiefly bovines, and only a few were swine. In 43 animals the disease was so extensive that the whole carcass was condemned, and in 90 animals partial condemnation was necessary.

*Bellshill.*—TABLE II.—ANIMALS AFFECTED WITH TUBERCULOSIS, CLASSIFIED ACCORDING TO THE EXTENT OF THE DISEASE.

Animals Slaughtered.		Animals having Condemned Carcasses.		Animals having Condemned Organs.	Total.	Per Cent.
Class.	Number.	Wholly.	Partially.			
Oxen, -	579	1	7	60	68	11·7
Bulls, -	142	2	6	35	43	30·2
Heifers, -	294	5	4	62	71	24·1
Cows, -	695	16	73	361	450	64·7
Calves, -	1,928	19	...	...	19	0·9
Sheep, -	5,733	...	...	...	...	...
Swine, -	580	...	...	66	66	11·3
Totals,	9,951	43	90	584	717	7·2

Table III. shows the other diseases which affected the animals, and for which condemnation was necessary.

*Bellshill.*—TABLE III.—OTHER DISEASES FOR WHICH CARCASSES WERE TOTALLY OR PARTIALLY CONDEMNED.

DISEASES.	Bulls.	Oxen.	Heifers.	Cows.	Calves.	Sheep.	Total.
Septic Metritis, - - -	...	...	...	1	...	...	1
Septicæmia, - - -	...	...	...	...	2	...	2
Gastro-Enteritis, - - -	...	...	...	...	4	...	4
Sapremia, - - -	...	...	...	1	...	...	1
Emaciation, - - -	...	...	...	...	...	2	2
Polyarthrititis, - - -	...	...	...	...	1	...	1
Peritonitis, - - -	1	...	...	...	...	1	2
Injury, - - -	...	...	...	...	...	1	1
<b>Totals, - - -</b>	<b>1</b>	<b>...</b>	<b>...</b>	<b>2</b>	<b>7</b>	<b>4</b>	<b>14</b>

*Blantyre.*—The amount of business done for the year 1912 is shown in Table I.

*Blantyre.*—TABLE I.—ANIMALS SLAUGHTERED, NUMBER HAVING CARCASSES WHOLLY OR PARTIALLY CONDEMNED, AND NUMBER HAVING ORGANS ONLY CONDEMNED.

Animals Slaughtered.		Animals having Condemned Carcasses.		Animals having Condemned Organs.	Total.
Class.	Number.	Wholly.	Partially.		
Cattle, -	2,856	187	363	1,563	2,113
Calves, -	140	8	...	...	8
Sheep, -	2,074	5	...	11	16
Swine, -	77	1	2	1	4
<b>Totals, -</b>	<b>5,147</b>	<b>201</b>	<b>365</b>	<b>1,575</b>	<b>2,141</b>

It was found necessary to condemn either organs or some portion of the carcasses of 2,141, or 41·5 per cent. of the total.

Table II. shows that, of the 2,141 diseased animals, 1,954, or 37·9 per cent. of the total slaughtered, were affected with tuberculosis, 147 of which were totally, and 359 partially, condemned.



*Blantyre.*—TABLE II.—ANIMALS AFFECTED WITH TUBERCULOSIS CLASSIFIED ACCORDING TO THE EXTENT OF THE DISEASE.

Animals Slaughtered.		Animals having Condemned Carcases.		Animals having Condemned Organs.	Total.	Per Cent.
Class.	Number.	Wholly.	Partially.			
Oxen, -	248	...	1	10	11	4.4
Bulls, -	45	...	1	20	21	46.6
Heifers, -	182	9	6	28	43	23.6
Cows, -	2,381	137	349	1,389	1,875	78.7
Calves, -	140	...	...	...	...	...
Sheep, -	2,074	...	...	...	...	...
Swine, -	77	1	2	1	4	5.1
Totals, -	5,147	147	359	1,448	1,954	37.9

Table III. shows the other diseases which affected the animals, and for which condemnation was necessary. The table itself is sufficiently explanatory.

*Blantyre.*—TABLE III.—OTHER DISEASES FOR WHICH ANIMALS WERE TOTALLY OR PARTIALLY CONDEMNED.

DISEASES.	Bulls.	Heifers.	Cows.	Calves.	Sheep.	Swine.	Total.
Septicæmia, -	...	...	7	1	...	...	8
Septic Metritis, -	...	...	19	...	...	...	19
Septic Peritonitis, -	...	1	1	...	...	...	2
Emaciation, -	...	...	9	...	2	...	11
Mammitis, -	...	...	2	...	...	...	2
Enteritis, -	...	...	2	7	...	...	9
Pleuritis, -	...	...	1	...	...	...	1
Pneumonia, -	...	...	...	...	1	...	1
Braxy, -	...	...	...	...	2	...	2
Injury, partial, -	...	...	5	...	...	...	5
Totals, -	..	1	46	8	5	...	60

**Larkhall.**—The amount of business done during the year 1912 is shown in Table I.

*Larkhall.*—TABLE I.—ANIMALS SLAUGHTERED, NUMBER HAVING CARCASSES WHOLLY OR PARTIALLY CONDEMNED, AND NUMBER HAVING ORGANS ONLY CONDEMNED.

Animals Slaughtered.		Animals having Condemned Carcasses.		Animals having Condemned Organs.	Total.
Class.	Number.	Wholly.	Partially.		
Cattle, -	1,419	27	146	584	757
Calves, -	100	2	...	...	2
Sheep, -	2,288	4	...	5	9
Swine, -	196	2	2	7	11
Totals, -	4,003	35	148	596	779

It was found necessary to condemn either organs or some portion of the carcasses of 779, or 19·4 per cent. of the total.

Table II. shows that, of the 779 diseased animals in Table I., 636, or 15·8 per cent. of the total slaughtered, were affected with tuberculosis, 24 of which were totally, and 144 partially, condemned.

*Larkhall.*—TABLE II.—ANIMALS AFFECTED WITH TUBERCULOSIS CLASSIFIED ACCORDING TO THE EXTENT OF THE DISEASE.

Animals Slaughtered.		Animals having Condemned Carcasses.		Animals having Condemned Organs.	Total.	Per Cent.
Class.	Number.	Wholly.	Partially.			
Oxen, -	366	1	2	23	26	7·1
Bulls, -	41	...	2	14	16	39·0
Heifers, -	145	...	1	19	20	13·7
Cows, -	867	21	137	405	563	64·9
Calves, -	100	1	...	...	1	1·0
Sheep, -	2,288	...	...	...	...	...
Swine, -	196	1	2	7	10	5·1
Totals,	4,003	24	144	468	636	15·8

Table III. shows the other diseases which affected the animals, and for which condemnation was necessary.

*Larkhall.*—TABLE III.—OTHER DISEASES FOR WHICH CARCASSES WERE TOTALLY OR PARTIALLY CONDEMNED.

DISEASES.	Oxen.	Cows.	Calves.	Sheep.	Swine.	Total.
Pericarditis, - - -	...	2	...	...	...	2
Emaciation, - - -	...	...	...	...	1	1
Pneumonia, - - -	...	1	...	...	...	1
Abscess, - - -	...	1	...	...	...	1
Peritonitis, - - -	...	2	...	...	...	2
Gastro Enteritis, - - -	...	...	...	2	...	2
Septic Metritis, - - -	...	1	...	...	...	1
Injury (partial), - - -	...	2	1	1	...	4
Braxy, - - -	...	...	...	1	...	1
Totals, - - -	...	9	1	4	1	15

*Stonehouse.*—The amount of business done during the year 1912 is shown in the following tables, which are sufficiently explanatory in themselves:—

*Stonehouse.* — TABLE I. — ANIMALS SLAUGHTERED — NUMBER HAVING CARCASSES WHOLLY OR PARTIALLY CONDEMNED, AND NUMBER HAVING ORGANS ONLY CONDEMNED.

Animals Slaughtered.		Animals having Condemned Carcasses.		Animals having Condemned Organs.	Total.
Class.	Number.	Wholly.	Partially.		
Cattle, -	430	10	2	125	137
Calves, -	45	...	...	...	...
Sheep, -	585	...	...	12	12
Swine, -	139	...	...	5	5
Totals, -	1,199	10	2	142	154

*Stonehouse.*—TABLE II.—ANIMALS AFFECTED WITH TUBERCULOSIS  
CLASSIFIED ACCORDING TO THE EXTENT OF THE DISEASE.

Animals Slaughtered.		Animals having Condemned Carcases.		Animals having Con- demned Organs.	Total.	Per Cent.
Class.	Number.	Wholly.	Partially.			
Oxen, -	91	...	...	...	...	...
Bulls, -	21	...	...	...	...	...
Heifers, -	79	...	...	6	6	7.5
Cows, -	239	7	2	72	81	33.8
Calves, -	45	...	...	...	...	...
Sheep, -	585	...	...	...	...	...
Swine, -	139	...	...	5	5	3.5
Totals, -	1,199	7	2	83	92	7.6

The other three cows totally condemned were for septic metritis, septicæmia, and emaciation.

#### **Offensive Businesses.**

**Knackery.**—The business carried on at Omoa as a knackery, where some of the material is prepared for manure, has been regularly and frequently inspected, especially by the Veterinary Staff, in connection with the disposal of carcasses of animals affected with anthrax, glanders, and tuberculous disease, and found to be conducted in a satisfactory manner.

There is also a disused manure work at Tillanburn, Holytown, for which application for the annual slaughter-house license continues to be made, although no business has been done for years.

**Slaughter-houses.**—The total number of private slaughter-houses at the beginning of the year was 15, and of public slaughter-houses 4. All of these private slaughter-houses received renewal of licenses from Whitsunday, 1911, and are situated thus:—East Kilbride, 1; Newarthill, 2; Chapelhall, 1; Cleland and Omoa, 5; Caldercruix, 1; Longriggend, 1; Baillieston, 2; and Harthill, 2.

Inspections of these private slaughter-houses were made from time to time by the Sanitary Staff, and amounted to 192. The premises were all found in a satisfactory condition.

Orders were granted by the Local Authority, sanctioning the establishment of public slaughter-houses at Strathaven and Shotts, and the premises are now in course of erection.

The question of providing public slaughter-houses at Baillieston and Bothwell was before the Committee during the year, and is still under consideration.

*Unsound Food.*—Inspections for the detection of unsound or diseased butcher-meat were made by the Sanitary Inspectors as opportunity occurred. Three seizures were made, and legal proceedings were taken in two of these cases, which are briefly referred to as follows:—

On 14th March the left fore-quarter of a bovine animal was seized in the premises of a butcher at Glasgow Road, Blantyre, which, after examination, was certified to be diseased, unsound, and unfit for the food of man, being part of the carcass of an animal which had suffered from tuberculosis. The animal had been slaughtered in Hamilton Burgh Slaughter-house, as the portion seized bore the stamp "Hamilton—passed." Accused pled not guilty, but was convicted on proof, and, in the circumstances, no penalty was imposed.

On 19th October five pieces of the carcass of a bovine animal were seized in a butcher's sale-van, in the village of Annathill, in the Parish of New Monkland, and, being found diseased, unsound, and unfit for the food of man, were destroyed by warrant of the Sheriff. Accused pled guilty, and was fined £2, with £1 10s. 6d. of expenses.

MIDDLE WARD HOSPITAL  
AND  
LIGHTBURN JOINT-HOSPITAL.

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Annual Reports for 1912.

180 DISTRICT HOSPITAL  
MOTHERWELL

MIDDLE WARD HOSPITAL

LIGHTBURN JOINT HOSPITAL

Annual Reports for 1912

MIDDLE WARD DISTRICT HOSPITAL  
MOTHERWELL.

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SIXTEENTH ANNUAL REPORT BY THE  
PHYSICIAN-SUPERINTENDENT.

MIDDLE WARD HOSPITAL,  
MOTHERWELL, *May*, 1913.

TO THE CHAIRMAN AND MEMBERS OF THE  
HOSPITAL COMMITTEE.

GENTLEMEN,

I have the honour to submit the Annual Report of the Middle Ward Hospital for the year 1912.

The number of admissions during that year has surpassed all previous records. For the past five years the total admissions have been, respectively, 1,011, 1,151, 1,187, 1,193, and for the year under review 1,352. This increase is chiefly due to the hospital taking cases from areas which before were served by smaller hospitals, those hospitals being now entirely devoted to tuberculosis. It is also, to a lesser extent, due to the number of skin cases that is being admitted.

The number of cases admitted notified as scarlet fever was greater than that of all previous years. The cases admitted as enteric fever and diphtheria were, however, fewer than those of the two previous years.



There were in the hospital at the beginning of the year 133 cases, and 1,352 patients were admitted, making a total of 1,485 under treatment. Of these, 1,270 were discharged recovered or improved, and 60 died, leaving 155 in hospital at the end of the year.

*The greatest number of patients admitted on any one day* throughout the year was 12. This occurred on two occasions, the 22nd October and the 20th November respectively.

*The greatest number admitted in one week* was 40, in the week ending 12th October, and *during one month* was 149, in October.

There were only four months of the year, namely April, May, June, and July, in which the number admitted was less than 100, the average for the whole year being 112·6 per month.

*The average daily number of patients resident* was 142·5, an increase of 14·1 on 1911. The largest number in hospital on any one day was 188, on 10th December and 5th March, a decrease of four on 1911's largest daily number. The smallest number resident on any one day was 91, on 1st June. Only on 16 occasions throughout the year was the number of patients under treatment less than 100.

*The average duration of residence* of all patients discharged was 37·4 days, of all recovered cases 38·5 days, and of all fatal cases 15 days.

The first two numbers include Burgh Tinea cases, who were resident 1 day only.

*The Fatality Rate*, calculated on all the discharges, was 4·5 per cent., a decrease of ·6 per cent. on last year's rate. Excluding 12 cases who died within 48 hours of admission to hospital, the fatality rate falls to 3·6 per cent.

The diagnosis of the medical attendant before admission was revised in 194 instances, or 14·5 per cent. of the cases discharged. Contact and bacteriological cases are included in this number.

The following table has been brought up to date, showing the Annual Fatality Rates for the three principal diseases treated.

YEAR.	ENTERIC FEVER.		SCARLET FEVER.		DIPHTHERIA.	
	Cases discharged.	Case Mortality per cent.	Cases discharged.	Case Mortality per cent.	Cases discharged.	Case Mortality per cent.
1898	178	12·9	308	3·8	11	0·0
1899	222	10·3	554	3·6	19	21·0
1900	148	9·4	607	2·4	18	11·1
1901	230	9·1	662	3·3	27	25·9
1902	202	12·3	451	4·4	12	16·6
1903	148	13·5	183	2·2	15	20·0
1904	101	12·8	178	3·9	53	16·9
1905	263	8·3	114	4·3	50	16·0
1906	211	9·0	245	1·6	55	20·0
1907	100	9·0	322	2·7	208	7·6
1908	120	10·8	433	1·8	187	9·0
*1909	102	2·9	805	2·9	145	11·0
*1910	122	4·0	694	2·3	248	8·8
†1911	89	12·3	635	2·8	250	7·2
†1912	68	14·7	770	2·8	151	9·9

\* Includes contact cases.

† Excludes „ „

All cases of wrong diagnosis are excluded from the above Table.

The fatality rate of scarlet fever remains as it was last year. In regard to enteric fever and diphtheria, the decrease in the number of cases discharged, and the corresponding increase in the fatality rates, is explained by the more rigorous exclusion of what may be called the "Bacteriological Cases."

Average fatality rates for the period 1898 to 1912 are:—

Enteric fever.	Scarlet fever.	Diphtheria.
10·2	2·9	10·3

Request for removal of patients to hospital was made by the medical practitioner in attendance in 47·8 per cent. of cases, by the sanitary inspector in 46·7 per cent., and by the Public Health Office in 5·5 per cent. of cases.

Blantyre Hospital received 24 local cases of scarlet fever between the beginning of September and the end of the year, to relieve the congestion in the scarlet fever pavilions.

### Scarlet Fever.

There were in hospital on January 1st, 1912, 93 cases of scarlet fever. During the year 888 cases of that disease were admitted notified as such. Of these, 105 were found to be suffering from other diseases, or were classified as "doubtful."

Of these 105, 8 contracted scarlet fever during their residence in hospital, while 3 cases notified as diphtheria were really cases of scarlet fever.

Thus, there were 887 genuine cases of scarlet fever under treatment during the year, and of these 748 were discharged well, 22 died, and 117 were remaining in hospital at the end of the year.

REMOVAL TO HOSPITAL was carried out in 91·8 per cent. of cases in the first week of illness, in 4·2 per cent. in the second week, and in 3·9 per cent. during the third week of illness and later.

The AVERAGE DURATION OF RESIDENCE of all cases discharged was 45·06 days, of recovered cases 46·6 days, and of fatal cases 15·3 days.

The following table has been drawn up to show after what period of residence the 748 recovered cases were discharged. It will be observed that 40·2 per cent. of the cases were discharged during the sixth week:—

Week of discharge.	No. of days in residence when discharged.							No. of cases in each day.							No. of cases in each week.
Under fifth, - -	.....							.....							20
Fifth, - - -	29	30	31	32	33	34	35	2	...	5	13	3	8	11	42
Sixth, - - -	36	37	38	39	40	41	42	23	33	30	52	61	54	48	301
Seventh, - - -	43	44	45	46	47	48	49	47	43	26	22	25	6	17	186
Eighth, - - -	50	51	52	53	54	55	56	21	17	8	11	13	8	6	84
Ninth, - - -	57	58	59	60	61	62	63	4	4	8	5	16	8	2	47
Tenth, - - -	64	65	66	67	68	69	70	6	4	...	2	2	4	4	22
Over ten weeks, -	.....							.....							46
Total No. of cases,	.....							.....							748

THE FATALITY RATE, as calculated on the discharges, was 2·8 per cent.

TYPE OF THE DISEASE.—681, or 88·4 per cent. of the cases discharged, were classified as mild; 43, or 5·5 per cent., as moderately severe; and 46, or 6 per cent., as very severe.

The FATAL CASES comprised 9 males and 13 females. The average age of the 22 fatal cases was  $4\frac{1}{2}$  years. The youngest was 2, and the oldest 9 years of age.

The average duration of illness on admission was 3 days. 2 cases were in the first day of the disease, and 1 in the seventh. In the first quarter of the year 6 deaths took place; in the second, 6; in the third, 5; and in the fourth, 5.

Eleven of the fatal cases were of a toxic nature, and 9 were septic. All the fatal cases, save 3, were severe from the onset. Of these three, 1 developed tubercular meningitis during the convalescence of a mild attack of scarlet fever, 1 developed a severe secondary attack of scarlet fever, and 1 contracted a severe attack in hospital.

The disease in 3 of the fatal cases, all children under 4 years of age, was complicated with broncho-pneumonia. One had severe gastro-enteritis. Five cases received diphtheria antitoxin, and one anti-streptococcic serum.

Two cases in which the scarlet fever toxin had apparently stirred up a latent tubercular lesion are worthy of note.

CASE I.—Male, aet. 5, admitted on third day of illness, suffering from a mild attack of scarlatina. He got rapidly well, and was allowed up at the end of the third week of residence. In the middle of the sixth week, just a few days before he would have been dismissed in the ordinary course of events, the temperature went up to  $99^{\circ}$ , and he was put back to bed. For the next two days the temperature swung between  $98.4^{\circ}$  and  $99.8^{\circ}$ , and the child got very listless. During the next week the temperature kept at a higher level,  $101^{\circ}$  to  $102^{\circ}$ . The drowsiness deepened, and the child could only be roused with difficulty. Squint and inequality of the pupils developed. There was never any muscular rigidity at any time. On two occasions lumbar puncture was performed, and 20 c.c. and 15 c.c. of cerebro-spinal fluid were drawn off. The fluid contained a great excess of mononuclear leucocytes. Tubercle bacilli were also found. The coma increased, and the child got extremely emaciated. Death occurred at the end of 9th week of residence, or  $3\frac{1}{2}$  weeks after the initial rise of temperature. No signs of tuberculosis in the chest or the abdomen were detected by physical examination. On the mother's side there was a well-marked family history of tuberculosis. No *post-mortem* was allowed.

CASE II.—Male, aet. 4, admitted on the third day of illness, suffering from a moderately severe attack of scarlatina. For two weeks he was very ill, both ears were discharging, and the glands on the right side of neck had to be opened. At the end of the third week the temperature had come down to normal. For two weeks patient progressed favourably. During the sixth week of residence, scattered rale were detected all over the left side. At end of the seventh week the whole side was quite dull, and patient was getting much thinner. He died at the end of the eighth week of residence in hospital.

*Post-mortem*.—The whole of left lung was solid, and in the stage of grey hepatisation. At the base there were many small areas of softening. Many large tuberculous glands were found in the mediastinum, some softened, others calcareous.

CORRECTED DIAGNOSIS.—Of the cases notified as scarlet fever, 105, or 11.8 per cent., were wrongly diagnosed. This figure includes 22 cases classed as "doubtful." Those latter were cases with a history suspicious of scarlet fever, but where no signs or symptoms occurred in hospital to determine whether the case had really been one of scarlet fever or not.

Forty-eight were considered not to have had any disease. The admission of such cases when the wards are busy puts an undue strain on the Staff, in trying to prevent them being infected in hospital.

Eight of those cases took scarlet fever in hospital, and one died.

The amended diagnoses were as follows:—Chickenpox, 6; sore throat, 6; measles, 3; tonsillitis, 3; adenitis, 1; bronchitis, 1; abscess, 1; pyuria, 1; rhinitis, 1; debility, 1; whooping-cough, 1.

COMPLICATIONS.—In 14 cases, organic disease of the mitral valve was associated with the disease. Twenty-nine cases suffered from functional derangement of the heart.

*Pulmonary Complications.*—Lobar pneumonia of a tubercular nature occurred in one case. Three cases died from broncho-pneumonia. Two others had bronchitis, one of whom died.

*Genito-Urinary Complications.*—Acute nephritis complicated 5 cases. Albuminuria of a transient nature was noted in 15 cases. The albuminuria was chiefly present in the acute stage of the fever.

*Nervous Complications.*—In 4 cases, well-marked delirium was present. In 2 cases tubercular meningitis was apparently set up by the scarlet fever.

One case, already noted, died in hospital. The other was taken home, and died 2 weeks later.

*Ear Complications.*—In 84 cases, or 10·9 per cent., otitis media developed. Six cases who died had severe otitis media purulenta.

Mastoid abscesses developed in 2 cases, which, after a free incision, healed up without requiring the radical mastoid operation.

*Rhinorrhœa* was present in 74 cases, or 9·6 per cent.

*Epistaxis* was mild in 1 case.

*Laryngitis* was present in 1 case.

*Eye Complications.*—Conjunctivitis occurred in 7 cases, and blepharitis in two.

*Rheumatic Complications.*—In 18 cases, joint pains of a transient nature were present.

Only in 5 cases was true rheumatism present.

Chorea occurred in 2 cases, and erythema nodosum in one.

*Suppurative cervical adenitis*, requiring incision, occurred in 10 cases.

Non-suppurative cervical adenitis was present in 204 cases.

*Skin diseases.*—Eczema, 11; urticaria, 3; erysipelas, 2.

*Other conditions* present on admission not the result of scarlet fever :—

Exophthalmic goitre, 1.  
 Hip joint disease, 1.  
 Otitis media chronica, 1.  
 Pyæmia, 1.  
 Rickets, 1.  
 Tinea, 2.  
 Scabies, 1.  
 Psoriasis, 3.

The following tables show the week of illness and age periods respectively at which the complications occurred :—

AGE.	Cervical Adenitis.		Otitis Media Purulenta.	Cardiac Complications.		Rhinitis.	Joint Pains.	True Rheumatism.	Nephritis.
	Sup-purative.	Non-sup-purative.		Organic.	Func-tional.				
Under 1 Year, ...	...	...	...	...	...	...	...	...	...
1 - 2 Years, ...	...	8	6	...	...	6	...	...	...
- 3 ,, ...	...	12	9	...	...	7	...	...	...
- 4 ,, ...	2	28	14	1	1	15	...	...	...
- 5 ,, ...	3	20	16	1	2	12	1	...	...
- 6 ,, ...	1	30	14	1	5	12	..	...	2
- 7 ,, ..	2	21	8	2	3	4	2	1	1
- 8 ,, ..	2	18	2	...	4	8	2	...	...
- 9 ,, ..	...	16	9	5	3	3	3	2	...
- 10 ,, ...	...	21	2	...	2	2	1	...	...
- 15 ,, ...	...	28	4	3	8	4	4	...	1
- 20 ,, ...	...	...	...	1	1	...	3	...	1
Over 20 ,, ...	...	2	...	...	...	1	2	2	...
	10	204	84	14	29	74	18	5	5

Week of Occurrence.	Cervical Adenitis.		Otitis Media Purulenta.		Cardiac Complications.		Mastoiditis.	Joint Pains.	Nephritis.
	Sup-purative.	Non-sup-purative.			Organic.	Func-tional.			
			1st Ear.	2nd Ear.					
First, ...	1	155	25	11	12	...	...	6	...
Second, ...	2	25	23	11	...	3	1	4	...
Third, ...	1	14	16	3	...	3	...	3	1
Fourth, ...	3	4	14	2	1	2	1	2	2
Fifth, ...	...	6	3	4	1	12	...	3	2
Sixth, ...	2	...	...	...	...	3	...	...	...
Seventh, ...	...	...	2	1	...	2	...	...	...
Eighth, ...	1	...	...	...	...	4	...	...	...
Over eighth week,	..	...	1	1	...	...	...	...	...
	10	204	84	33	14	29	2	18	5

**MIXED INFECTION.**—All cases of scarlet fever with dirty and suspicious throats were swabbed. Twenty-one were found to have diphtheria bacilli. On an average they received 4,000 units of serum; the five fatal cases, which had antitoxin, got, on an average, 12,000 units.

*Chickenpox.*—Two cases of scarlet fever had chickenpox on admission.

*Whooping Cough.*—Whooping cough and scarlet fever were present in 1 case.

*Measles.*—One case of scarlet fever was incubation measles on admission. Eight cases contracted the disease in hospital.

*German Measles.*—German measles and scarlet fever were present in 1 case.

**RETURN CASES.**—During the year there were dismissed 33 cases which were supposed to have given rise to 45 "Return Cases." Of these 45 cases, 40 were mild, 1 was severe and died in hospital, 2 were treated at home, 1 was doubtful, and another had chickenpox only.

The average duration of residence of the "infecting" cases was 44·7 days, as compared with 46·6 days for the recovered cases, the maximum being 70 days, and the minimum 32 days.

Twenty-six of the 33 "infecting" cases had been perfectly simple cases while in hospital. Four had rhinitis, 2 otitis media, and 1 eczema.

Those 7 cases were apparently normal and free from complication when dismissed.

In 9 cases only was a definite history obtained of a mucous discharge appearing after the patient went home.

The average interval between the primary case going home and the onset of the disease in the secondary case was 10 days.

The shortest was 4 days, and the maximum 1 month.

The time of the year in which the "infecting" cases were discharged is as follows:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
3	3	2	2	1	2	3	3	2	3	2	7

Days elapsing between discharge of "infecting" cases and onset of "return cases":—



First Week.		Second Week.		Third Week.	
Days Elapsing.	Cases.	Days Elapsing.	Cases.	Days Elapsing.	Cases.
1	...	8	3	15	...
2	...	9	1	16	2
3	...	10	4	17	2
4	2	11	1	18	1
5	3	12	3	19	...
6	4	13	...	20	1
7	4	14	1	21	1

The following table summarizes the last five years' figures in this connection :—

	1908.	1909.	1910.	1911.	1912.	Total.
Number of Scarlet Fever patients discharged recovered,	425	781	678	617	748	3,249
Number of presumably infectious cases discharged,...	15	31	32	26	33	137
Infectivity Rate, ... ..	3'5	3'9	4'7	4'2	4'4	4'2
Number of deaths from Scarlet Fever, ... ..	8	24	16	18	22	88
Fatality Rate, ... ..	1'8	2'9	2'3	2'8	2'8	2'7
Average duration in days of the cases discharged, ...	60'7	41'8	50'1	48'3	45'06	...

### Diphtheria.

At the beginning of the year there were in hospital 19 cases of diphtheria, and during the year 193 cases were notified as such.

On observation, however, 53 cases were found not to be suffering from true diphtheria. This figure includes 40 cases with positive swabs only. Post-scarlatinal cases are accounted for under scarlet fever.

There were thus 159 clinical cases of diphtheria treated throughout the year. Of these 136 were discharged well, 15 died, and 8 were in hospital at the end of the year.

REMOVAL TO HOSPITAL was carried out in the first week of illness in 85·4 per cent. of the cases, but 44·3 per cent. were not removed until after the fourth day of illness.

DURATION OF RESIDENCE.—The average duration of residence of all cases discharged was 28·7 days, of recovered cases 32·2 days, and of fatal cases, 6·9 days.

FATALITY RATE.—Calculated on the total discharges, the fatality rate was 9·9 per cent., but excluding 7 cases who died within 24 hours of admission, the fatality rate drops to 5·2 per cent.

FATAL CASES.—Of 151 clinical cases of diphtheria discharged, 15 were deaths, 4 males, and 11 females.

The average age of all fatal cases was 4 years. Eleven were under 5 years of age, and 4 were between 5 and 10 years.

The average day of disease on admission was 5·4 days. None of the fatal cases came under treatment earlier than the third day of illness. Three had been ill 3 days, and 12 from 4 to 11 days.

Only 5 of the 15 cases received antidiphtheritic serum before admission. Two received 4,000 units, and three 2,000 units each.

It is unfortunate that so few of the fatal cases received antitoxin before admission. The hopelessness of treating diphtheria by any other means is exemplified in the following case:—

A girl of 6 years was treated for 5 days for a sore throat by local measures only. It was only when the child was obviously in a dying condition that 2,000 units of antitoxin were given. Next day the patient was sent in to hospital, and expired a few minutes after admission.

The average amount of serum given to fatal cases in hospital was 24,000 units. One case got 42,000 units, and 3 had 36,000 units each.

Four of the fatal cases had tracheotomy performed.

In all the fatal cases the type of the disease was severe. The situation of the membrane was as follows:—

Faucial,	...	...	...	...	...	7 Cases.
Laryngeal,	...	...	...	...	...	5 Cases.
Nasal,	...	...	...	...	...	1 Case.
Laryngeal and nasal,	...	...	...	...	...	2 Cases.

Nine of the fatal cases died of cardiac failure, 4 from toxæmia, and 2 from pneumonia.

Seven cases in all died within 24 hours of admission.

Two cases were moribund on admission and died within 1 hour; 3 died in 12 hours, and 2 lived for 24 hours.

Of the 4 deaths in which tracheotomy was performed, one lived four days, death being due to the trachea and larger bronchial tubes

becoming involved. One case, complicated with pneumonia, lived 24 hours. Two others died from acute cardiac failure 12 hours after the operation.

TRACHEOTOMY was performed in 14 cases of diphtheria, 9 males and 5 females, and in 1 case of measles. Eleven recovered and 4 died. This gives a recovery rate of 71·3 per cent. in diphtheria, and 73·3 per cent. in all cases in which the operation was performed.

The average age of patients operated on was 2·3 years. Three of them were under 18 months, the oldest being 6 years, and the youngest 9 months.

The average duration of residence of recovered tracheotomy cases was 40·4 days.

COMPLICATIONS.—The tracheotomy cases were remarkably free from complications, 3 developed serum rashes of an urticarial nature, 1 had pneumonia, and 2 were dry cases, one of whom recovered. This case was one of measles complicated with acute laryngitis. The mucous membrane of the trachea became dry and leathery. It was only after the administration of large doses of mucus-liquefying drugs and constant attention to the local condition that the tube was able to be removed.

Table showing day of disease in which the operation was performed :—

Probable day of disease,	1	2	3	4	5	6	7	8	9	10	11
Fatal cases, . . .	...	...	2	...	...	...	...	...	...	1	1
Recovered cases, . . .	...	2	3	2	1	...	...	2	...	...	...

The following table gives the age, sex, and result of diphtheria cases operated on :—

AGE.	Number Operated on.		Died.	
	Males.	Females.	Males.	Females.
Under 1, . . . . .	...	1	...	1
1 and under 2, . . . . .	2	1	...	1
2 .. 3, . . . . .	1	...	...	...
3 .. 4, . . . . .	3	2	1	1
4 .. 5, . . . . .	...	1	...	...
6 .. 7, . . . . .	3	...	...	...
Total, . . . . .	9	5	1	3

## TYPE OF DISEASE.

*Mild* cases include those with typical local signs and slight constitutional symptoms of diphtheria. Positive swabs or bacteriological cases are not included. 106 cases were classed as mild. The average amount of serum given in this group was 8,900 units.

The site of the local lesion was as follows:—

Faucial, ... ..	92 Cases.
Laryngeal, ... ..	12 Cases.
Nasal, ... ..	1 Case.
Faucial and laryngeal, ... ..	1 Case.

54·7 per cent. of the mild cases were admitted within 4 days of onset. Eighteen, however, of the total mild cases received serum before admission.

*Complications* in the mild cases were:—V.S. murmur at apex of heart, 1; bronchitis, 2; adenitis, 7; eczema, 2; rhinitis, 4; albuminuria, 1.

In 4 cases paralysis of the palate occurred, and in 1 paralysis of palate and of accommodation.

Other conditions present which had no relation to the attack of diphtheria were:—Abscess of neck, 1; abscess of eyelid, 1; tinea tonsurans, 1; otitis media, 1.

Seven cases developed urticarial rashes after serum.

Three cases developed scarlet fever in hospital.

*Moderately severe cases* numbered 14, including 2 deaths.

The site of membrane was as follows:—

Faucial, ... ..	9 Cases.
Laryngeal, ... ..	2 Cases.
Faucial and nasal, ... ..	2 Cases.
Faucial, nasal, and laryngeal, ... ..	1 Case.

The average amount of serum given was 13,500 units.

*Complications* were:—Adenitis, 5; albuminuria, 1; epistaxis, 1; rhinitis, 2.

Sequelæ were:—

Palatal paralysis, ... ..	1 Case.
Palatal and pharyngeal paralysis, ... ..	1 „
Palatal and ciliary paralysis, ... ..	1 „
Cardiac paralysis, ... ..	1 „
External eye paralysis, ... ..	1 „

The day of illness in which treatment commenced was as follows:—Second day, 4 cases; third day, 2 cases; fourth day, 4 cases; seventh

day, 1 case; eight day, 1 case; ninth day, 1 case; and eleventh day, 1 case.

*Severe Cases*:—31 cases, including 13 fatal cases, are included under this class.

The site of the membrane was as follows:—

Faucial, ... ..	11 Cases.
Laryngeal, ... ..	13 Cases.
Nasal, ... ..	2 Cases.
Faucial and nasal, ... ..	3 Cases.
Nasal and laryngeal, ... ..	1 Case.
Buccal, ... ..	1 Case.

The latter case was a male of 19 years of age, who had been ill 7 days before coming under treatment. The membrane involved the whole of left cheek and side of palate. The constitutional symptoms were severe, and although he did not receive antitoxin until the seventh day, no complications developed. It took six days before the membrane disintegrated. In all, patient received 26,000 units of serum.

*Complications* were:—Adenitis, 5; cardiac V.S. murmur, 1; pneumonia, 2; rhinitis, 2.

Two cases were incubating scarlet fever on admission.

Sequelæ were:—

Palatal paralysis, ... ..	5 Cases.
Palatal and ciliary paralysis, ... ..	1 Case.
Cardiac paralysis, ... ..	6 Cases.

The average amount of serum given was 28,900 units.

The day of illness on which cases came under treatment was as follows:—

First day, ...	3 Cases.	Fourth day, ...	7 Cases.
Second day, ...	6 Cases.	Fifth day, ...	2 Cases.
Third day, ...	7 Cases.	Sixth day, ...	2 Cases.
Seventh day, ...	4 Cases.		

Two cases showing signs of cardiac failure with recovery are worthy of note:—

CASE I. A. F., a female, æt. 2½, came under treatment on 6th day of illness with a profuse purulent nasal discharge. The posterior nares were blocked with thick membrane, which extended on to the pharyngeal wall.

Although this child had been under observation for two days before admission, only 2,000 units of antitoxin had been given.

The child looked quite hopeless, the pulse being 160 per minute, irregular, and thready. The breathing was Cheyne-Stokes in character and numbered 38 per minute. The temperature was 102° F. The cervical glands were much swollen. During the first 4 days the temperature had come down to 98° F., the nasal discharge continued, and palatal paralysis had developed. The pulse, however, was still very irregular and rapid. Within those first 4 days 40,000 units of serum were given.

The convalescence was long and tedious.

CASE II. W. S., *æ*t. 7, admitted on 4th day of disease. A thick, yellowish membrane involved the left tonsil and uvula. The cervical glands were swollen and tender.

He received 12,000 units at once, then 8,000, 8,000, and 4,000 at daily intervals.

On the 8th day of residence, patient vomited several times, pulse got very soft, and the colour was ghastly.

Two days previous to this it was noted that the speech was slightly nasal. For a week he remained in a very precarious condition.

Gradually improvement occurred, but the pulse tended to become irregular on the slightest exertion. Patient was 58 days in hospital.

No serum was given during this stage, only diffusible and cardiac stimulants.

The following table summarises the sites of membrane in the total discharges:—

Site of Membrane.	Mild.		Moderate.		Severe.		TOTAL.	
	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.
Faucial, . . .	92	—	8	1	6	5	106	6
Laryngeal, . . .	12	—	2	—	8	5	22	5
Nasal, . . . .	1	—	—	—	1	1	2	1
Faucial and Laryngeal, .	1	—	—	—	—	—	1	—
Faucial and Nasal,	—	—	2	—	2	1	4	1
Nasal and Laryngeal, .	—	—	—	—	—	1	—	1
Buccal, . . . .	—	—	—	—	1	—	1	—
Faucial, Nasal, and Laryngeal,	—	—	—	1	—	—	—	1
							136	15

DIPHTHERITIC PARALYSIS.—22 cases, or 14·5 per cent. of all clinical cases discharged showed paralysis in one or more forms while in

hospital. 12, or 38·7 per cent. of the severe cases developed paralysis; 5, or 35·7 per cent. of the moderately severe cases, and 5, or 4·9 per cent. of the mild cases, suffered from some form of paralysis.

In looking at the relation of the site of membrane to the number of cases showing paralysis, we see that only 3·7 per cent. of the laryngeal cases showed signs of paralysis; 12·5 per cent. of the faucial, and 40 per cent. of the nasal cases.

Table showing relation of the post-diphtheritic paralysis cases and of the fatal cases to day of disease when antitoxic serum was administered :—

Date of Injection of Serum.	In all Cases.	Paralysis Cases.	Percentage.	Deaths.	Percentage.
First Day, . . . .	1	...	...	...	...
Second Day, . . . .	22	2	9	...	...
Third Day, . . . .	33	4	12·1	3	9
Fourth Day, . . . .	28	6	21·4	4	14·2
Fifth Day, . . . .	27	3	11·1	5	18·5
Sixth Day, . . . .	7	2	28·5	...	...
Seventh Day and after, .	33	5	15·1	3	9

The following table shows the relative frequency of each form of paralysis, with date of onset :—

Week of Onset.	Palatal.	Ciliary.	Ext. Ocular.	Palatal and Ciliary.	Palatal and Pharyngeal.	Cardiac.
1	1	—	—	—	—	2
2	4	—	—	1	—	4
3	3	—	1	1	—	1
4	—	—	—	1	—	—
5	—	—	—	—	1	—
6	2	—	—	—	—	—
Total,	10	—	1	3	1	7
Percentage Frequency, )	6·6	—	·6	1·9	·6	4·6

RETURN CASE.—M.S., a female, æt. 13 months, was in hospital 27 days. She was a contact case, and was sent to hospital on account of a positive swab. Bacteriological examination of the throat before

dismissal was negative. The presumably "return case" was a brother, who sickened 6 days after the return home of the sister.

**CORRECTED DIAGNOSIS.**—In 13 cases the diagnosis was amended as follows:—pneumonia, 4; suppurative adenitis, 1; sore throat, 1; tonsillitis, 1; scarlet fever, 3; nil, 3.

Two of the pneumonias were admitted in the terminal stage, and died shortly after admission. The diagnoses were verified by *post-mortem* examination.

40 cases were sent into hospital as diphtheria on the strength of a positive swab. Some of them were associated with other cases of true diphtheria, others were not, and none exhibited symptoms of the disease.

**TREATMENT.**—In diphtheria anti-toxin we have an absolute specific in the treatment of diphtheria. It is an unfortunate fact that only 33 cases, or 11·9 per cent. of the cases notified, received antitoxin before admission to hospital. It is perfectly unjustifiable to wait for a bacteriological result in a clinical case of diphtheria before giving serum.

All cases of diphtheria, including "positive swabs," and 21 cases of scarlet fever with dirty throats, received serum on admission. Altogether, these cases numbered 225.

During the early part of the year under review, serum prepared by the Lister Institute was used. Owing, however, to the frequency of serum after-effects, a change was made to Burroughs, Wellcome, & Company's concentrated serum. For the latter it is claimed that unpleasant after-effects are diminished. This is apparently borne out by clinical experience.

The concentrated antitoxin contains 1,000 units in 1 c.c. of fluid, compared with 2·5 c.c. in the unconcentrated serum. This considerable diminution in the amount of fluid is of value where a large dose is required.

Of 40 cases that were treated with Lister Institute serum, 8 or 20 per cent. exhibited after-effects to a greater or less extent. The average amount given was 12,000 units; the greatest dose being 24,000 units, and the smallest 4,000 units. Five of the cases were mild faucial, 2 severe laryngeal, and 1 mild laryngeal. Nine days was the average interval between the administration of the serum and the appearances of symptoms. In 1 case, however, only 4 days intervened.

Rashes appeared once in 6 cases, and on two separate days in 2 cases. Urticarial rashes were present in 6 cases. The irregular blotches involved trunk and arms, but were not accompanied by much itching.

In 1 case a morbilliform rash had some resemblance to measles, but the rash did not involve the face. In the other case an urticarial



rash appeared on the ninth day, unaccompanied by constitutional symptoms. Three days later, however, a well-marked morbilliform rash appeared, accompanied by a temperature of  $102^{\circ}$ , considerable itching, and marked joint pains. No rise of temperature occurred in 4 cases, in 1 case it only rose  $1^{\circ}$ . The other three ranged from  $101.6^{\circ}$  to  $103^{\circ}$ .

Burroughs, Wellcome, & Company's concentrated serum was injected in 185 cases. Of these, 13, or 7 per cent., showed some antitoxic sequelæ. The average amount of this serum given was 6,900 units, the largest dose being 42,000 units, and the smallest 4,000.

The types of cases showing antitoxic sequelæ were as follows:—mild faucial, 4; mild laryngeal, 1; severe laryngeal, 1; and 7 positive swabs. The rashes were urticarial in 12 of the cases. In 8 of them it was extensive in distribution, itchy, and accompanied by a moderate rise of temperature.

A severe laryngeal case received 24,000 units. On the 10th day after the first injection the temperature rose to  $102^{\circ}$ , and an evanescent itchy urticarial rash appeared all over. The wrist and ankle joints were swollen and painful. In another case albuminuria remained for 3 days.

The following table gives a summary of the serum after-effects in the 13 cases:—

Patient.	Type of Disease.	Site of Membrane.	Serum given.	Symptoms appeared in	Temperature.	Type of Rash, etc.
A. B.,	Severe	Laryngeal	Units. 24,000	10 days	$102^{\circ}$	Urticarial itchy, joint pains.
M. M.,	Mild	Faucial	8,000	8 "	$99^{\circ}$	Urticarial, exten- sive.
G. P.,	"	"	10,000	9 "	$99.6^{\circ}$	Urticarial, itchy.
J. T.,	"	Laryngeal	8,000	9 "	$99.2^{\circ}$	" "
W. M'C.	"	Faucial	4,000	9 "	$98.0^{\circ}$	" slight.
A. B.,	"	"	8,000	7 "	$98.4^{\circ}$	Morbilliform.
M. A.,	Swab	"	4,000	9 "	$98.2^{\circ}$	Urticarial, slight.
A. D.,	"	"	4,000	9 "	$98^{\circ}$	" "
R. C.	"	"	4,000	9 "	$98^{\circ}$	" "
A. C.,	"	"	4,000	9 "	$98.4^{\circ}$	" "
M. S.,	"	"	4,000	9 "	$98.6^{\circ}$	" "
E. C.,	"	"	4,000	9 "	$100^{\circ}$	" severe, albuminuria.
J. C.,	"	"	4,000	9 "	$98^{\circ}$	Urticarial, slight.

**Enteric Fever.**

There were 16 cases of enteric fever in hospital at the beginning of the year. During the year, 106 cases were admitted notified as such, making 122 cases under treatment. Of these, however, 35 (including 20 "contact" cases) were found not to be suffering from enteric fever. The total number, therefore, of genuine clinical cases treated during the year was 87. Of these, 58 were discharged well, 10 died, and 19 were in hospital at the end of the year.

The following table has been brought up to date:—

YEAR.	PERCENTAGE OF PATIENTS DISCHARGED.			CASE MORTALITY PER CENT.	
	Under 5 years of age.	Under 10 years of age.	Under 15 years of age.	Under 15 years of age.	15 years of age and over.
1898,	3·3	19·0	37·0	3·0	18·7
1899,	5·7	25·3	43·1	6·1	14·0
1900,	10·1	30·4	46·6	1·4	18·8
1901,	13·0	39·5	53·5	2·4	16·8
1902,	7·1	27·6	39·5	4·8	18·1
1903,	6·7	35·9	53·6	11·3	18·4
1904,	7·9	30·7	50·5	11·7	14·0
1905,	11·8	28·9	46·2	4·9	11·3
1906,	6·16	26·0	42·1	5·6	11·4
1907,	12·0	26·0	37·0	5·4	11·1
1908,	12·2	27·3	41·5	6·4	13·8
1909,	8·8	35·2	54·9	...	6·5
1910,	6·5	29·5	52·4	1·5	6·8
1911,	6·7	30·3	43·8	...	28·2
1912,	4·0	20·0	32·0	2·0	8·0

REMOVAL TO HOSPITAL was carried out during the first week in 15 cases, or 22 per cent.; during the second week in 40 cases, or 58·8 per cent.; during the third week in 9 cases, or 13·2 per cent.; and during the fourth week and later in 4 cases, or 5·8 per cent.

THE AVERAGE DURATION OF RESIDENCE of all cases discharged was 51·4 days; of recovered cases, 55·7 days; and of fatal cases, 26·3 days.

FATALITY RATE.—A fatal issue resulted in 10 cases, giving a fatality rate, calculated on the discharges, of 14·7 per cent.

The following table gives the age, sex, and cause of death of the fatal cases:—

Age.	Sex.		Days in Hospital.	Day of Disease on Admission.	Type of Disease.	Cause of Death.
	M.	F.				
9	...	1	5	14	Severe	Perforation of gall bladder.
10	...	1	16	13	"	Perforation of intestine.
20	...	1	99	11	"	Heart and kidney disease.
23	1	...	21	12	"	Toxæmia.
23	1	...	20	4	"	Toxæmia.
27	1	...	55	12	Mild	Relapse, perforation.
30	1	...	10	6	Severe	Hæmorrhage.
31	...	1	9	24	"	Pneumonia.
32	...	1	24	7	"	Toxæmia.
41	1	..	4	21	"	Pneumonia.

Three cases of interest :—

(1) PERFORATION DURING A RELAPSE.

A male, æt. 27, was admitted in the early stage of a mild attack of enteric fever. He went through a typical attack showing most of the signs of the disease, but without much temperature. Although he looked and felt ill, the temperature only rose above normal on six occasions within five weeks. The pulse remained slow.

During the sixth week of residence, when he had been on ordinary diet for one week, the temperature began to ascend. A typical relapse ensued, lasting eight days. At the end of that period the temperature dropped from 102° to 98°. For the next five days it ranged between 99° and 100°, and the pulse was never above 100 per minute. Slight epigastric pain developed, but there was no tenderness, and the abdomen moved freely on respiration. Forty-eight hours before death occurred, the abdomen became greatly distended, and the patient vomited occasionally. Up to the time of death, abdominal pain was of the mildest character.

The points of special interest in this case are :—

- (1) The occurrence of a typical mild attack of enteric fever, with temperature never going above 99 degrees F.
- (2) The occurrence of perforation during a relapse.
- (3) The presence of general peritonitis without tenderness, and with very little pain.

(2) PERFORATION OF THE INTESTINE IN A YOUNG CHILD.

A female, æt. 10, was admitted to hospital on the thirteenth day of illness, suffering from a severe attack of enteric fever.

The child was thin and ill-nourished, and diarrhœa was troublesome. For eleven days the patient progressed favourably, the temperature ranging between 99° F. and 102° F.; the pulse, however, kept fairly rapid, 140 per minute.

On the twelfth day, abdominal pain and tenderness developed, and, although the pulse did not alter much, the temperature dropped to 97°. The patient was operated on within a few hours of abdominal pain developing, and two perforations were discovered, 7 inches and 9 inches respectively, above the ileo-caecal valve in the ileum.

Four days later the patient died.

### (3) PERFORATION OF GALL BLADDER.

A girl, *æ*t. 8 years, came under observation on fourteenth day of disease. The child was restless and of a very bad colour, temperature 101° F., pulse, 156 per minute. The abdomen was full, moved with respiration, gurgling was present in right iliac fossa, and there was some pain in this region.

During the next 3 days the temperature gradually came down to 98·4°, and pulse to 120 per minute. The colour still remained poor.

Next day the temperature was 101°, and pulse 140. The abdomen moved with respiration, and there was slight tenderness. As the abdominal pain was getting worse, it was determined to open the abdomen.

The intestines were inflamed, but no perforation was discovered. The abdomen contained some dark coloured fluid, free from smell.

As the patient was in a grave condition, a drainage was put in, and child removed to bed.

Next day death occurred.

*Post-mortem.*—A pin-hole perforation was detected in the gall bladder, through which the bile was oozing in drops. On opening up the gall bladder, the mucous membrane to the extent of about a sixpenny piece was ulcerated through to the peritoneal covering. The perforation was in the centre of the floor of the ulcer.

Typhoid bacilli were present in the bile, and were also isolated from the spleen.

**TYPE OF DISEASE.**—Twenty-seven cases, presenting slight constitutional disturbance, were classed as mild, 15 were of moderate severity, and in 26 instances the attack was severe.

Table showing type of disease and time of admission to hospital:—

WEEK OF ILLNESS.	MILD.		MODERATE.		SEVERE.				Total Cases and Week of Illness.	
					Recovered.		Died.			
	Number of Cases.	Per-centage.	Number of Cases.	Per-centage.	Number of Cases.	Per-centage.	Number of Cases.	Per-centage.	Number of Cases.	Per-centage.
1st	3	11·1	9	60	1	6·2	2	20	15	22
2nd	16	59·2	6	40	12	7·5	6	60	40	58·8
3rd	5	18·5	...	...	3	18·7	1	10	9	13·2
4th	3	11·1	...	...	...	...	1	10	4	5·8
Total,	27	39·7	15	22	16	23·5	10	14·7	68	

The majority of the cases came under observation in the second week of the disease. It is interesting, however, to note that 9, or 60 per cent., of the moderately severe cases were sent to hospital during the first week.

The number of mild and severe cases were about equal, while the moderate cases were about 16 per cent. less.

**COMPLICATIONS.—Gastro-intestinal.**—Perforation of the intestine occurred in two cases, and of the gall bladder in one case. The details are given above.

Intestinal hæmorrhage complicated 5 cases, 1 of which died.

Diarrhœa of a severe nature was present only in 7 cases.

In 24 instances, constipation was of a troublesome nature. It is remarkable how frequently this condition is present in well-marked clinical cases.

**Pulmonary.**—Pneumonia was present in 5 cases, 2 of whom died. One of the latter was a hypostatic pneumonia, the other 4 were of the lobar variety.

Bronchitis was troublesome in 5 cases.

Phthisis pulmonalis was detected in an early stage in 1 case of severe enteric. This patient was sent to a sanatorium, where she made excellent progress.

**Circulatory System.**—A female, æt. 19, came under observation, suffering from a severe attack of enteric fever. At the same time, she had a well-marked nephritis. Although in the course of 6 weeks, the signs and symptoms of enteric fever had subsided, the kidney condition never improved.

Later the heart became secondarily involved, and the patient died from cardiac dilatation at the end of fourteen weeks.

**Nervous System.**—In 1 case marked delirium was present.

In another case, a male, æt. 5, meningeal symptoms were suggestive of meningitis. Marked relief followed a lumbar puncture, and the patient got on well after this operation.

Other conditions present were:—Pregnancy 1, otitis media 2, rhinitis 1, psoriasis 1.

Bacilluria was present in 4 cases. In 2 cases the organism was *B. typhosus*, and in the other 2 was *B. coli communis*.

RELAPSES occurred in 3 cases, or 4.4 per cent. of the discharges.

The type of disease associated with the relapses was severe in 2 cases, and mild in 1 case, which afterwards died.

(1) A male, æt. 8, admitted suffering from a severe attack. He is said to have been ill for 3 weeks previously. However, it was other 3 weeks before the temperature settled. For 13 days he went on nicely, when temperature began gradually to ascend. In five days it had reached 103° F. In 14 days the temperature was normal, and patient made a good recovery.

(2) This case was one that perforated and died. The details are given above.

(3) A female, æt. 16 years, was a severe case in second week of illness. In three weeks the temperature was normal, and remained so for seven days. Then a relapse occurred of eight days' duration. Patient made a good recovery.

**CORRECTED DIAGNOSIS.**—Twenty cases were notified as enteric fever, on account of a positive Widal reaction. As none of them showed clinical signs of the disease, they are not classified with the undoubted enterics.

Fifteen other cases (including 2 deaths) were found to be suffering from other diseases.

The altered diagnoses were as follows:—

	Cases.	Deaths.
Ædema of brain, ... ..	—	1
Ulcerative endocarditis, ... ..	—	1
Lobar pneumonia, ... ..	3	—
Cirrhosis of liver, ... ..	1	—
Gastro-enteritis, ... ..	1	—
Pyelitis, ... ..	1	—
Influenza, ... ..	1	—
Debility, ... ..	1	—
Constipation, ... ..	2	—
Nil, ... ..	3	—

The differential diagnoses of two of the above cases was of considerable interest.

*Ædema of Brain.*—A male, æt. 28, had been ill 20 days. The history was that of true influenza affecting the central nervous system.

During the four days he lived, there were signs of cerebral softening, without localising symptoms. The temperature was normal.

*Post-mortem.*—The meninges were œdematous, the ventricles distended, and the convolutions flattened out. The brain tissue was very soft and friable.

There were no signs of tuberculosis, or other pyogenic infection.

*Ulcerative Endocarditis.*—A female, æt. 10, complained of general pains, sickness, and diarrhœa for one month. When patient came under observation she was pale, thin, and suffered from diarrhœa.

The heart was considerably enlarged to the left. At the apex, a well-marked V.S. murmur was present.

Blood contained 2,500,000 erythrocytes, 10,800 leucocytes, and was sterile.

Urinary contents were:—Albumen, large quantity; blood, less; casts of hyaline and granular variety.

Spleen was much enlarged.

Temperature was 101° F.

In spite of treatment, the heart condition did not improve, the temperature swung between 100° and 102° F, and patient got gradually thinner and weaker. At the end of four weeks she died. The Widal reaction was persistently negative.

*Post-mortem.*—The heart was large and flabby. Attached to one cusp of the mitral valve was a piece of granulation tissue, about the size of a large marble. The edge of the other was much ulcerated.

The spleen was much enlarged, and contained many old infarctions.

The kidneys were small, the capsules adherent, and they were also studded with healed infarctions.

The brain, intestines, lungs, and liver were normal.

### Puerperal Fever.

During the year 9 cases were admitted notified as puerperal fever. Of these, 3 recovered, 5 died, and 1 was still in hospital at the end of the year.

The following is a summary of the cases discharged:—

Age.	Day of Disease.	Pregnancy.	Person in Attendance.	Days in Hospital.	Complications at Labour.	Complications.	Result.
-36	9	3	Midwife	23	Nil	Pelvic abscess	Well
-38	9	1	Doctor	27	Twins	Sapraemia	„
-41	10	10	Midwife	38	Nil	Pelvic abscess	„
-20	21	2	Doctor	17	Instruments	Septicæmia embolus	Died
-24	8	2	Neighbour	4	Nil	Septicæmia	„
-24	9	4	Doctor	2	Twins	„	„
-29	5	6	Midwife	2	Abortion	„	„
-39	17	5	„	9	„	„	„

It is unfortunate that the fatality rate, 62·5 per cent., remains so high for this disease. This is due, firstly, to the late state at which the cases are sent to hospital, and, secondly, to the severe character of the disease. All the fatal cases were of the septicæmic variety. In 5 of the deaths, persons other than the medical practitioner were in attendance. Two of the cases were miscarriages, and another a case of twins, where difficulty was experienced in the delivery.

The average day of illness, when admitted, in all cases was 11 days, in recovered cases 9·3, and in fatal cases 12 days.

In all cases the average age was 30 years.

The duration of residence of all cases was, on an average, 15·2 days, of recovered cases, 29·3 days, and of fatal cases, 6·8 days.

**Erysipelas.**

Eleven cases of erysipelas were treated throughout the year. They all recovered.

Seven were males, and 4 females.

The following table summarises the cases:—

Age.	Sex.	Situation of Lesion.	Type.	Day of Disease.	Days in Hospital.	Complications.
38	F.	Face	Mild	11	12	
42	F.	„	„	7	17	
46	F.	„	„	5	22	Dacryo-cystitis.
57	F.	„	„	9	11	
29	M.	„	„	11	27	Abscess, eyebrow.
30	M.	Face and Head	Moderate	7	20	
41	M.	Arm	Severe	7	179	Cellulitis.
41	M.	Face	Mild	4	8	
45	M.	Face and Head	„	7	26	Conjunctivitis.
48	M.	Face	„	7	8	
52	M.	„	„	8	17	

The face was affected in 8 cases, the face and head in 2 cases, and the arm in 1 case.

The type of disease was:—Mild, 9; moderate, 1; and severe, 1.

The average age of all cases affected was 42·6 years. 7·4 days was the average day of disease on admission to hospital.

The average duration of residence of all cases was 31·5 days. This long average duration of residence is due to one severe case, which was in hospital an abnormally long period. If this case be deducted, the average duration of residence is only 16·8 days.

H. A., a male, *æt.* 41, was admitted with an extensive erysipelas of whole of left arm and hand, the result of a slight burn.

A few days after admission, suppuration of the subcutaneous tissue of whole arm occurred. Under chloroform, a number of large incisions were made, and a considerable quantity of streptococcal pus evacuated. Latterly the whole subcutaneous tissue and a considerable part of skin sloughed away.

For many weeks the patient was seriously ill. The arm and hand took a long time to heal up, and some loss of movement resulted, due to involvement of the extensor tendons. The stiffness, however, was infinitesimal when compared with the amount of skin which was



destroyed. The patient went home, after a residence of 179 days, with a useful arm, and quite fit for his usual occupation.

### **Cerebro-Spinal Meningitis.**

One true case of cerebro-spinal meningitis was treated; another suspected case proved to be tubercular meningitis.

The true case was a male of six months who had been ill for seven days. He exhibited all the signs of meningitis. A lumbar puncture proved it to be of meningococcal origin.

In spite of the intradural injection of anti-meningococcal serum, the child died in nine days.

### **Measles.**

In addition to the 8 scarlet fever cases who contracted measles in hospital, 6 cases, 3 males and 3 females, were treated during the year.

The average duration of residence was 38.3 days.

With one exception, the patients were all under 5 years of age. That exception was a female of 27 years of age.

In two cases troublesome conjunctivitis occurred.

A boy, *æ*t. 4 years, developed such acute laryngitis that tracheotomy had to be performed. Contrary to the usual result in such cases, the case recovered.

Another boy, *æ*t. 5, had acute mastoid disease, for which the radical operation had to be performed. He also made a good recovery.

### **Tuberculosis.**

Owing partly to the demand for accommodation for other diseases, and partly to the fact that abundant provision for such cases was found elsewhere, few cases of pulmonary tuberculosis were admitted.

However, at the end of the year, a new departure, of far-reaching importance, was made, namely that of admitting and treating cases of tuberculosis other than pulmonary.

At the beginning of the present year (1913), the Local Government Board's approval of setting apart Pavilion 5 for this purpose was obtained.

The problem of treating surgical tuberculosis is one of considerable importance. Such cases, unless the operative procedure is of an urgent nature, have the greatest difficulty in being admitted to a general hospital. Their discharging sinuses preclude them from convalescent homes, and their lot, consequently, if the home conditions are bad, is not an enviable one.

As a considerable proportion of the cases of surgical tuberculosis are cases of tubercle of joints and bone, the principles on which treatment is based are these:—

- (1) Complete rest.
- (2) Abundant nourishing food.
- (3) Fresh air.
- (4) Sunlight.

In addition to the above, tuberculin may advantageously be added in certain cases.

Pavilion 5, being one of the smaller ones, can only accommodate 15 children, and, as the progress of tubercular cases is slow, a large number of cases cannot be treated in a year.

However, with a larger pavilion and open-air verandahs, excellent results should follow.

The cases of pulmonary tuberculosis admitted during the year were 5 in number, including a re-admission.

One case was in residence at the end of the year.

I. A female, *æt.* 20, had had pneumonia four years before. For nine weeks previous to admission, she had been "run down." There was a slight cough and spit, sweating at night, and hoarseness. The source of infection was not apparent.

Previous to the attack of pneumonia, the general health had been good. Her occupation, a dairymaid on a well-conducted home farm, was a healthy one.

With the exception of her father, who probably died of "fibroid phthisis," all her relations were healthy.

When she came into hospital, a considerable area of the left lung showed evidence of involvement. The sputum contained few tubercle bacilli.

Within a few weeks, the whole of the left side was affected, and the upper part of right lung also.

At the end of seven weeks, the patient was transferred to Shotts Hospital. She was there for three months, but made no progress; indeed, she came back worse.

The whole of the chest was now extensively involved, and the sputum contained abundant tubercle bacilli.

The patient got gradually worse, and died seven weeks after re-admission.

II. A male, *æt.* 32, remained seven days in hospital before being transferred to Shotts Sanatorium. His condition was advanced. Both upper lobes were extensively involved.

III. A male, *æt.* 34, was a case of advanced phthisis, with sacro-iliac disease. He had been in Glasgow Royal Infirmary, where several operations had been performed.

When he came under observation, there was a large psoas abscess, which was secondarily infected with streptococci. As is usual in those cases, the progress was rapid. While in hospital, the psoas sheath was drained through the lumbar region. The lung condition also advanced rapidly, and patient died after a residence of 24 days.

## TUBERCULOSIS OTHER THAN PULMONARY ADMITTED IN 1912.

Name.	Age.	Sex.	Disease.	Result.
Mrs. W.	41	F.	Bone sinuses	Improved.
P. S.	17	M.	Cervical adenitis	Improved.
P. S.	27	M.	T. B. epididymitis	Improved, testicle removed.
P. E.	17	M.	Lupus of ear	Improved, ulcer healed.
A. B.	4	M.	Tubercular osteomyelitis	Remaining in hospital.
E. G.	16	M.	Lupus of neck	" "
P. S.	17	M.	Cervical adenitis	" "
W.M.	33	M.	T.B. of great trochanter	" "
F. C.	35	M.	Psoas abscess	" "
M. F.	21	M.	T.B. of spine	" "
S. R.	5	M.	Cervical adenitis	" "
J. C.	6	M.	" "	" "
O. Q.	19	M.	T.B. epididymitis	" "

**X-ray Department.**

The X-ray department has now been in operation for two years. A few of the cases will be given in a little more detail than was done the previous year.

Although the installation was primarily fitted up for the treatment of "ringworm of the head," a few cases of other diseases have been treated. The results of these will be noted later.

**TINEA TONSURANS.**—When we recall the structure of the scalp, and picture the course of events after the hairs have become infected with ringworm, we can then understand the obstinacy of the disease, and the futility of rubbing in ointments and applying lotions which never reach the infected broken hair-shafts within the follicles.

It is quite common to get a history of careful and regular treatment with salves for several months, until the medical attendant gets tired of the non-success of his treatment, and the parents begin to object to the expense of the drugs.

Local applications, to be of any use, must be sufficiently strong to produce a dermatitis. The inflammation leads to shedding of hair, and so cure of the ringworm. This process, however, is painful, uncertain, and may lead to scarring and permanent loss of hair.

By means of the X-rays, ringworm of the scalp can be cured effectively, rapidly, and with little risk of permanent baldness, if proper precautions be taken.

Although ringworm does not affect the health, socially, it is of considerable importance. An infected child is debarred from school, and even from associating with other children for months or longer. This point is well exemplified in two boys, whose cases will be given in detail later. One of them had been excluded from school for three years, and the other, aged eleven years, had never been to school on account of the scalp condition. Those two cases were, within a comparatively short period, perfectly cured.

Indeed, it may be said that X-ray treatment has revolutionised the treatment of ringworm of the scalp.

*The Method.*—The essential feature of the X-ray treatment of ringworm is that epilation occurs, and with the hairs the fungus is removed.

The hair is cut short, and three points are taken in the middle line of the scalp, 5 inches apart; the first is  $1\frac{1}{2}$  inches behind the hairy margin on the frontal region. Two other points are chosen, each above and in front of the ear. Those five points are all exactly 5 inches from the adjacent ones.

Attached to the shield holding the focus tube are three wooden pegs, which rest on the scalp about each point as centre. These marks are so placed that when each of them has had an epilating dose, with the pegs at right angles to the head, the whole scalp has had an uniform dose.

The dose is measured by a Sabouraud pastille placed half-way between the anti-cathode and the scalp. The tint of the pastille is compared with that of a standard one every few minutes during the exposure until they match one another. This should occur in about 15 minutes.

At the end of a fortnight the hairs are loose, and in another week the head should be almost bald. In two months new hairs are appearing, and in four months from the time of raying, there should be a good growth.

During the year, 76 cases, 45 males and 31 females, were treated. 13·1 per cent. were under five years of age, 64·4 per cent. were between five and ten years of age, and 22·3 per cent. between ten and fifteen years.

In 61 instances, the whole head was rayed, and in 15 a part only required treatment.

*Source of Infection.*—Careful inquiry was made to try and ascertain the alleged course of infection.

It is remarkable that in 53, or 69·7 per cent of the cases, the source was unknown, or indefinite, and in only 23, or 30 per cent, was a clear history obtained, of contact with another case.

*Duration of Residence.*—Burgh cases, and those residing in the County at no great distance from the hospital, were treated and dismissed in one day. Cases that came from a distance, and also those whose heads required special treatment, were kept for longer periods.

Twenty cases were in residence for three weeks and upwards, on account of the heads not being in a suitable condition for raying.

*The duration of the disease* is shown in the following table:—

Duration in Months.	Number of Cases.	Duration in Months.	Number of Cases.
1 Month	20	8 Months	4
2 Months	8	9 „	4
3 „	8	12 „	9
4 „	5	15 „	1
5 „	3	30 „	1
6 „	6	36 „	1
7 „	3	108 „	1

*Results of treatment* during the past year were excellent. This statement is only made after seeing over 95 per cent. of the cases treated, at intervals of four to six months after exposure to the rays.

These results are most gratifying, as a well-known authority has stated that permanent baldness results in 2 per cent. of cases treated by this method.

*Suitable Cases for X-ray Treatment.*—Although early cases are not debarred from X-ray treatment, the cases in which the treatment is eminently successful are those in which the whole head is affected, in which local applications have been thoroughly tried for several months, and where the head is free from pustulation or ulceration.

Cases in which the scalp is also affected with eczema are apt to suffer from folliculitis after raying, a condition which may spread over the whole head, and on to other parts of the body.

*Suitable Age.*—As patients require to keep perfectly still while undergoing an exposure, it is not advisable to send children under four years of age.

The following are the instructions issued to parents after exposure to the X-rays.

#### CURATIVE TREATMENT OF RINGWORM BY X-RAYS.

As the contagion of ringworm is a microscopic fungus attached to the hairs of the head, the object of treatment by X-rays is to cause the hairs to fall out and thus remove the contagious fungus. This begins about fourteen days after the X-ray treatment, and, when successful, the head should be quite bald in about four weeks after exposure to the X-rays; new hair then begins to grow.

Parents should carefully follow the directions here given in order to ensure a successful result:—

1. The head should be kept covered with a washable linen cap similar to that used for bathing. A clean one should be given daily and the used one boiled in order to destroy infection.

2. During the first two weeks, wash the head thoroughly with soft soap and water not less than twice a week.

3. Obtain from a chemist the following lotion:—Tincture of iodine, one ounce, and methylated spirit, nine ounces. This should be well rubbed into the scalp with a soft brush every night.

4. When the hair begins to fall out, the washing of the head should be done every night, and the scalp rubbed with the tips of the fingers, thus assisting to remove the hair.

Further information may be obtained at the hospital.

*Favus* of the scalp can be treated with X-rays with equally good results.

Three cases were treated in this way, the whole scalp being given an epilating dose.

One case was afterwards seen with an excellent growth of hair. The two others were lost sight of.

*Alopecia Areata*.—As the hair very often grows over the patches which have been bald for months without treatment, it is doubtful if X-ray treatment has much effect.

In 6 cases, small doses (2 H) were given at weekly intervals, stopping when the total number of small doses equalled seventy-five per cent. of a full dose.

The results were mixed. The hair would grow for a time, but would soon fall out. In one case a full epilating dose was given to the whole head with a view of removing all diseased hairs around the patches. In this case there was a distinct improvement, in the others there was none.

One case of Alopecia universalis received a considerable number of short exposures at intervals, without any improvement.

On the whole, it cannot be said that the treatment influenced the cases one way or another.

*Tubercular Ulcer of Jaw.*—This ulcer was situated behind angle of mouth, on the lower jaw. It had been present for eight months, was not painful, but disfiguring.

Small doses of soft X-rays were given at fortnightly intervals. Some improvement resulted at end of four months, but patient left off attending.

*Lupus Vulgaris.*—This was a case of extensive lupus vulgaris of the ear, with a tubercular sinus over the eyebrow, of five years' duration.

After 8 applications, both were entirely healed.

*Rodent Ulcer.*—In this case a small ulcer was situated on the right malar bone, just below the external canthus of the right eye. It had been excised six years before. Two years ago a recurrence took place.

After one large dose of medium rays, the ulcer healed. A month later, as it showed signs of ulcerating again, smaller doses were commenced, at fortnightly intervals.

It is now (May, 1913) almost healed.

*Eczema of Beard.*—Three cases were treated and cured. One was a mild case of four months duration. After four exposures (2 H) the skin was normal.

Two others were of over two years duration. The disfigurement was considerable in both. The anxiety which such a disease occasions is considerable in a young adult. Both cases were under treatment for six months, and although relapses were frequent, they ultimately remained well.

#### Unclassified Diseases.

Two cases of tonsillitis were admitted during the year, 1 case of bursitis of the knee, 1 case of cystitis, 20 cases of scabies, 1 case of septic scalp, 1 case of seborrhœa, and 1 case of carcinoma of the stomach, which was afterwards removed to the Parish Hospital.

One young child was admitted with its mother, and 4 mothers with children.

### Grounds and Buildings.

The hospital grounds (20·13 acres) are now completely enclosed by a substantial six-foot iron fence. Along the northern boundary, a certain amount of filling up had to be carried out, to provide a 33-ft. bank suitable for planting trees, furnishing an effective screen along that aspect. A hedge and several rows of hard-wood and fir trees have been planted along the northern and north-eastern boundaries.

The Airbles Road has now been diverted. The old macadamised road, now within the hospital grounds, has been torn up. The additional ground in front of the hospital has been cleared, and the southern boundary planted with trees and shrubs. Even at this early date, the appearance and privacy of the frontage has been considerably enhanced.

A new carriage-way in front of the Nurses' Home has also been completed (April, 1913). The additional ground on the north, north-east, and south of the hospital has been drained.

**PAVILIONS.**—As the underground workings had effected a considerable amount of damage to the four large pavilions, a large amount of plaster-work required renewal. In many places portions of the walls were re-built. The roofs were also overhauled.

While the wards were dismantled, the opportunity of re-painting them was taken. A great improvement in the lighting of the wards has resulted from the removal of the double glazing.

**ENGINE ROOM.**—At the bi-annual inspection of the boilers and electrical plant, everything was found to be in order. Several defective valves and an exhaust pipe were removed.

**LAUNDRY.**—The walls and ceiling of the laundry were whitewashed in the spring of the year. The *Drying Room* was re-modelled. The steam coils, by which the clothes were stewed rather than dried, were removed. The chamber is now divided into two separate compartments. By means of a heater and a 30-inch fan, hot air of any temperature can be propelled into one or both chambers at the same time. The compartments can also be cooled rapidly by exhausting the hot air, or one may be drying while the other is being emptied.

**Ironing Machine.**—This machine consists of four padded cast-iron rollers, with steel spindles, revolving in cast-iron concave steam-heated beds. The beds are rigidly bolted to side frames. The rollers revolve in sliding bushes, supported on steel spiral springs in the frames, and the pressure is adjusted independently at



each end, by means of screws and hand-wheels, suitably guarded at each end. The machine is driven by belt pulleys, with belt shifting gear, actuated by rods, along back and front. The dimensions of the rollers are 90 inches by 8 inches.

*Collar and Cuff Ironing Machine.*—This machine is arranged to finish collars and cuffs by means of a gas-heated polished roller, 18 ins. long, revolving over a padded table, moved reciprocally across the face of the roller, this table being driven by a revolving drum on the underside, and presses between the roller and drum.

*Gas Irons.*—New gas irons were fitted on to the existing fittings originally put up for that purpose.

All moving belts in the laundry are protected by wire guards.

### **Clinical Laboratory.**

A new microscope, autoclave, and other pieces of apparatus have been supplied for the laboratory.

Now all the bacteriological work, except animal experiments, can be done at the hospital.

A well-equipped clinical laboratory is one of the most important departments of an infectious disease hospital. For there, in addition to the interest of performing the routine work and comparing clinical appearances of diseases with bacteriological results, many minor problems can be investigated at the bed-side which would never be carried out if postponed till some more favourable opportunity.

In connection with the treatment of bacterial diseases, vaccine therapy takes an important place. With a little time, much of the material can be prepared in the clinical laboratory. As an example of the importance of routine examination of specimens, the following may be taken. The excreta of all typhoid patients is examined bacteriologically at least twice before they are dismissed, for typhoid bacilli. Two "urinary carriers" would probably have been dismissed undetected if this routine had not been carried out. Both urines at times were apparently clear to the naked eye, while bacteriologically they contained typhoid bacilli.

Such cases are now recognised as the prolific cause of the spread of enteric fever.

### **Operations during the Year.**

A few major operations and a considerable number of minor ones were performed during the year.

These are given in the following table, with the results:—

Patient.	Age.	Sex.	Operation.	Primary Disease.	Reason for Operation.	Anæsthetic.	Result.
W. K.	1½	M.	Tracheotomy	Diphtheria	Laryngeal obstruction	Nil	Well
P. G.	4	M.	Radical mastoid	Measles	Mastoid abscess	CHCl <sub>3</sub>	Well
E. M'N.	4	F.	Incision	Scarlet	Glandular abscess	Ethyl Cl	Well
N. M'N.	23	F.	Evulsion nail	Septic finger	Abscess	CHCl <sub>3</sub>	Well
L. S.	19	F.	Tonsillotomy	Tonsillitis	Abscess	Cocaine	Well
M. C.	21	F.	Tonsillotomy	Tonsillitis	Abscess	Cocaine	Well
N. T.	21	F.	Incision	Carbuncle	Carbuncle	Ethyl Cl	Well
R. J.	5	M.	Incisions	Scarlatina	Abscesses	Ethyl Cl	Well
A. C.	5	F.	Incisions	Scarlatina	Mastoid abscess	Ethyl Cl	Well
A. O'D.	1	F.	Tracheotomy	Diphtheria	Laryngeal obstruction	Nil	Died
R. J.	6	M.	Tonsillotomy	Scarlatina	Abscess	Cocaine	Well
H. F.	3	M.	Incision	Scarlatina	Abscess	Ethyl Cl	Well
J. C.	6	M.	Tracheotomy	Diphtheria	Laryngeal obstruction	Nil	Well
M. M'C.	24	F.	Incision	Bursitis	Abscess	Ethyl Cl	Well
D. B.	1½	M.	Tracheotomy	Diphtheria	Laryngeal obstruction	CHCl <sub>3</sub>	Well
Mrs. P.	24	F.	Curetting	Puerperal	Exploring	CHCl <sub>3</sub>	Died
Mrs. M.	28	F.	Curetting	Puerperal	Exploring	CHCl <sub>3</sub>	Died
Mrs. H.	28	F.	Curetting	Puerperal	Exploring	CHCl <sub>3</sub>	Died
J. R.	4	M.	Incision	Scarlet	Abscess	Ethyl Cl	Well
J. G.	10	F.	Abdominal section	Enteric	Perforation	CHCl <sub>3</sub>	Died
C. C.	3½	F.	Incision	Scarlet	Abscess	Ethyl Cl	Well
J. L.	2½	F.	Incision	Scarlet	Abscess	Ethyl Cl	Well
C. M.	2½	F.	Tracheotomy	Diphtheria	Laryngeal obstruction	Nil	Died
A. H.	3½	F.	Tracheotomy	Diphtheria	Laryngeal obstruction	CHCl <sub>3</sub>	Well
E. C.	3	F.	Tracheotomy	Diphtheria	Laryngeal obstruction	CHCl <sub>3</sub>	Died
M. P.	5	F.	Opening knee-joint	Scarlet	Septic arthritis	CHCl <sub>3</sub>	Well
M. H.	2	F.	Incision	Scarlet	Abscesses	Ethyl Cl	Well
J. M'Q.	4	M.	Incision	Scarlet	Carbuncle	Ethyl Cl	Well
A. W.	4	M.	Tracheotomy	Measles	Laryngitis	CHCl <sub>3</sub>	Well
A. P.	2	M.	Tracheotomy	Diphtheria	Laryngeal obstruction	CHCl <sub>3</sub>	Well
M. O'H.	4	F.	Tracheotomy	Diphtheria	Laryngeal obstruction	CHCl <sub>3</sub>	Well
R. L.	7	M.	Incision	Diphtheria	Abscess	Ethyl Cl	Well
M. P.	4	F.	Incision	Scarlet	Abscess	Ethyl Cl	Well
M. C.	3	F.	Incision	Scarlet	Abscess	Ethyl Cl	Well
B. B.	3	M.	Tracheotomy	Diphtheria	Laryngeal obstruction	CHCl <sub>3</sub>	Well
R. M'A.	3	M.	Tracheotomy	Diphtheria	Laryngeal obstruction	CHCl <sub>3</sub>	Well
A. B.	6	M.	Tracheotomy	Diphtheria	Laryngeal obstruction	CHCl <sub>3</sub>	Well
P. S.	23	M.	Excision testicle	Tuberculosis	T. B.	CHCl <sub>3</sub>	Well
A. B.	7	F.	Incision	Scarlet	Abscess	Ethyl Cl	Well
J. M'C.	3	F.	Incision	Scarlet	Abscess	Ethyl Cl	Well
R. G.	8	M.	Incision	Scarlet	Mastoid abscess	Ethyl Cl	Well
J. T.	3	M.	Tracheotomy	Diphtheria	Laryngeal obstruction	CHCl <sub>3</sub>	Died
J. C.	2	M.	Incision	Diphtheria	Abscess, eyelid	Ethyl Cl	Well
D. F.	34	M.	Incision	Tuberculosis	Psoas abscess	CHCl <sub>3</sub>	Died
M. M.	29	M.	Excision sinus	Tuberculosis	Sinus hip	CHCl <sub>3</sub>	Improved
P. S.	15	M.	Excision glands	Tuberculosis	Abscess	CHCl <sub>3</sub>	Improved
A. B.	5	M.	Excision sinus	Tuberculosis	Sinus leg	CHCl <sub>3</sub>	Improved
C. C.	8	F.	Abdominal section	Enteric	Perforation	CHCl <sub>3</sub>	Died
J. T.	4	M.	Incision	Scarlet	Mastoid abscess	CHCl <sub>3</sub>	Well
K. C.	6	F.	Incision	Scarlet	Abscess	Ethyl Cl	Well

#### Ambulance Work.

In 1909, the horse ambulance was superseded by a motor conveyance. On October 9th, a 22-h.p. "S.C.A.T." chassis, with a specially designed body, took over ambulance duties. From that date until the end of 1911 it was run and kept up by contract. The great increase in the work, and the inconvenience of not obtaining it exactly when required, necessitated the ambulance being taken over and worked entirely from the hospital. Accordingly, a chauffeur

took up duty in January of 1912. After several mechanical breakdowns, it was resolved to replace the Lynton wheels and solid tyres by artillery wheels fitted with pneumatic tyres. New mud-guards were fitted. These changes not only improved the appearance of the car, but also the comfort of the occupants. Throughout the year, the car has done excellent work; on an average eleven hundred miles were covered each month, and the cost of upkeep compared favourably with the contractor's charge per mile. At the end of the year, the engine was taken down and overhauled.

In the beginning of December, the new ambulance—an Arrol-Johnston 15 9 h.p. chassis, with a body by Jackson & Son, Edinburgh, was delivered. From the 7th to the end of December it ran 1,352 miles satisfactorily. The greater number of patients, and the larger area served by the hospital, make the use of two motor ambulances necessary. Parents now, who live at an inconvenient distance from the hospital, or who desire it, can have their children sent home by ambulance.

Forty-seven journeys were made taking 92 convalescent patients home. This, however, is increasing. Up to the end of April of the present year (1913), 55 journeys have been made taking patients home. It may come, at some future date, that all patients will be conveyed home by the Local Authority. This, at least, would prevent dismissal of patients in unsuitable weather.

The districts to which the 92 patients were taken home last year are as follows:—

District.	Number of Patients.	District.	Number of Patients.
Airdrie, - - - -	1	Ferniegair, - - -	1
Bentfoot, - - -	1	Glassford, - - -	2
Bothwell, - - -	9	Glenmavis, - - -	1
Low Blantyre, - -	1	Greengairs, - - -	10
Busby, - - - -	1	Glenboig, - - -	1
Carnbroe, - - -	1	Harthill, - - -	2
Cambuslang, - -	6	Longriggend, - -	1
Caldercruix, - -	13	Newarthill, - - -	1
Cleland, - - - -	1	Newton, - - - -	1
Darngavil, - - -	2	Newlands, - - -	3
East Kilbride, - -	2	Shotts, - - - -	7
Stane, - - - -	1	Strathaven, - - -	10
Stouehouse, - -	6	Tannochside, - -	2
Whiterigg, - - -	5		

The following are some of the details in connection with the ambulance work. The total mileage run by both ambulances was 14,288 miles. 865 journeys were made for admissions, 47 for discharges, 11 to remove phthisis cases to and from other hospitals, and 41 on various other business—964 journeys in all.

### The Staff.

On December 31st, 1912, the resident staff consisted of 1 physician-superintendent, 1 matron, 1 night sister, 6 ward sisters, 9 trained nurses, 19 probationer nurses, 1 sewing maid, 1 cook, 1 kitchen maid, 4 laundry maids, 4 housemaids, 6 ward maids, and 1 gardener.

The non-resident staff consisted of 1 engineer, 2 firemen, 1 chauffeur, 2 assistant gardeners, and 1 clerk.

Thus the total staff at the end of the year numbered 62.

*Lectures.*—Two courses of lectures were given by the physician-superintendent—one in fevers and fever nursing to the senior nurses, and one in anatomy and physiology, and hygiene, to the junior nurses.

In addition to these, a shorter course of lectures on medical and surgical nursing was given, with a view of encouraging the seniors to enter for the Local Government certificate.

Nurse Cunningham in the senior, and Nurse Arthur in the junior divisions, were successful in obtaining first prizes in the class examinations.

*Final Examination.*—At the end of the year, eight nurses, after examination by the County Medical Officer and the Physician-Superintendent, were successful in obtaining the certificate of the hospital. Nurse Wilson was awarded first prize.

*Staff Illness.*—During the year there was remarkably little illness among the staff.

The only illnesses were :—

Mild scarlet fever	-	-	-	-	-	1 nurse
Mild faucial diphtheria	-	-	-	-	-	1 nurse
Severe tonsillitis	-	-	-	-	-	1 nurse
Septic finger	-	-	-	-	-	1 nurse
Septic bursitis	-	-	-	-	-	1 maid

The usual statistical tables dealing with the year's work are appended. In concluding the sixteenth Annual Report, this opportunity is taken of thanking the matron, nurses, and outdoor staff for their help in carrying out the work of the hospital throughout the year.

I have the honour to be,

GENTLEMEN,

Your obedient Servant,

J. REID.

TABLE I.

ADMISSIONS (AS NOTIFIED) AND DISCHARGES DURING 1912, WITH THE NUMBERS IN HOSPITAL AT THE BEGINNING AND END OF THE YEAR.

DISEASE.	Remaining in Hospital, 1st January, 1912.		Admitted.		Discharged.				Remaining in Hospital, 31st Dec., 1912.	
	M.	F.	M.	F.	Recovered.		Died.		M.	F.
					M.	F.	M.	F.		
Enteric Fever, ...	8	8	53	53	49	42	6	6	6	13
Scarlet Fever, ...	43	50	381	507	361	481	9	13	54	63
Diphtheria, ...	8	11	83	110	81	106	6	11	4	4
Erysipelas, ...	...	...	7	4	7	4	...	...	...	...
Puerperal Fever, ...	...	...	...	9	...	3	...	5	...	1
Measles, ...	1	...	2	3	3	3	...	...	...	...
Surgical Tuberculosis, ...	...	...	11	2	3	1	...	...	8	1
Phthisis Pulmonalis, ...	...	...	3	2	1	1	1	1	1	...
Cerebro-Spinal Meningitis, ...	...	...	2	...	...	...	2	...	...	...
Tinea, ...	3	...	42	31	45	31	...	...	...	...
Others, ...	1	...	24	23	25	23	...	...	...	...
Total, ...	{ 64 69 133		{ 608 744 1,352		{ 573 675 1,270		{ 24 36 60		{ 73 83 155	

TABLE II.

ADMISSIONS AND DISCHARGES IN EACH MONTH OF THE YEAR 1912.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Admitted, ...	123	129	102	86	82	95	82	128	117	149	141	118	1,352
Discharged—													
Recovered,	111	92	124	102	99	85	64	91	94	151	133	121	1,270
Died, ...	2	5	5	8	6	3	7	5	4	5	4	6	60

TABLE III.  
AGE AND SEX OF PATIENTS DISCHARGED DURING THE YEAR 1912,  
WITH THE FATALITY RATE.

AGE	ENTERIC FEVER.								
	MALE.			FEMALE.			TOTAL.		
	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.
0-5,	3	...	...	1	...	...	4	...	...
-10,	6	...	...	9	2	18.1	15	2	11.7
-15,	7	...	...	4	...	...	11	...	...
-20,	5	...	...	6	1	14.2	11	1	8.3
-25,	...	2	100.0	3	...	...	3	2	40
-30,	3	2	40.0	1	...	...	4	2	33.3
-35,	1	...	...	3	2	40.	4	...	33.3
-40,	2	...	...	2	...	...	4	...	...
-45,	1	1	50.0	...	...	...	1	1	50.
-50,	1	...	...	...	...	...	1	...	...
50 and over,	...	...	...	...	...	...	...	...	...
Total,	29	5	17.2	29	5	17.2	58	10	14.7

## SCARLET FEVER.

0-1,	1	...	...	2	...	...	3	...	...
-2,	9	...	...	1	...	...	10	...	...
-3,	19	1	5.	21	3	12.5	40	4	9.
-4,	34	1	2.8	36	3	7.6	70	4	5.4
-5,	33	4	10.8	48	1	2.0	81	5	5.8
-6,	35	2	5.4	59	...	...	94	2	2
-7,	35	1	2.7	43	4	8.5	78	5	6.
-8,	22	...	...	37	1	2.6	59	1	1.6
-9,	42	...	...	35	...	...	77	...	...
-10,	16	...	...	35	1	2.7	51	1	1.8
-15,	55	...	...	86	...	...	141	...	...
-20,	12	...	...	14	...	...	26	...	...
20 and over,	3	...	...	15	...	...	18	...	...
Total,	316	9	2.7	432	13	2.9	748	22	2.8

## DIPHTHERIA.

0-1,	1	1	50.	...	1	100.	1	2	66.6
-2,	6	1	14.2	3	1	25.	9	2	18.1
-3,	7	1	12.5	5	1	16.6	12	2	14.2
-4,	6	1	14.2	4	3	42.8	10	4	28.5
-5,	5	...	...	6	1	14.2	11	1	8.3
-6,	4	...	...	14	...	...	18	...	...
-7,	6	...	...	7	1	12.5	13	1	7.1
-8,	8	...	...	7	...	...	15	...	...
-9,	6	...	...	5	1	16.6	11	1	8.3
-10,	1	...	...	1	...	...	2	...	...
-15,	7	...	...	11	2	15.3	18	2	10.
-20,	5	...	...	6	...	...	11	...	...
20 and over,	2	...	...	3	...	...	5	...	...
Total,	64	4	5.9	72	11	13.2	136	15	9.9

TABLE IV.—THE STAGE OF THE DISEASE IN WHICH PATIENTS DISCHARGED IN 1912 WERE ADMITTED TO HOSPITAL.

DISEASE.	DAYS OF 1ST WEEK.							WEEK OF ILLNESS.				TOTAL.
	1	2	3	4	5	6	7	1st.	2nd.	3rd.	4th and over	
Enteric Fever, -	...	2	2	3	1	4	3	15	34	14	5	68
Scarlet Fever, -	17	138	203	154	106	50	24	692	47	15	16	770
Diphtheria, -	1	22	34	28	27	7	11	130	19	2	...	151

TABLE V.—COMPLICATIONS OBSERVED IN PATIENTS DISCHARGED DURING 1912.

ENTERIC FEVER.		Perforation.	Hæmorrhage.	Pneumonia.	Bronchitis.	Endocarditis.	Nephritis.	Phthisis.	Diarrhoea.	Otitis.	Superficial Abscesses.	Phlebitis.
In 58 Recovered Cases, -	-	...	4	3	5	...	...	1	7	2	1	1
„ 10 Fatal Cases, -	-	3	1	2	...	1	1	...	...	...	...	...
In 68 Cases, -	-	3	5	5	5	1	1	1	7	2	1	1
Percentage, -	-	4'4	7'3	7'3	7'3	1'4	1'4	1'4	12'9	2'9	1'4	1'4

SCARLET FEVER.		Suppurative Cervical Adenitis.	Non-Suppurative Adenitis.	Otitis Media Purulenta.	Rhinorrhoea.	Endocarditis.	Nephritis.	Rheumatism and transitory joint pains.	Mastoiditis.	Pulmonary Complications.	Gastro-intestinal Complications.	Eczema and other Skin conditions.
In 748 Recovered Cases, -	-	10	199	78	67	42	5	22	2	1	4	33
„ 22 Fatal Cases, -	-	...	5	6	7	1	...	1	...	5	...	...
In 770 Cases, -	-	10	204	84	74	43	5	23	2	6	4	33
Percentage, -	-	1'3	26'5	10'9	9'6	5'5	'6	2'9	'2	'7	'4	4'2

DIPHThERIA.		Adenitis.	Rhinitis.	Otitis media.	Cardiac Involvements.	Broncho-Pneumonia.	Bronchitis.	Eczema.	Palatal Paralysis.	Ocular Paralysis.
In 136 Recovered Cases, -	-	15	8	1	2	...	2	2	12	4
„ 15 Fatal Cases, -	-	2	...	...	5	2	...	...	3	...
In 151 Cases, -	-	17	8	1	7	2	2	2	15	4
Percentage, -	-	11'2	5'3	'6	4'6	1'3	1'3	1'3	9'9	2'6



TABLE VI.

PARISH.	LOCALITY.	CASES REMOVED.														
		Enteric Fever.		Scarlet Fever.		Diphtheria.		Cerebro-Spinal Meningitis.		Tinea.		Other Diseases.		Total.		
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	
AVONDALE, BLANTYRE,	Strathaven, -	1	...	25	...	8	...	...	...	1	...	1	...	36	...	
	High Blantyre, -	4	1	24	1	2	...	...	...	4	...	1	1	35	3	
	Low Blantyre, -	2	...	15	1	5	...	...	...	4	...	9	2	35	5	
	Stonefield, -	...	...	8	...	...	...	...	...	...	...	...	...	8	...	
BOTHWELL,	Mossend, -	2	...	31	...	4	1	...	...	1	...	7	1	45	2	
	Bellshill, -	8	2	53	3	26	...	...	...	2	...	5	...	94	5	
	Uddingston, -	2	...	120	3	13	3	...	...	2	...	2	...	139	6	
	Bothwell, -	2	...	121	2	11	...	...	...	7	...	1	...	142	2	
	Tannochside, -	...	...	60	4	2	...	...	...	...	...	1	...	63	4	
	Newarthill, -	11	...	4	...	5	...	...	...	...	...	...	...	20	...	
	Holytown, -	...	...	11	...	5	1	...	...	...	...	10	...	26	1	
	Chapelhall, -	...	...	11	...	4	1	...	...	...	...	...	...	15	1	
	Carnbroe, -	...	...	5	...	6	...	...	...	...	...	3	...	14	...	
CAMBUSLANG,	Carfin, -	1	...	3	...	2	1	...	...	...	...	...	...	6	1	
	Cambuslang, -	5	...	41	1	7	1	...	...	1	...	12	1	66	3	
CAMBUSNETHAN,	Newton, -	2	...	63	1	11	...	...	...	1	...	...	...	77	1	
	Overtown, -	...	...	11	...	...	...	...	...	...	...	...	...	11	...	
DALSERF, -	Newmains, -	4	1	13	...	6	...	...	...	1	...	1	...	25	1	
	Netherton, -	...	...	13	...	9	...	...	...	...	...	...	...	22	...	
	Larkhall, -	25	3	26	...	4	...	2	2	...	...	1	1	58	5	
DALZIEL, -	Dalserf, -	...	...	3	...	...	...	...	...	...	...	2	1	5	1	
	Dalziel, -	1	...	5	1	5	...	...	...	...	...	2	1	13	2	
EAST KILBRIDE,	Hospital, -	...	...	1	...	2	...	...	...	...	...	2	...	5	...	
	East Kilbride, -	...	...	21	...	1	...	...	...	...	...	1	...	23	...	
GLASSFORD,	Busby, -	...	...	1	...	1	...	...	...	...	...	...	...	3	1	
	Glassford, -	...	...	...	...	8	...	...	...	...	...	...	...	8	...	
HAMILTON,	Chapelton, -	...	...	4	...	...	...	...	...	...	...	...	...	4	...	
	Quarter, -	...	...	4	...	...	...	...	...	...	...	...	...	4	...	
	Cadzow, -	2	...	9	...	5	2	...	...	2	...	1	...	19	2	
NEW MONKLAND,	Ferniegair, -	...	...	5	...	5	...	...	...	...	...	...	...	10	...	
	Caldercruix, -	12	1	19	...	...	...	...	...	4	...	...	...	35	1	
	Greengairs, -	...	...	14	...	...	...	...	...	...	...	...	...	14	...	
	Glenboig, -	3	...	...	...	5	1	...	...	...	...	3	...	11	1	
	Whiterigg, -	8	2	...	...	1	...	...	...	...	...	1	...	10	2	
OLD MONKLAND,	Glenmavis, -	...	...	...	...	6	...	...	...	...	...	...	...	6	...	
	New Monkland, -	4	1	11	...	2	...	...	...	...	...	2	...	19	1	
	Calderbank, -	...	...	45	4	4	...	...	...	...	...	1	...	50	4	
	Drumpellier, -	...	...	3	...	...	...	...	...	...	...	...	...	3	...	
SHOTTS, -	Baillieston, -	...	...	1	...	...	...	...	...	2	...	...	...	3	...	
	Tollcross, -	...	...	...	...	...	...	...	...	...	...	2	...	2	...	
	Shotts, -	1	...	9	...	1	...	...	...	...	...	2	...	13	...	
STONEHOUSE, BURGHs, -	Cleland, -	...	...	21	1	3	1	...	...	...	...	...	...	24	2	
	Stonehouse, -	...	...	52	...	...	...	...	...	...	...	1	...	53	...	
UPPER WARD, -	HAMILTON,	...	...	1	...	...	...	...	...	11	...	2	...	14	...	
	Wishaw, -	6	...	...	...	14	4	...	...	...	...	...	...	20	4	
	Airdrie, -	...	...	...	...	...	...	...	...	1	...	4	...	5	...	
	Motherwell, -	...	...	...	...	...	...	...	...	15	...	...	...	15	...	
	Coatbridge, -	...	...	...	...	...	...	...	...	1	...	...	...	1	...	
LOWER WARD,	...	...	...	...	...	...	...	...	7	...	...	...	11	1		
ARGYLLSHIRE, -	...	...	...	...	...	...	...	...	10	...	1	...	11	...		
Total Number of Cases,	...	...	110	12	887	22	194	17	2	2	77	...	82	7	1352	60

TABLE VII.  
ADMISSIONS (AS NOTIFIED) SINCE OPENING OF HOSPITAL.

YEAR.	Enteric Fever.	Scarlet Fever.	Measles.	Diphtheria.	Erysipelas.	Phthisis.	Surgical Tuberculosis.	Other Diseases.	Quarantine.	Cerebro-Spinal Meningitis.	Tinea.	TOTAL.
1897 October 2nd)	22	70	9	...	1	...	...	...	2	...	...	104
1898	216	353	13	12	2	...	...	3	12	...	...	611
1899	235	571	1	21	5	...	...	4	12	...	...	849
1900	145	638	6	21	6	...	...	10	6	...	...	832
1901	291	621	...	31	7	...	...	...	14	...	...	964
1902	160	431	6	16	12	...	...	12	74	...	...	711
1903	174	187	2	22	14	...	...	3	15	...	...	417
1904	112	155	3	53	13	...	...	13	317	...	...	666
1905	300	114	1	66	12	23	...	9	88	...	...	613
1906	214	283	6	72	8	76	...	9	9	8	...	685
1907	99	317	2	283	9	106	...	10	10	94	...	930
1908	131	508	9	206	14	53	...	13	16	61	...	1,011
1909	109	834	3	164	11	1	...	16	3	10	...	1,151
1910	148	696	1	267	16	27	...	27	...	5	...	1,187
1911	122	670	4	248	16	...	...	59	...	7	67	1,193
1912	106	888	5	193	11	5	13	56	...	2	73	1,352
	2,584	7,336	71	1,675	157	291	13	244	578	187	140	13,276

TABLE VIII.  
DISCHARGES SINCE OPENING OF HOSPITAL.

YEAR.	ENTERIC FEVER.		SCARLET FEVER.		MEASLES.		DIPHTHERIA.		ERYSIPELAS.		PHTHISIS.		OTHER DISEASES.		QUARANTINE.		TOTAL.	
	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Discharged.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.
1897 Oct. 2nd)	11	1	43	2	1	1	...	...	1	...	...	...	2	1	...	...	58	5
1898	155	23	296	12	16	4	11	...	1	1	...	...	10	...	9	...	498	40
1899	201	24	533	20	...	...	15	4	3	1	...	...	42	...	16	1	810	50
1900	134	14	592	15	7	...	16	2	5	...	...	...	25	4	6	...	785	35
1901	209	21	640	22	1	...	20	7	8	1	...	...	17	...	13	...	908	51
1902	181	27	436	20	6	...	14	2	10	1	...	...	10	...	74	...	731	50
1903	140	24	180	4	2	...	15	3	13	2	...	...	3	...	10	...	363	33
1904	87	13	175	7	1	1	44	9	12	...	...	...	32	5	321	...	672	35
1905	241	22	109	5	4	4	42	8	12	1	21	1	23	4	88	...	540	45
1906	192	19	241	4	6	...	44	11	4	2	62	13	57	8	9	...	615	57
1907	91	9	313	9	2	1	192	16	9	1	77	19	111	64	11	...	806	119
1908	107	13	425	8	9	2	170	17	12	3	55	10	64	38	16	...	858	91
1909	99	3	781	24	3	...	129	16	10	1	1	...	63	11	3	...	1089	55
1910	117	5	678	16	7	...	226	22	13	1	28	...	58	18	...	...	1127	62
1911	78	11	617	18	3	...	232	18	18	...	1	1	192	14	...	...	1141	62
1912	58	10	748	22	6	...	136	15	11	...	2	2	309	11	...	...	1270	60
Total,	2101	239	6807	208	74	13	1306	150	142	15	247	46	1018	178	576	1	12271	850
Mortality per cent.,	10.2		2.9		14.9		10.3		9.5		15.6		14.8		.17		6.4	

DISTRICTS OF THE LOWER AND MIDDLE WARDS OF THE  
COUNTY OF LANARK.

LIGHTBURN JOINT-HOSPITAL.

SEVENTEENTH ANNUAL REPORT BY THE  
PHYSICIAN-SUPERINTENDENT.

LIGHTBURN HOSPITAL,  
*April, 1913.*

TO THE MEMBERS OF THE  
HOSPITAL COMMITTEE.

GENTLEMEN,

I have the honour to submit for your consideration the Annual Report of the work done in this hospital during the year 1912.

There were in hospital at the beginning of the year 93 cases, and during the year 787 patients were admitted, including a phthisis patient admitted twice, making the total number under treatment 880. Of these, 731 were discharged, 45 died (14 within 48 hours of admission), leaving 104 in Hospital on 31st December, 1912.

Of those admitted, 483 came from the Lower Ward, 248 from the Middle Ward, 50 from the Shettleston and Tollcross districts of the City of Glasgow, 2 from the Burgh of Rutherglen, 3 from Clydebank, and 1 from Greenock. The Rutherglen, Clydebank, and Greenock cases were all phthisis patients.

Of the 880 cases, 32 were non-infectious on admission, and other 11 were suffering from an infectious disease other than that notified.

	REMAINING FROM 1911.		ADMITTED AND DISCHARGED DURING 1912.			REMAINING TO 1913.
	Recovered.	Died.	Recovered.	Died.	Contacts.	
Infectious,	92	1	609	42	...	104
Non-infectious,	...	...	30	2*	...	...
	93		880			104

773

\* Includes a case non-infectious when admitted, but who took scarlet fever in Hospital.

*Monthly rate of admission.*—The average monthly rate of admission to the nearest number was 66, an increase of 7 on last year. The largest number admitted in any one month was 82 in September, a decrease of 5; the lowest, 39 in June, an increase of 13. Over a hundred more cases of scarlet fever were admitted than in 1911, the monthly average being 40·2, as compared with 30·9. There was a decrease of almost 30 in the number of diphtheria cases admitted, the average being 14·3, as compared with 16·5. The number of cases of enteric was the smallest in the history of the hospital, there being only 18 cases, as compared with the previous lowest (in 1897) of 32. Between 50 and 60 cases of scarlet fever were admitted in November and December, while the number in January, April, May, August, and October was between 40 and 50.

*Number of patients resident daily.*—The daily average number of patients resident in the hospital, to the nearest number, was 95, an increase of 15 on 1911. The highest number resident on one day was 112, on the 30th December, a decrease of 7 on last year; the lowest number was 59, as compared with 38 in 1911. On 40 consecutive days (during April and May) the number resident was over 90. The number never fell below 50, while on 207 days the number was over 90.

On 1 day	the number resident was between 50 and	60
„ 13 days	the number resident was between 60 „	70
„ 55	„ „ „ „ „	70 „ 80
„ 90	„ „ „ „ „	80 „ 90
„ 142	„ „ „ „ „	90 „ 100
„ 64	„ „ „ „ „	100 „ 110
„ 1	„ „ „ „ „	110 „ 120

It will thus be seen that while there was an absence of any great rush of cases, the hospital was steadily busy throughout the year.

*Average duration of residence.*—The average duration of residence of all cases discharged (including infectious, non-infectious cases, and deaths) was 43 days; of all recovered cases (including non-infectious cases) was 43; and of all fatal cases 20.

The average duration of residence of 704 undoubted cases (including 3 non-infectious cases who took scarlet fever in hospital) was 43·7, and of 44 fatal cases (including a non-infectious case who took scarlet fever in hospital) was 20 days. The average duration of residence of 27 non-infectious cases discharged recovered was 23 days, and of 1 fatal case (pneumonia) was 9 hours.

*Fatality Rate.*—The fatality rate for the year (calculated on all discharges) was 5·8 per cent., a decrease of 0·6 per cent. on 1911. Excluding 14 who died within 48 hours of admission, the corrected rate

is 4 per cent., a decrease of 0·2 per cent. on 1911. The fatality rate of undoubted infectious cases was 5·8 per cent., but excluding those who died within 48 hours of admission, 4 per cent.

*Cases wrongly notified.*—There were 43 cases wrongly notified (including 8 cases notified as scarlet, which were very doubtful). Of these, 11 were suffering from infectious disease other than that by which they were notified, 5 cases notified as scarlet proved to be measles, 4 cases notified diphtheria proved to be scarlet fever, 1 typhus proved enteric, and 1 erysipelas proved puerperal fever. The other cases all proved to be non-infectious, but of these, 4 notified as scarlet fever took the disease in hospital, and 1 of them died. A case notified as enteric, which was really lobar pneumonia, also died.

*Mixed Infections.*—In addition to the undoubted cases of infectious disease admitted, there were 29 cases with mixed infections, as follows:—Seven cases of scarlet fever with chickenpox; 3 cases of scarlet fever with diphtheria; 4 scarlet fever with measles; 5 scarlet fever with whooping-cough; 1 scarlet fever with mumps; 1 scarlet fever with German measles; 3 diphtheria cases had scarlet fever; 1 diphtheria had measles; 1 diphtheria had measles and whooping-cough; 1 whooping-cough had scarlet fever.

*Cross Infection.*—As mentioned in last year's report, there remained in the hospital at the end of 1911, 18 cases of scarlet who had been cross-infected with chicken-pox, and 7 cases of diphtheria who had been cross-infected with measles. During 1912 there were 21 cases of cross-infection; 4 cases of scarlet fever took chicken-pox, 4 took measles, and 5 took diphtheria, while 8 cases of diphtheria were infected with scarlet fever.

### Scarlet Fever.

There remained in hospital, at the close of 1911, 53 cases notified as scarlet fever.

During the year, 483 patients were admitted, notified as suffering from this disease, but of these, 21 were found, after observation, not to be suffering from scarlet fever, while 8 were classed as very doubtful. Of the 21 wrongly notified, 4 developed scarlet fever in hospital.

Thus, 454 undoubted cases were admitted during the year, and 511 undoubted cases, including 4 cases who took the disease in hospital, were treated. To this figure should be added 4 cases notified as diphtheria, which proved to be scarlet fever, 3 cases who had both diphtheria and scarlet on admission, but were notified as diphtheria, and 8 cases of diphtheria who were cross-infected with scarlet fever, making the total number treated 526. Excluding these last cases of the 511 cases treated, 426 were discharged recovered, and 9 died (2 within 48 hours of admission), leaving 76 in hospital at the end of the year.

**AVERAGE MONTHLY RATE OF ADMISSION** of scarlet fever cases was 40·2. The average number resident on one day was 69. The smallest number resident on one day was 35 in the month of August, and the largest number was 81 in the month of December.

**REMOVAL TO HOSPITAL.**—Of the 483 cases notified as scarlet fever, removal to hospital was carried out in 94 per cent. of the cases during the first week of illness. The majority of the patients (292) were admitted on the second or third day of illness.

**AVERAGE DURATION OF RESIDENCE** of all cases discharged was 43·9 days; of recovered cases, 44·3; of fatal cases, 15 days.

The longest stay of any one patient was 108 days, due to rhinorrhœa. Another patient was resident over 100 days on account of the same complication. Four patients were resident between 90 and 100 days, 1 because of otorrhœa, 1 because of rhinorrhœa, 1 because of otorrhœa plus rhinorrhœa, and the fourth, who had otorrhœa and mastoiditis, developed diphtheria on the seventy-third day of residence. The average duration of residence is less than in 1911—all cases 46 days, recovered cases 47.

**TYPE OF THE DISEASE.**—Of all cases discharged (including those wrongly diagnosed who took the disease in hospital), the attack was mild in 71·5 per cent., of moderate severity in 22·5 per cent., and of great severity in 6 per cent. Nine of the severe cases were fatal. Among the mild cases 17 were desquamating on admission.

**CAUSE OF DEATH.**—Of the 9 fatal cases, two had malignant scarlet fever. Both were admitted in a state of collapse, and one of them, a girl aged 2 years, died 19 hours after admission, while the other, a boy aged 6 years, died 17 hours after admission. The other seven cases all had anginose scarlet fever. One of them, a boy of 18 months, was wrongly notified before admission, being non-infectious. He developed scarlet fever on the second day and died on the thirty-fifth day.

One case developed broncho-pneumonia on the sixteenth day of residence, and died on the nineteenth.

A boy, aged 5 years, developed a severe adenitis on the fourth day of residence, rhinorrhœa on the sixth day, extensive suppuration of the lachrymal sac and duct on the seventh day, double otorrhœa on the fourteenth day, and gangrenous stomatitis, almost bad enough to be classed as cancrum oris, on the nineteenth day, broncho-pneumonia on the twenty-seventh day, and died on the twenty-eighth day.

The average age of the fatal cases was 3 years. Two were between 1 and 2, 3 two years, 1 was 3 years, 2 were 5, and 1 was 6 years.

Five of the cases were males and four females.

Two were admitted on the first day of illness, three on the second day, one on the third day, two on the fifth day, and one took scarlet fever in hospital. The average day of illness on admission was the third.

The fatality rate calculated on undoubted cases discharged was 2·07, as compared with 2·14 in 1911, and 2·19 in 1910. Excluding two cases who died within forty-eight hours of admission, the fatality rate is 1·6.

COMPLICATIONS.—(a) *Acute nephritis* occurred in 3 cases: one on the eighteenth day of illness, one on twenty-first day, and one on the thirty-third day. Blood was present in the urine in the last mentioned. The albumen was present in the urine in the first case for 7 days, in the second for 10 days, and in the third for 21 days. Slight albuminuria during convalescence occurred in other 6 cases, but called for no special treatment.

(b) *Otitis Media Purulenta* was present in 60 cases, in 18 of whom both ears were affected, and in 42 of whom one ear was affected. Among the cases with mild attacks of scarlet fever, 8 had double otitis and 23 had single otitis. Among the cases with moderate attacks, 6 had double and 13 had single otitis. Among the severe cases, 4 had double and 6 had single otitis.

Of those with one ear affected, 4 had the complication on admission, in 2 it appeared in the first week, in 17 in the second week, in 11 in the third week, in 3 in the fourth week, in 2 during the fifth week, in 2 during the sixth week, and in one during the eighth week.

Of those with double otitis, it was present before admission in 1 case, and appeared during the first week in 5, during the second week in seven, during the third week in 2, and in other 3 cases during the fourth, fifth, and sixth weeks respectively.

Of the fatal cases, 1 had double otitis, and 2 had single on admission.

(c) *Rhinorrhœa* occurred in 60 cases, 35 of whom had mild attacks of scarlet fever, 16 had moderate, and 9 had severe attacks. Of those with mild scarlet fever, 5 had rhinorrhœa on admission, of those with moderate attacks 3, and of those with severe attacks, 3 had the condition on admission.

Of the 35 cases with mild attacks of scarlet fever, complicated with rhinorrhœa, 1 had double otitis media, and 4 single.

Of 16 cases with moderately severe scarlet fever with rhinorrhœa, 2 had double otitis, and 6 single.

Of 9 cases with severe scarlet fever with rhinorrhœa, 2 had double otitis, and 3 single.

There were thus 18 cases in whom both complications were present.

(d) *Mastoiditis*, requiring a simple operation, developed in 2 cases.

(e) *Non-Suppurative Adenitis* was present in 35 cases, in 10 of whom it had developed before admission.

(f) *Suppurative Cervical Adenitis*, requiring incision, occurred in 6 patients, the majority of whom were operated on under chloroform.

(g) *Secondary Sore Throat* occurred in 10 cases.

(h) *Pains in the Joints* (usually ankles, knees, and wrists) occurred in 16 cases, in one of whom the condition followed the administration of anti-diphtheritic serum.

OTHER COMPLICATIONS.—*Heart murmurs* were present in 3 cases, one of whom had the complication on admission. All these patients had mild attacks of scarlet fever. *Conjunctivitis* 5 cases. *Facial eczema* (on admission), 3. *Pyuria*, 3 cases. *Epistaxis*, 3 cases. *Perionchya*, 11 cases. *Abscess in finger*, 1 case. *Gumboil*, 2 cases. *Parotitis*, 2 cases. *Bronchitis*, 2 cases, in both of whom the condition was present on admission. *Broncho-pneumonia* occurred in 3 cases, 2 of whom died. In these last two the condition appeared on the 21st and 27th days respectively. *Stomatitis* occurred in 3 cases, in 2 of whom it was gangrenous. One of these two died: he had also *suppuration of the lachrymal sac and duct*.

SECOND ATTACKS.—Among the cases admitted during the year, second attacks were reported to have occurred in 3 patients. Of these, one proved to be non-infectious; the other two were typical scarlet fever, and both had been in Motherwell Hospital with scarlet fever during 1911. A girl, aged 8 years, admitted with a typical attack of scarlet fever, developed a second attack on the fortieth day of illness.

RETURN CASES.—Eight cases dismissed presumably gave rise to 12 others, as follows:—

W. T. was admitted 6 days after a brother had been dismissed, but he had also been in contact with other cases.

J. W. was admitted 13 days after her sister had left Lightburn.

G. M., A. M., A. M., and M. M. (two brothers and two sisters) were admitted 14 days after the discharge of a brother.

M. L., admitted 4 days after the discharge of a brother.

J. G., admitted 4 days after the discharge of a brother.

H. O. and J. O., admitted 6 and 17 days respectively after the discharge of a sister.

G. S., admitted 22 days after the discharge of a sister.

A. S., a brother of the last case, was admitted 38 days after the discharge of G. S.



Of the eight cases which gave rise to these returns, 4 had never had either discharging ear or nose while in hospital. The average duration of residence of these four was 37·5 days. Of the others, two had had otorrhœa, one had had rhinorrhœa, and one had perionchia, but in all cases the discharges had disappeared before the patient was dismissed. These last four were resident, on an average, 55·5 days.

In this connection it is interesting to note that two children were admitted the day *before* a brother was dismissed: one patient two days before a sister was dismissed, and another patient 10 days before a sister was discharged, showing how so-called return cases may be a mere coincidence of events.

**CROSS-INFECTION—*With Chicken-pox.***—As mentioned in last year's report, towards the end of 1911, 18 cases of scarlet fever became cross-infected with chicken-pox. During 1912 other 4 cases of cross-infection with this disease occurred.

*With Diphtheria.*—Five patients became cross-infected with diphtheria. With regard to these cases, it was found that there were in the ward at the same time other cases from whose throats positive swabs were got, though there was no clinical evidence of diphtheria.

Apart from the above, swabs were taken from the throats of 37 patients, 10 of which were positive. Twelve cases of scarlet got diphtheria anti-toxin, usually 6,000 units.

*With Measles.*—Four patients were cross-infected with measles, all of them being infected from cases who developed measles after admission.

**MIXED INFECTION—*With Chicken-pox.***—Seven patients were admitted suffering from scarlet fever plus chicken-pox. They gave rise to two cases of cross-infection.

*With Diphtheria.*—Apart from the cases mentioned above, from whose throats positive swabs were got, but who showed no clinical evidence of the disease, there were 3 cases admitted with diphtheria in addition to scarlet fever.

*With Measles.*—Four cases were incubating measles on admission.

*With Whooping-Cough.*—Five cases had scarlet fever and whooping-cough on admission.

*With Mumps.*—One case had scarlet fever plus mumps.

*With German Measles.*—One patient who had typical scarlet fever developed German measles ten days after admission.

**CORRECTED DIAGNOSIS.**—Of the cases admitted during the year, 21 had not scarlet fever, while other 8 were classed as extremely doubtful. Of those wrongly diagnosed before admission, one was suffering from

lobar pneumonia, and was dismissed well after 12 days' residence: 5 proved to be measles, and 15 were not suffering from any infectious disease. Of the last mentioned, one took a mild attack of scarlet fever on the fifth day of residence, and was dismissed well on the forty-seventh day; one took a mild attack on the eighth day, and was resident 43 days; one took a severe attack on the eighth day, and was resident 70 days on account of rhinorrhœa; the last took a severe attack on the second day, and died on the thirty-fifth day.

Excluding those cases who developed scarlet fever after admission, the average duration of residence of the doubtful and non-infectious cases was 28 days.

### Diphtheria.

There remained in hospital, at the close of 1911, 34 cases notified as diphtheria, all of whom were undoubted cases.

During the year 1912, 172 cases were admitted, notified to be suffering from diphtheria, and of these 8 had been wrongly diagnosed.

Thus there were 198 undoubted cases of diphtheria, admitted as such, treated during the year, and of that number 15 died (4 within 24 hours of admission), 174 were discharged recovered, and 9 remained in hospital at the close of the year. In addition, 3 cases of scarlet fever were also suffering from diphtheria on admission, and 5 developed diphtheria in hospital, so that 165 cases had this disease on admission, and 206 cases were treated during the year, with 15 deaths.

The number of diphtheria cases admitted is considerably lower than in 1911, there being a decrease of 27. During the months of January, May, and October there were respectively admitted 24, 21, and 20 cases. The largest number resident on any one day was 40, in the month of January, the average being 16. On the whole, the disease was of a less severe type than in 1911, especially during the later months of the year.

REMOVAL TO HOSPITAL.—Table VI. in the Appendix shows in detail the day of the disease on which patients were admitted to hospital. 86·8 per cent. of all undoubted cases admitted were brought in during the first week of illness, but of these 40 per cent. were not admitted till after the third day. The largest number was admitted on the fourth day of illness. The average day of admission of the 15 fatal cases was the sixth. Only 4 of the 15 were admitted on or before the fourth day, while 3 patients were said to have been ill for 10, 11, and 12 days respectively at the time of admission.

AVERAGE DURATION OF RESIDENCE of 174 cases discharged was 36·1 days for recovered cases, and 7 days for fatal cases. With the sanction of the County Health Authorities, a number of patients who were

quite well, but from whose throats positive swabs were persistently got, were discharged. So far as could be ascertained, these cases gave rise only to other two.

FATALITY RATE, calculated on undoubted cases of diphtheria discharged, was 7.9 per cent, as compared with 11.2 in 1911. If we omit 4 patients who died within 24 hours of admission, the fatality rate was 5 per cent.

THE SITE OF THE DISEASE and severity of the attack in 189 cases (admitted as diphtheria) discharged were as follows:—22 had injected fauces, but without any membrane, at least on or after admission.

40 had mild or ordinary attacks, with the presence of membrane.

76 had moderately severe attacks.

51 had severe or very severe attacks (with 15 deaths).

Excluding the 22 cases without membrane, the site and severity of the disease are indicated in the following table:—

	MILD.		MODERATE.		VERY SEVERE.		TOTAL.
	Recov.	Died.	Recov.	Died.	Recov.	Died.	
Fauces, . . . .	35	...	61	...	20	1	117
Larynx, . . . .	1	...	5	...	4	4	14
Fauces and Larynx, . .	1	...	2	...	4	3	10
Fauces and Nose, . .	3	...	8	...	8	6	25
Nose, . . . . .	...	...	...	...	...	1	1
	40		76		51		167

COMPLICATIONS AND SEQUELÆ.—(a) *Otorrhœa* occurred in 6 cases, in 3 of whom it was probably the result of cross-infection with measles. (b) *Enlarged cervical glands* occurred in 21, in 12 of whom the condition was present at the time of admission; in 2 cases incision, under chloroform, was necessary. (c) *Severe epistaxis* in 6. (d) *Paralysis of the soft palate* in 10, in 4 of whom the condition appeared in the second week, 2 in the third week, 2 in the fourth week, and 2 in the sixth week. (e) *Squint* occurred in 2 patients, 1 of whom had also ptosis. (f) *Paralysis of accommodation* was noted in 1 case. (g) *Intercostal paralysis* was present in 1 of the fatal cases. (h) *Paralysis of the muscles of the neck* in 1. (i) *Tonsillar ulcer* in 2. (j) *Conjunctivitis* in 3. (k) *Broncho-pneumonia* in 4, in two of whom the condition was present on admission. One of the cases had been badly burned by poultices before being sent in. (l) *Abscess on scalp*, 1 case. (m) *Jaundice*, 1 case. (n) *Suppurating finger*, 1 case. (o) *Abscess on abdominal wall*, 1 case. (p) *Gangrenous stomatitis*, 1 case. (q) *Pyuria*, 1 case.

One boy, age 9, who was admitted on the second day of illness with severe nasal and faucial diphtheria, developed a nasal twang on eighteenth day of illness: it disappeared on the fiftieth day, and he

seemed on the high road to recovery. On the eighty-sixth day, however, it was found that he had paralysis of the legs, with drop foot, absence of knee jerks, ataxic gait, accompanied by a well-marked cardiac irregularity. He ultimately made a good recovery.

**TRACHEOTOMY.**—This operation was performed on 10 patients (5 males and 5 females) during the year, of whom 5 died and 5 recovered. The day of illness on admission of these cases was as follows:—2 on the third day, 1 on the fourth day, 3 on the fifth day, 2 on the eighth day, 1 on the eleventh day, and 1 on the twelfth day. The day of illness on admission of the 5 fatal cases was as follows:—1 on the third day, 2 on the fifth day, 1 on the eleventh day, and 1 on the twelfth day. It will thus be seen that 4 of those who died had been ill for at least 4 days prior to admission. Two of the fatal cases were admitted in a state of extreme exhaustion, and another was comatose.

The ages of all the patients operated on were as follows:—One was  $1\frac{8}{12}$  years, two were 3 years, three were 4 years, two were 5 years, one was 6 years, and one was 9 years.

3 were operated on on admission, with 2 deaths.

1 was operated on 1 hour after admission, and died.

3 were operated on 3 to 4 hours after admission, with 1 death.

1 was operated on 10 hours after admission, and died.

1 was operated on 20 hours after admission, and recovered.

1 was operated on 24 hours after admission, and recovered.

Of the fatal cases, 1 lived for 17 hours, 1 for 26 hours, 1 for 30 hours, 1 for 40 hours, and 1 for 4 days.

The recovered cases were resident, on an average, for 37 days.

The causes of death were as follows:—Three died of toxæmia, 1 of cardiac failure on the fourth day after operation, and 1 case died of broncho-pneumonia, which was present on admission.

The length of time for which the tracheotomy tube was in varied. Of the recovered cases, 1 had the tube in for 2 days, and 4 for 3 days. One of the fatal cases had the tube removed on the third day.

From 5 of the cases, no swabs were got; from 3 cases the swabs were positive, and from 2 cases negative. In the last-mentioned, membrane was visible in the trachea.

The average amount of serum administered in all the tracheotomy cases was 13,000 units.

Apart from the tracheotomy cases, 10 patients had to be put in steam.

**FATAL CASES.**—There were 15 deaths during the year. Those occurring after tracheotomy have been dealt with above. Of the others, the causes of death were as follows:—Toxæmia in 6; cardiac

paralysis in 2; broncho-pneumonia, present on admission, 1 (this case had been severely burned by poultices prior to being sent in); and 1 case, admitted in an extremely exhausted condition owing to severe laryngeal obstruction, died half-an-hour after admission.

**CORRECTED DIAGNOSIS.**—Eight cases, sent in to hospital as diphtheria, had been wrongly notified. Of these, 4 proved to be scarlet fever, 1 had an ulcer on the soft palate, 1 was suffering from broncho-pneumonia, 1 was not suffering from any disease, and 1 had a suppurating tonsil.

**MIXED INFECTION.**—Among the patients sent in with diphtheria were 7 cases who were suffering from other infectious diseases as well as diphtheria, at the time of admission; 3 cases had also scarlet fever; 1 case had measles; 1 case had measles and whooping-cough; and 2 had whooping-cough.

**CROSS-INFECTION.**—As mentioned in last year's report, there remained in hospital at the end of 1911, 7 patients who had contracted measles from a nurse. These were all dismissed recovered. During the year, 8 cases became cross-infected with scarlet fever. One case developed it on the seventh day of residence, 1 on the eleventh, 2 on the twelfth, 1 on the twenty-fourth, 1 on the twenty-sixth, 1 on the thirtieth, and 1 on the sixty-fifth. All made a good recovery.

**TREATMENT.**—The quantity of antitoxic serum administered varied from 2,000 units up to 44,000 units. On an average, each recovered patient got 9,000 units, and each fatal case got 11,000. Mild cases got, on an average, 5,000 units, moderately severe cases got 8,000 units, and very severe cases got 16,000 units. The averages are rather below those of 1911.

Only 6 patients received antitoxin before admission. The antitoxin was administered subcutaneously in the abdominal wall.

As in previous years, the administration of serum was recommenced in those cases in which paralysis appeared, with results which quite justified the procedure. In this way some patients got very large amounts of serum—one getting as much as 44,000 units.

An urticarial rash followed the administration of the serum in 21 cases, 14 of whom were in the hospital at the beginning of the year. In 1911, serum rashes occurred in 61 cases. In over a half of the patients the rash appeared between the sixth and tenth days after the administration of the serum. In one case it was observed as early as the third day, and in another its appearance was delayed till the seventeenth day.

In 2 cases—both of whom had serum readministered on account of paralysis—the rash appeared twice; in one on the ninth and seventieth days of illness; in the other on the eleventh and fifty-second days.

Arthritis occurred in 2 cases, on the twelfth and seventeenth days respectively. One of these patients had also considerable puffiness of the face. Neither of the cases needed any special treatment.

The total number of swabs taken from the throats of patients during the year was 395, of which 218 were negative and 167 positive. The average number of swabs taken from each patient was three. Thirty-two patients never gave a positive swab during their residence in hospital, in spite of the fact that many of them were either moderate or severe cases.

SECOND ATTACKS occurred in 3 cases, 1 of whom had also scarlet fever on admission. One patient (a man) had been dismissed from this hospital only two months before. Another patient had a second attack in hospital on the thirty-first day.

### Enteric Fever.

There remained in the hospital at the close of 1911, three cases of enteric fever admitted as such. During the year 18 cases were sent in, notified as suffering from this disease. This is the smallest number of enteric admissions in the history of the hospital, being rather more than half the previous lowest, in 1897. Of the 18 cases notified, 2 had been wrongly diagnosed, so that 19 cases of enteric, admitted as such, were treated during the year. In addition a patient, sent in as suffering from typhus, proved to be a case of enteric, so that 20 undoubted cases were treated. Of that number 12 were dismissed well, 3 died, and 5 remained in hospital at the end of the year.

REMOVAL TO HOSPITAL.—Of the 17 cases admitted during the year, removal to hospital was carried out as follows:—

- In 3 cases during the first week of illness.
- In 6 cases during the second week of illness.
- In 4 cases during the third week of illness.
- In 4 cases later than the third week of illness.

Of the fatal cases, 1 was admitted on the sixth day of illness, 1 on the thirteenth day, and 1 on the twenty-fifth day.

AVERAGE DURATION OF RESIDENCE of all cases discharged was 36·9 days; of recovered cases 37; of fatal cases 36·3.

One of the fatal cases (a boy of 17) was resident 94 days. He was admitted on the twenty-fifth day of illness, and apparently made a fairly good recovery, being able to go outside. On the sixty-eighth the temperature rose and became very irregular. Symptoms developed suggestive of abdominal tuberculosis, and he died on the ninety-fourth day. A *post-mortem* was refused.

TYPE OF THE DISEASE.—There was one case presenting practically no symptoms, the diagnosis depending almost wholly on a positive Widal reaction.

In other 4 cases the attack was mild; in 6 cases it was moderate; and in 9 cases, severe.

A positive Widal had been obtained in 3 cases before admission. The case notified as typhus never gave a positive Widal, but clinically the picture was that of a typical enteric case. All the others were positive.

In eleven cases, the characteristic rose-spots were present, and in two of these they were abundant.

FATAL CASES.—Of the undoubted cases of enteric treated during the year, 3 died. The causes of death were as follows:—One, a boy aged 11, had a relapse on the twenty-sixth day of illness, and died from exhaustion on the thirty-ninth day; a man, of 26, died on the eighteenth day from toxæmia and weakness, due to a severe hæmorrhage; the third is the case mentioned above who died on the ninety-fourth day.

The fatality rate, calculated on discharges, was 20 per cent., but the smallness of the number of cases treated makes such a figure misleading.

COMPLICATIONS.—*Hæmorrhage* from the bowel occurred in 2 cases (1 moderate and 1 severe); *otitis media* in one case; *suppurative parotitis* in one case; *suppuration in knee-joint*, 1 case; *abscess* in left arm, 1 case; *bronchitis*, well marked, in 1 case; *abdominal tuberculosis*, 1 case; *relapse*, in 2 cases, one of whom died 13 days after the relapse commenced, and the other recovered, the relapse having lasted for 10 days.

CORRECTED DIAGNOSIS.—Two cases sent in as enteric had been wrongly diagnosed. A girl, aged 8, proved to be suffering from no infectious disease. She was resident 22 days. The other was a man, aged 34, who proved to be suffering from lobar pneumonia. He died 10 hours after admission, and the diagnosis was confirmed *post-mortem*.

### Typhus Fever.

During the year 2 cases were sent in, notified as typhus fever. One of these had been wrongly diagnosed, the case being enteric fever. The other, a boy of 18, was a genuine case, and was quite typical. He had been in the Royal Infirmary with pneumonia, and had been sent to the country to recuperate, when he took the disease. The source of the infection was never quite clear. The rash was good, and he had crisis on the fourth day after admission. He was discharged recovered after a residence of twenty-four days.

### **Cerebro-Spinal Fever.**

A girl of 16 was sent in, said to be suffering from this disease. She complained of severe headache and backache, but rigidity and retraction were both absent. She had, also, violent pains in the arms. Lumbar puncture was done, and a quantity of clear fluid drawn off which, on examination, was found to be negative. A Widal reaction was also done, and this also was negative. She died after 9 days' residence.

### **Erysipelas.**

Twelve cases (9 males and 3 females) of this disease were admitted during the year. Two of these proved to have been wrongly notified. Of the 10 genuine cases, 8 recovered and were dismissed, and 2 remained in hospital at the close of the year.

The ages of the cases varied from 14 to 64. Two were under 20, two between 20 and 30, two between 30 and 40, two between 50 and 60, and two were over 60. Seven of the cases were removed to hospital in the first week of illness, and 3 in the second week. Eighteen days was the average duration of residence of those discharged. Of the cases admitted, 2 were mild, 3 were of moderate severity, and 5 were severe. Four of the cases developed the disease after wounds. There was no history of a wound or scratch in any of the others.

In 7 of the patients the face was affected, in 1 case the arm, and in 2 cases the leg. In one patient it was a second attack.

One patient developed an extensive cellulitis of the leg, requiring extensive incision. Another had suppuration in the submaxillary glands and also in the eyelids.

One of the patients had had an ununited fracture of the tibia for two years. This had been operated on several times without success. After the erysipelas, which was on the injured leg, the bones united well.

Of the two cases wrongly diagnosed, one of them, a woman of forty, was found to be suffering from puerperal fever, of which she died five hours after admission. No erysipelas could be seen. The other case was a man, age 67. After admission he was found to be suffering from stricture of the urethra, with extensive extravasation of urine. He was removed to the Royal Infirmary the morning after admission.

### **Puerperal Fever.**

Eleven cases of this disease were admitted as such during the year, and in addition a case notified as erysipelas was found to be suffering from puerperal fever, so that 12 cases were under treatment. Of this number, 7 were discharged recovered, 4 died, and 1 remained in hospital at the close of the year. The average duration of residence



of the recovered cases was 42·7 days; of the fatal cases, 10 days. In 5 cases a doctor had been present at the confinement; 3 of these patients died.

In 4 cases a midwife had been present; 1 of these cases died.

In 3 cases neither a doctor nor a midwife had been present.

FATAL CASES.—Mrs. B. (aged 26), admitted 14 days after confinement. On admission, the uterus was found to be well involuted; there were no abdominal distension, very slight pelvic tenderness, no foul discharge from the vagina. There was a large bed-sore on the sacrum. Temperature 106° F., and wild delirium. The temperature swung a good deal, but kept touching high levels. She died after a residence of 31 days, the symptoms having shown no abatement. The Widal and the cerebro-spinal fluid were both negative. *Post-mortem*, no septic focus was found; the liver was large and fatty; the spleen soft and febrile. Much fluid was found at the base of the brain.

Mrs. R. (aged 27) had bronchitis on admission. She died on ninth day of residence.

The other two cases were in a state of collapse on admission; one died in 5 hours, and the other in 2 days.

COMPLICATIONS.—*Suppurative Mastitis* in 1 case on fourteenth day. *Venous Thrombosis* in 2 cases, in one of whom the condition was present at the time of admission, and in the other it appeared on the eighteenth day. These two patients were resident 87 and 78 days respectively. *Albuminuria* which lasted for 30 days, was present in one case. She had also *Pyuria* for 10 days. *Bedsore*, present before admission, in 1 case.

A patient, aged 32, was found to be suffering from carcinoma. She was sent home as a preliminary to going to the Royal Infirmary, where she was operated on and died.

### Measles.

During the year 9 patients were admitted, notified as suffering from measles. In addition, 4 cases of scarlet fever and 2 cases of diphtheria had measles at the time of admission, while 5 cases notified as scarlet proved to be measles. Thus 20 patients were suffering from measles when brought into hospital. There were also 7 diphtheria patients, remaining from 1911, who had been cross-infected with measles, and during the year 4 scarlet fever patients contracted the disease in the wards, so that in all there were 31 cases of measles treated.

Dealing only with the 9 cases sent in as measles, two were aged 6 years, one was 9, one was 10, one was 11, two were 13, one was 20, and one was 21. Koplik's spots were present in 4 of the above cases on admission. The average duration of residence was 22 days. There were no deaths from measles during the year.

### Phthisis Pulmonalis.

One case of phthisis remained in hospital from 1911. During 1912, there were 73 cases admitted, but of these, one was a girl who was admitted twice. So that 72 patients were admitted and 73 patients treated. The number of admissions for this disease has only once been exceeded—in 1906. Of the 73 cases, 50 were discharged, 12 died, and 11 remained in hospital at the close of the year.

Of those admitted, 6 had previously been treated in Lightburn, 1 in the Middle Ward Hospital at Motherwell, and 1 in Invergarry Sanatorium.

**FAMILY HISTORY.**—So far as could be ascertained, in 7 cases there was a history of tuberculosis in the family. In only 3 cases did the patients report tuberculosis among relatives outside the family. One patient had probably been infected by his wife, who had died of phthisis. In three cases a definite history of phthisis among fellow-workers was got.

A definite history of tuberculosis in a family is not easily got, as patients are often ignorant regarding their relatives, more especially those outside the immediate family circle.

**OCCUPATIONS** of 26 males were as follows:—Clerks, 3; miners, 2; moulders, 2; machinemen, 2; plumbers, 2; labourer (painter's), 1; labourer (brickworks), 1; labourer (unspecified), 2; wine-warehouseman, 1; soft-goods salesman, 1; butcher, 1; grocers, 2; farm servant, 1; signalman, 1; caulker, 1; chauffeur, 1; storekeeper, 1; craneman, 1.

Of females:—Weavers, 3; domestic servants, 2; confectionery workers, 2; paper-mill workers, 2; print worker, 1; bleachfield worker, 1; biscuit packer, 1; hair-worker, 1; rope-worker, 1; pit-head worker, 1; warehouse worker, 1; cash girl, 1; bookbinder, 1; tailoress, 1.

The above list includes the former occupations of married women. All the other female patients were housewives or girls employed at home. There were also 10 school-children.

**HOUSING ACCOMMODATION.**—19 per cent. of the patients came from single-apartment houses with an average of 3 inmates; 58 per cent. from two-apartment houses with an average of 6 inmates; 15 per cent. from three-roomed houses with an average of 3 inmates; 4 per cent. from five-roomed houses, with an average of 5 inmates; 4 per cent. from six-roomed houses with an average of 6 persons.

**AGE.**—Thirty-five of the patients were males, and 38 females. The ages were as follows:—Under 10 years, 2; 23 were between 10 and 20;

24 between 20 and 30; 11 between 30 and 40; 9 between 40 and 50; 2 between 50 and 60; 2 were over 60. It will thus be seen that 60 per cent. of the cases were between 20 and 50 years of age.

Of the 12 fatal cases, 8 were between the ages of 18 and 32, one was under 18, and 3 were over 32.

**AVERAGE DURATION OF RESIDENCE** of discharged cases was 81 days, excluding 3 patients who left at their own request after a short stay in hospital; of the fatal cases, 32.1. Two of the fatal cases died within 48 hours of admission, and another died after 5 days' residence. Of the two former, one died as the result of severe hæmoptysis, and the other was only semi-conscious at the time of admission.

**HISTORY OF THE DISEASE.**—In 12 cases, according to the patients, the disease began with a cough, in 5 with loss of appetite and indigestion, in 4 with general weakness, in 4 with loss of weight, in 5 with hæmoptysis, in 1 with breathlessness, in 1 with night-sweats, and in 2 with laryngitis. In 2 cases the disease followed an attack of pleurisy, in 1 influenza, in 1 pneumonia, in 1 rheumatic fever, and in 2 cases child-birth. All the others attributed the onset to "chill" or a "neglected cold."

**STAGE OF THE DISEASE AND RESULTS.**—Ascribing the stage of the disease according to the extent of the damaged lung, we find that of the 62 cases who were either dismissed or died, 20 were in the first stage (total involvement less than half a lobe), 19 were in the second stage (total involvement equal to one lobe), and 23 were in the third stage (total involvement of one lung or equal).

The following table indicates the relation of these cases to the amount of constitutional disturbance, excluding the three patients who went home after a very short stay (one of these was a first stage case, and the other two were third stage):—

	None, or very slight constitutional disturbance, with normal temperature.	Moderately severe constitutional disturbance.	Severe constitutional disturbance.
19 first stage, . . .	15	4	...
19 second stage, . . .	13	5	1
21 third stage, . . .	5	8	8

The results of the treatment are indicated in the following table :—

	Arrested.	Improved.	Progressive.	Died.
19 first stage, - -	4	14	1	...
19 second stage, -	6	11	2	...
21 third stage, - -	6	3	...	12

Seven of those under "improved" were very much improved. Three of the second stage cases increased in bodily weight by 16, 26, and 50 lbs. respectively.

**FATAL CASES.**—All were third-stage cases. Two died within 48 hours of admission, one of whom was semi-comatose on admission and up till the time of death; the other died as the result of severe hæmoptysis. One patient, who was moribund on admission, was resident five days. One died of severe hæmoptysis on the eleventh day of residence. Two were resident thirteen days, one was fourteen days, and one was sixteen days. Of the others one was resident fifty-nine days: he died suddenly, the cause of death not being known. Another patient, who was operated on for empyema after admission, died on the seventy-third day.

**COMPLICATIONS.**—*Albuminuria*, sufficient to call for treatment, occurred in 10 cases. One patient had *cystitis and pyuria* on admission. This case had also extensive bed-sores at the time of admission. *Hæmoptysis* occurred in 7 patients, in 2 of whom it was the cause of death. *Laryngitis* in 2 cases. *Empyema* in 1 case.

The following cases are of interest :—A.M. (a girl, aged 17), with extensive involvement of both lungs, and cavities, had a daily range of temperature from 97° F. to 104° F. for nearly two months. After that the temperature gradually fell, and the patient did well. When she was dismissed on the 163rd day of residence, the temperature had been normal for some time, and the patient was able to take short walks. She died about three months after discharge.

J.M. (a man, age 66) had had phthisis diagnosed, in the Edinburgh Royal Infirmary, in 1860. He was under treatment in the Glasgow Royal Infirmary for the same disease in 1884, and in the Western Infirmary in 1898 and 1912. The sputum contained T.B., but beyond the remains of an old pleurisy nothing could be made out, and the patient had practically no symptoms.

**TREATMENT.**—The treatment followed the usual lines, but in addition, 20 patients got tuberculin. Of these, 15 received injection of Spengler's I.K. serum. The results of the use of this serum were much too indefinite to lay any stress on, and its use is being continued meantime. Four patients were treated with P.T.O. and all did well. Six months after discharge all these four were known to be doing a full day's work and to be keeping well. One patient, remaining till 1913, was treated with Beraneck's tuberculin.

Over a considerable part of the year, the use of antiseptic inhalations was tried, but the results were not encouraging.

In hospital it is always a difficult matter to say how much of the improvement in a patient is due to special methods of treatment, such as tuberculin, and how much to the general hygienic dietary measures taken.

**RESULTS.**—When patients leave the hospital they are requested to keep in touch with the hospital by letter or by calling. Of the 50 cases discharged, the after-history of 32 is known at the time of writing (May, 1913). Of that number 7 are dead; 1 is in another hospital, in a very advanced stage of the disease; 4 are in Lightburn, 2 of whom are much worse than at the time of their dismissal, and the other 2 are about the same; 3 are living at home, but are not well; 2 are well, but not working; while 15 are well and able to follow their usual employment (this 15 includes housewives able to attend to their household duties).

#### **Other Diseases.**

**SCABIES.**—Two cases of scabies, one aged 15 and one aged 29, were admitted as such during the year. Both were discharged well after residences of 10 and 15 days respectively.

**OPHTHALMIA.**—A child of 2 years was admitted suffering from this disease. The patient had also stomatitis on admission. He was dismissed well after a residence of 28 days.

**WHOOPING COUGH.**—Two cases were admitted as such. One of them, a baby 5 months old, had been wrongly notified, the case being one of bronchitis. This patient was dismissed well on the fifteenth day of residence. The other case, a child aged 5 years, had also scarlet fever on admission. She was resident 87 days.

**INFANTILE DIARRHŒA.**—An infant, aged 4 weeks, was in hospital for 29 days on account of this disease.

#### **Ambulance Work.**

A record of this work will be found in Table V. of the Appendix.

During the year the ambulance made 668 journeys, calling at 714 houses and bringing 754 patients.

Called at 1 house, and brought in 1 patient.	601 times.	
„ 1 „ „ 2 patients.	24 „	
„ 1 „ „ 3 „	5 „	
„ 2 houses, „ 2 „	26 „	
„ 2 „ „ 3 „	4 „	
„ 3 „ „ 3 „	7 „	
„ 3 „ „ 5 „	1 time.	
⏟	⏟	⏟
714 houses.	754 patients.	668 journeys.

In addition, 7 runs were made in taking patients home (3 to Shettleston, 1 to Gartcosh, and 1 to Bargeddie—all phthisis patients; 1 diphtheria patient to Carmyle, and 1 erysipelas case to Cambuslang). Two phthisis patients were met by the ambulance at Shettleston Station. One journey was made in removing a patient from Longriggend Hospital to Lightburn, and another in taking a phthisis patient from Lightburn to Stonehouse Hospital. A case, wrongly notified as erysipelas, was removed to the Royal Infirmary. At the request of the Public Health Authority, a case of measles was taken in the ambulance from Cambuslang to Provanmill. A journey was also made to Eastfield, but the patient refused to come in by ambulance. Another journey was made to Hallside, but the patient was not found, and there was also a run to Shettleston, but the patient had died before the ambulance arrived. Thus, a total of 685 journeys were made, with an approximate distance of 6,000 miles. On 117 occasions an attendant, in addition to the nurse, accompanied the ambulance.

Twenty-four phthisis patients walked to the hospital, as did also 2 scabies and 1 diphtheria. Two phthisis patients were brought in by private conveyances, and two infants were carried to the hospital by their mothers.

The Sanitary Inspectors notified 148 cases; the Lower Ward office notified 41, and the Middle Ward office 4 cases. The others were notified by the doctor in attendance.

#### Disinfection.

The disinfectant and destructor were in constant use throughout the year. In addition to what was required in the hospital, there were 24 sets of bedding or clothing sent in to be disinfected, and 10 to be destroyed.

### Staff.

At the close of the year the indoor staff consisted of a physician, matron, 4 sisters, 2 trained nurses, 14 probationer nurses, 3 ward-maids, 3 house-maids, 2 laundry-maids, 1 kitchen-maid, and a cook—32 in all.

The outdoor staff consisted of a mechanic, 2 assistant mechanics, a gardener-attendant, and a chauffeur—5 in all.

**STAFF ILLNESSES.**—At the beginning of the year there were two nurses off duty—one with diphtheria and one with measles. During 1912 there was one nurse off for ten days with tonsillitis, and in December another nurse took a severe attack of diphtheria: she was still off duty at the close of the year.

During the year the usual course of lectures on anatomy, physiology, and fevers was given by the superintendent, and the nurses who came forward were successful in obtaining the hospital certificate.

An additional course of lectures on hygiene was given for those nurses who went in for the examinations recently instituted by the Local Government Board. The three nurses who went in for the anatomy, physiology, and hygiene part of this examination—Nurses Barclay, Paul, and Thomson—were all successful, Nurse Paul passing with distinction in anatomy and physiology.

### Grounds and Buildings, &c.

The four large pavilions were in constant use throughout the year, and the observation wards were utilised to an unprecedented extent.

During the year numerous minor repairs were carried out.

In the month of February the old horse ambulances were done away with and a new motor-ambulance got. The ambulance, which is a "Dennis," has given satisfaction throughout the year, and has been found to do the work in less than one-third of the time taken by the horse-drawn vehicles. The distance recorded by the speedometer—which was not got till March 20th—was 5,098 miles. The petrol consumed works out at 13 miles per gallon.

In concluding the year's Report I have again to express my indebtedness to the matron, sisters, nurses, and all the other members of the staff for their courtesy and assistance in carrying on the work of the hospital.

I am, GENTLEMEN,

Your obedient Servant,

ANDREW D. COWAN.

TABLE I.

ADMISSIONS (INCLUDING CONTACTS) AND DISCHARGES (ACCORDING TO NOTIFICATION) DURING 1912, WITH THE NUMBER OF PATIENTS IN HOSPITAL AT THE BEGINNING AND END OF THE YEAR.

DISEASE	In Hospital on 1st January, 1911.	Admitted.	DISCHARGED.		Remaining in Hospital on 31st December, 1912.
			Recovered.	Died.	
Scarlet Fever, . . .	53	483	451	9	76
Enteric Fever, . . .	3	18	12	4	5
Diphtheria, . . .	33	172	182	15	9
Erysipelas, . . .	2	12	11	1	2
Puerperal Fever, . . .	...	11	7	3	1
Cerebro-Spinal Fever, . . .	...	1	...	1	...
Phthisis, . . .	1	73	51	12	11
Measles, . . .	...	9	9	...	...
Typhus, . . .	...	2	2	...	...
Whooping-cough, . . .	...	2	2	...	...
Pediculosis and Scabies, . . .	...	2	2	...	.
Ophthalmia, . . .	...	1	1	...	...
Infantile Diarrhœa, . . .	...	1	1	...	...
Total, . . .	93	787	731	45	104

TABLE II.

ADMISSIONS AND DISCHARGES IN EACH MONTH OF YEAR 1912.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Admitted, . . .	76	59	61	64	82	39	54	64	59	76	72	81	787
Discharged—													
Recovered, . . .	77	58	67	36	75	62	54	55	44	72	69	62	731
Died, . . .	5	1	3	2	5	4	2	5	2	3	3	10	45



TABLE III.—DISCHARGES AND DEATHS (UNDOUBTED CASES) CLASSIFIED ACCORDING TO AGE.

Scarlet Fever Discharged.			Enteric Fever Discharged.			Diphtheria Discharged.		
Age.	Recovered.	Died.	Age.	Recovered.	Died.	Age.	Recovered.	Died.
0-1,	4	...	0-5,	1	...	0-1,	3	...
-2,	13	2	-10,	1	1	-2,	9	5
-3,	21	3	-15,	4	1	-3,	18	2
-4,	31	1	-20,	2	...	-4,	19	2
-5,	43	...	-25,	...	1	-5,	16	2
-6,	50	2	-30,	2	...	-6,	17	1
-7,	41	1	-35,	...	...	-7,	12	3
-8,	41	...	-40,	3	...	-8,	19	...
-9,	36	...	-45,	...	...	-9,	6	...
-10,	33	...	-50,	...	...	-10,	11	...
-15,	89	...	55 and over,	...	...	10-15,	20	...
-20,	15	...				-20,	10	...
20 and over,	9	...				20 and over,	16	...
Total,	426	9		12	3		176	15
Average Fatality per cent.,	} 2.07			} 2.0			} 7.9	

TABLE IV.

## Complications OBSERVED IN CASES DISCHARGED IN 1912.

## SCARLET FEVER.

	Nephritis.	Otitis Media.	Mastoiditis.	Arthritis.	Adentis.	Rhinorrhoea.	Suppurative Adentis.	Perionchylia.	Heart Murmurs.
426 Recovered Cases, -	3	56	2	16	29	55	5	11	3
9 Fatal Cases, - -	...	4	...	...	6	5	1	...	...
Total, 435 Cases, -	3	60	2	16	35	60	6	11	3
Percentage, - - -	0·7	13·7	·43	3·7	8·0	13·7	1·4	2·5	0·7

## ENTERIC FEVER.

	Hæmorrhage.	Otitis Media.	Abscesses.	Bronchitis.	Suppurative Parotitis.	Relapse.
12 Recovered Cases, - - - -	1	1	2	1	1	1
2 Fatal Cases, - - - -	1	...	...	...	...	1
Total, 15 Cases, - - - -	2	1	2	1	1	2
Percentage, - - - -	1·3	6·6	1·3	6·6	...	1·3



TABLE VI.

PATIENTS CLASSIFIED ACCORDING TO THE DAY OF THE DISEASE WHEN ADMITTED.

SCARLET FEVER (454 undoubted cases).

Day of Illness, -	1.	2.	3.	4.	5.	6.	7.	over 7.
Cases, - - -	29	150	115	75	35	12	20	18
Week of Illness, -	-	-	-	-	-	I.	II.	III. and over.
Cases, - - -	-	-	-	-	-	416	13	5

ENTERIC FEVER (17 cases).\*

Week of Illness, -	-	-	-	-	-	I.	II.	III. and over.
Cases, - - -	-	-	-	-	-	3	6	8

\* Includes a case notified as typhus which proved to be enteric.

DIPHTHERIA (166 undoubted cases).

Day of Illness, -	1.	2.	3.	4.	5.	6.	7.	over 7.
Cases, - - -	6	35	36	37	16	11	5	20

TABLE VII.

ADMISSIONS SINCE OPENING OF HOSPITAL.

YEAR.	Scarlet Fever.	Enteric Fever.	Diphtheria.	Erysipelas.	Puerperal Fever.	Measles.	Whooping-cough.	Pituitis.	Cerebro-spinal Fever.	Typhus.	Quarantine.	Anthrax.	Skin Disease.	Other Diseases.	TOTAL.
*1896,	99	49	6	3	2	8	...	...	...	...	...	...	...	...	167
1897,	257	33	10	...	...	5	...	...	...	...	...	...	...	2	307
1898,	221	131	3	2	1	1	1	...	...	...	...	...	...	...	360
1899,	561	149	15	4	...	3	...	...	...	...	4	...	...	...	736
1900,	470	94	22	2	...	7	...	...	...	26	...	...	...	...	621
1901,	340	120	18	2	3	6	1	...	...	...	9	...	...	...	499
1902,	226	94	27	10	3	...	...	...	...	35	...	...	...	...	395
1903,	209	86	59	13	1	3	2	...	...	75	...	...	...	1	449
1904,	182	71	47	7	2	3	...	...	...	172	...	...	...	8	492
1905,	127	97	69	12	8	16	2	40	...	11	...	...	...	3	385
1906,	173	185	63	15	6	6	...	89	22	...	5	...	...	1	565
1907,	210	81	134	13	8	4	3	72	41	...	25	...	...	4	595
1908,	322	73	213	11	11	32	...	49	31	6	20	...	...	4	772
1909,	522	74	211	13	3	1	...	2	6	...	6	...	...	...	838
1910,	458	54	158	6	7	5	...	48	3	...	11	1	6	...	757
1911,	371	44	199	10	4	6	4	45	3	...	7	...	9	4	706
1912,	483	18	172	12	11	9	2	73	1	2	...	...	2	2	787
	5,231	1,453	1,526	135	70	115	15	418	107	8	406	1	17	29	9,431

\* From May 29th.

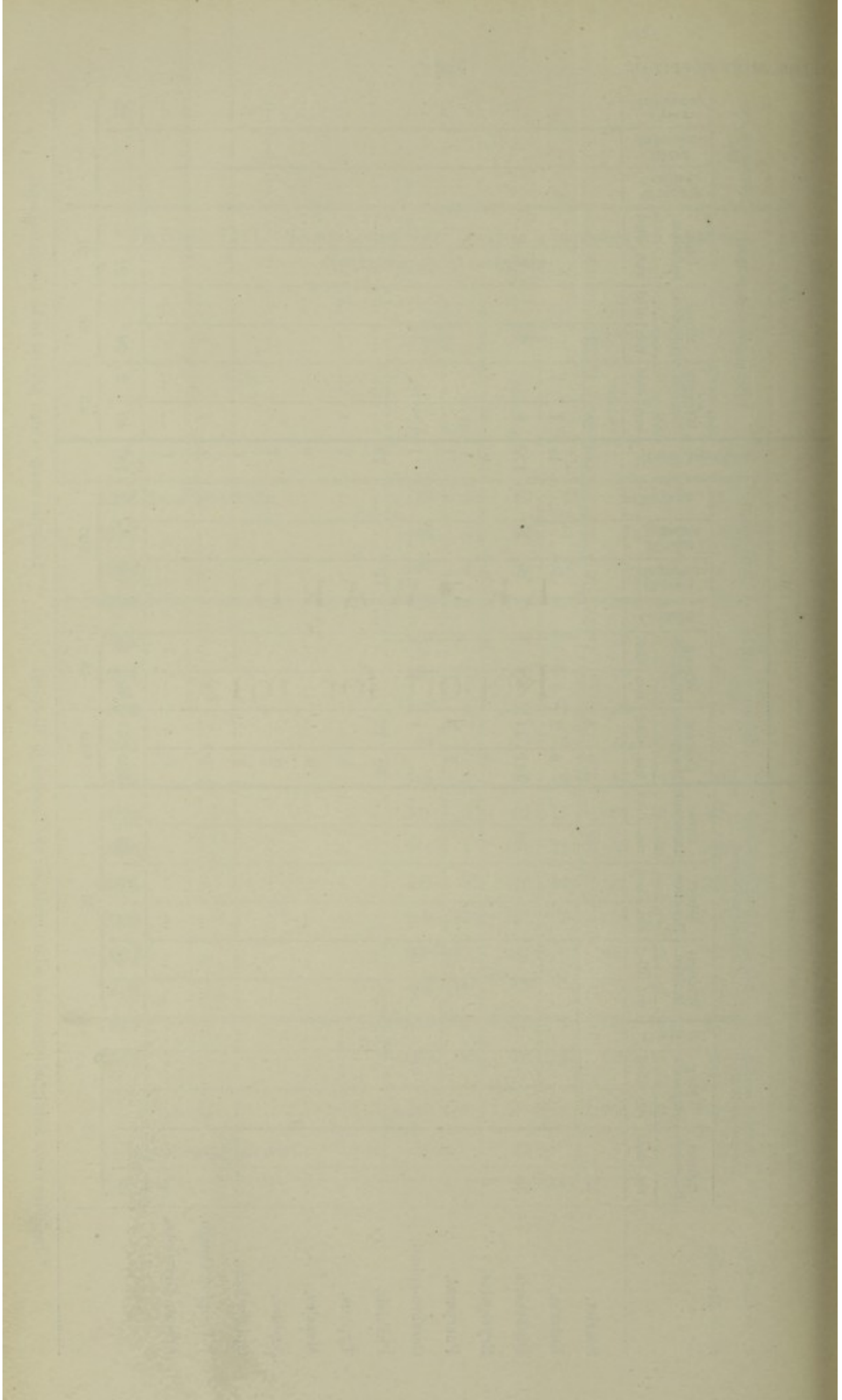
TABLE VIII.—DISCHARGES AND DEATHS ACCORDING TO DISEASE NOTIFIED ON ADMISSION.

YEAR.	SCARLET FEVER.		ENTERIC FEVER.		DIPHTHERIA.		ALL OTHERS.	
	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.
1896 (from May 29th),	52	5	40	6	5	1	12	1
1897,	186	5	30	2	7	3	5	2
1898,	201	4	82	25	3	...	4	...
1899,	480	23	136	27	12	3	7	1
1900,	465	22	80	18	20	2	9	...
1901,	366	10	90	17	16	2	9	2
1902,	207	8	82	11	18	6	31	7
1903,	198	5	75	17	44	7	21	2
1904,	188	3	53	6	36	4	34	3
1905,	131	3	68	17	60	10	61	6
1906,	164	4	161	32	56	4	102	30
1907,	198	6	76	13	121	10	136	40
1908,	280	16	67	8	170	23	141	32
1909,	503	17	67	9	210	16	25	4
1910,	450	10	44	7	147	15	71	13
1911,	361	9	42	4	151	19	92	11
1912,	460	9	12	4	182	15	86	17
TOTAL,	4,890	159	1,205	223	1,258	140	846	161
Average Fatality per cent.,	2·25		18·5		11·2		19·	

	PART A. CASES REMAINING FROM 1911 AND DISCHARGED DURING 1912.						PART B. ALL CASES ADMITTED UNDER DISEASE INDICATED DURING 1912.						PART C. CASES ADMITTED UNDER SOME OTHER INFECTIOUS DISEASE DURING 1912.														
	Admitted under Disease Indicated.			Admitted under some other Infectious Disease.			Discharged during 1912.			Remaining to 1913.			Discharged during 1912.			Remaining to 1913.											
	Correct Diagnosis.		Wrong Diagnosis.	Wrongly Notified.		Mixed Infection.	Cross Infection.		Correct Diagnosis.		Wrong Diagnosis.	Contacts.	Correct Diagnosis.		Wrong Diagnosis.	Contacts.	Wrongly Notified.		Mixed Infection.	Cross Infection.		Wrongly Notified.	Mixed Infection.	Cross Infection.			
	rec.	died	rec.	died	rec.	died	rec.	died	rec.	died	rec.	died	rec.	died	rec.	died	rec.	died	rec.	died	rec.	died	rec.	died			
<i>c.</i> = Ch. Pox.																											
<i>m.</i> = Measles.																											
Scarlet,	53	...	...	...	...	...	...	370	8	1*	...	76	...	...	...	483	28*	1*	21	...	13	...	...	...			
Enteric,	3	...	...	...	...	...	...	8	3	1	...	5	...	...	...	18	1	1	...	...	...	...	...	...			
Diphtheria,	33	1	...	...	...	...	...	141	14	8	...	9	...	...	...	172	8	...	7	...	8	...	...	...			
Erysipelas,	5	...	...	...	...	...	...	8	...	1	...	2	...	...	...	12	1	1	...	...	...	...	...	...			
Puerperal,	...	...	...	...	...	...	...	7	3	...	...	1	...	...	...	11	...	...	...	...	...	...	...	...			
Cerebro-spinal,	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...			
Phthisis,	1	...	...	...	...	...	...	50	12	...	...	11	...	...	...	73	...	...	...	...	...	...	...	...			
Typhus,	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2	1	...	...	...	...	...	...	...			
Measles,	...	...	...	...	...	...	...	9	...	...	...	...	...	...	...	9	...	...	...	...	...	...	...	...			
Scabies,	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...			
Ophthalmia,	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...			
Whooping Cough,	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2	1	...	1	...	...	...	...	...			
Infant. Diarrhoea,	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...			
	92	1	...	...	...	...	...	599	41	40	3	104	...	...	...	787	40	3	29	...	21	...	...	25			
	93			25			640			43			104			43			29			21			25		

\* Includes cases admitted as scarlet who developed the disease in Hospital.

\*\* Includes cases which proved to be non-infectious.



STATE  
PUBLIC HEALTH DEPARTMENT  
LOWER WARD DISTRICT

LOWER WARD.

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Annual Report for 1912.



STAFF.  
PUBLIC HEALTH DEPARTMENT.  
LOWER WARD DISTRICT.

---

**County and District Medical Officer.**

JOHN T. WILSON, M.D., D.P.H.

**Tuberculosis Officer and Asst. M.O.H.**

ROBERT RICHARDS, M.A., M.B., Ch.B., D.P.H.

**District Sanitary Inspector.**

WILLIAM S. BRUCE, Chryston.

**Inspector of Buildings.**

MATTHEW UNDERWOOD.

**Sanitary Inspectors.**

JOHN PHILIP, Bishopbriggs.

ROBERT M'KENZIE, Govan.

**Health Visitor.**

NURSE WINCHESTER.

---

**Lightburn Joint-Hospital (60 Beds\*).**

Physician-Superintendent, - ANDREW D. COWAN, M.B., Ch.B., D.P.H.

Matron, - - - - Miss S. MONTGOMERY.

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\* 30 beds owned by Lower Ward District Committee.

*November, 1913.*

COUNTY OF LANARK.

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DISTRICT OF THE LOWER WARD.

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Report by the Medical Officer of Health

FOR THE YEAR 1912.

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I.—VITAL STATISTICS.

By the Glasgow Boundaries Act, 1912, which came into operation on 5th November, this district lost about one-half of its total population, and fully one-third of its valuation, as shown in the following table:—

	Acreage.	Population (Census, 1911.)	Valuation, 1912-13.
Before Extension, ...	26,591	56,974	£344,671
After ,, ...	24,885	28,484	221,988
Reduction, ...	1,706	28,490	£122,683

For statistical purposes it was arranged with the City Medical Officer of Health to continue the records on to the close of the year as if no extension had taken place.

The **Population** at the middle of the year was estimated at **57,400**, and upon this estimate all the rates are calculated.

The number of inhabited houses at the beginning of 1912 was **10,977**, and of unoccupied houses **665**. The number of occupied houses, as taken from the Valuation Roll for the year 1912-13, is **5,516**, a decrease of **5,461**, due to the populous area of Shettleston and Tolleross and Govan Landward being now included in Glasgow, the number of unoccupied houses being **213**.

The following table shows the increase of the population during the two last decennial periods from the excess of births over deaths, compared with the actual increase as ascertained at the decennial censuses :—

		Population.				
		Total Births.	Total Deaths.	Natural Increase.	Actual Increase.	Difference, being Increase.
1891-1900,	...	12,004	5,778	6,226	16,912	10,686
1901-1910,	...	15,769	6,837	8,932	9,801	869

The decennial population for each registration district, as ascertained at the last three censuses, 1891, 1901, and 1911, is given in the following table :—

REGISTRATION DISTRICT.	CENSUS POPULATION.		
	1891.	1901.	1911.
Barony—			
Shettleston, ...	12,573	22,049	32,046
St. Rollox, ...	49	188	...
Dennistoun, ...	872	548	...
Maryhill, ...	995	1,185	112
Springburn, ...	...	...	398
Possilpark, ...	...	...	1,914
Garnghill, ...	...	...	611
Cadder, Eastern, ...	4,305	5,731	9,143
„ Western, ...	3,927	4,743	5,585
Carmunnock, ...	703	682	747
Govan, ...	2,679	7,298	2,394
Rutherglen, ...	4,158	4,749	4,024
District of the Lower Ward, ...	30,261	*47,173	56,974

\* Includes the population (5,642) in the area annexed by the Burgh of Govan as from 15th August, 1901.

The constitution of the population as regards age, sex, and conjugal condition, as ascertained at the last census, is given in the County portion of this report, but may be summarised as follows:—

	Males.	Females.	Both Sexes.
Single, ...	18,836	17,013	35,849
Married, ...	9,207	9,154	18,361
Widowed, ...	1,045	1,711	2,756
Not stated, ...	6	2	8
Total, ...	<u>29,094</u>	<u>27,880</u>	<u>56,974</u>

The percentage proportion of the population at quinquennial age periods, beginning with under 5 years and ending with ninety years and over, was as follows:—12·68, 11·82, 11·21, 9·55, 8·76, 8·02, 7·79, 7·13, 5·56, 4·63, 3·78, 2·78, 2·32, 1·78, 1·19, 0·58, 0·22, 0·09, 0·019. Not stated 0·01.

**Statistical Tables.**—Table A shows birth rates, death-rates from all causes, and infantile death-rates.

Table B contains a largely extended list of causes of death, with no reference to age, while tables B1 and B2 classify the deaths according to age groups. In table B1 the age groups are related to the cause of death, and in table B2 the age groups are related to the place of death—the parish or registration district.

TABLE A.—ANNUAL BIRTH-RATES AND DEATH-RATES PER 1,000 OF THE POPULATION. INFANTILE DEATHS PER 1,000 BIRTHS.

Year.	Births.	Birth-rate.	Nett Deaths.	Death-rate.	Infants under 1 year.	
					Deaths.	Death-rate.
1891	994	33·5	539	18·1	125	125·7
1892	1,090	35·1	537	17·3	154	141·2
1893	1,100	33·8	551	16·9	129	117·2
1894	1,019	29·9	491	14·4	106	104·0
1895	1,162	32·6	604	16·9	148	127·3
1896	1,201	32·2	541	14·5	156	129·8
1897	1,217	31·7	598	15·6	162	133·1
1898	1,329	33·1	579	14·4	154	115·8
1899	1,396	33·1	635	15·0	176	126·0
1900	1,496	34·0	703	16·0	198	132·3
<b>1891</b> to <b>1900</b> }	<b>1,200</b>	<b>32·9</b>	<b>577</b>	<b>15·9</b>	<b>150</b>	<b>125·2</b>
1901	1,487	34·3	755	17·4	212	142·5
1902	1,396	33·7	593	14·3	149	106·0
1903	1,561	36·4	576	13·4	165	106·0
1904	1,560	34·2	690	15·1	203	130·1
1905	1,586	34·8	585	12·8	166	104·6
1906	1,679	34·7	711	14·7	162	96·4
1907	1,573	31·7	730	14·7	160	101·7
1908	1,725	33·6	768	15·0	197	114·2
1909	1,603	30·8	708	13·6	167	104·1
1910	1,599	30·2	721	13·6	163	102·5
<b>1901</b> to <b>1910</b> }	<b>1,576</b>	<b>33·4</b>	<b>683</b>	<b>14·4</b>	<b>174</b>	<b>110·8</b>
1911	1,641	30·1	722	13·2	197	120·05
1912	1,633	29·9	703	12·8	169	103·49

TABLE B.—LOWER WARD.—Year 1912.—Population, Acreage, Births, and Deaths† in each Registration District, with Deaths classified according to cause.

REGISTRATION DISTRICT.	POPULATION.		ACREAGE, 1911.	BIRTHS.	DEATHS.		DEATHS CLASSIFIED BY CAUSE.																												Total.										
	Census, 1911.	Estimated to Middle of 1912.			Certified.	Uncertified.	Erysipelas.	Typhoid Fever.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Influenza.	Erysipelas.	Other Septic Diseases.	Puerperal Fever.	Cerebro Spinal Fever.	Poliomyelitis.	Meningeal Tuberculosis.	Abdominal Tuberculosis.	Other Tuberculosis.	Malignant Diseases.	Rheumatic Fever.	Measles (Sample).	Cerebral Haemorrhage.	Convulsions.	Other Nervous Diseases.	Cerebrovascular Diseases.	Dementia.	Brainlets.	Leprosy.	Other Respiratory Diseases.	Diphtheria.	Other Negative Diseases.	Violence.		Congenital Malformation.	Prenatal Death.	Atrophy, Debility, &c.	Accidents.	Injury at Work.	Suffocation.	Syphilis.	Rickets.	Other Defined Diseases.	Undefined Diseases.
Shettleton.	32,046	32,370	...	1,038	406	...	1	...	7	5	14	8	...	7	3	1	21	11	11	4	22	...	3	19	2	8	41	39	27	2	1	17	11	19	7	31	5	1	2	1	2	...	47	6	406
Springburn.	398	...	...	3	5	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
Maryhill.	112	...	6,986	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Postpark.	1,914	...	3,035	51	23	...	...	...	1	...	...	...	...	1	...	1	...	...	3	...	1	2	...	1	1	1	3	2	...	1	1	...	1	1	...	...	...	...	...	...	3	...	23		
Garnedhill.	611	...	...	12	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	
Cadder East.	9,145	9,250	...	248	114	...	...	...	6	2	4	3	...	1	1	...	9	2	1	...	7	...	2	8	...	1	10	6	8	...	2	5	6	...	5	4	...	...	...	...	21	...	114		
Cadder West.	5,585	5,600	13,963	151	79	2	...	...	4	...	...	...	...	2	...	7	...	1	3	...	2	4	...	2	10	4	6	...	2	6	1	4	1	2	6	1	1	...	...	12	...	81			
Camuznock.	747	747	3,473	9	6	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	6	
Govan.	2,394	2,394	859	1	4	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	4
Rotherglen.	4,024	4,024	1,311	120	53	...	1	...	5	...	...	1	...	...	...	2	1	...	2	...	...	3	...	2	6	9	2	...	1	2	3	...	1	1	...	1	...	...	...	...	8	2	53		
Total.	56,974	57,400	26,591	1,633	693	2	2	...	24	7	18	12	...	11	4	1	43	15	13	5	38	...	8	39	2	14	69	62	46	2	3	27	20	33	8	41	17	2	4	1	2	...	93	9	693

† These are the Net or Adjusted Deaths, having been corrected for Institutions and other Transfers in accordance with the Local Government Board's Instructions.

TABLE B-10

Section	Area (Acres)	Approximate Date of Survey	Remarks
1	100	1880	
2	200	1880	
3	300	1880	
4	400	1880	
5	500	1880	
6	600	1880	
7	700	1880	
8	800	1880	
9	900	1880	
10	1000	1880	
11	1100	1880	
12	1200	1880	
13	1300	1880	
14	1400	1880	
15	1500	1880	
16	1600	1880	
17	1700	1880	
18	1800	1880	
19	1900	1880	
20	2000	1880	
21	2100	1880	
22	2200	1880	
23	2300	1880	
24	2400	1880	
25	2500	1880	
26	2600	1880	
27	2700	1880	
28	2800	1880	
29	2900	1880	
30	3000	1880	
31	3100	1880	
32	3200	1880	
33	3300	1880	
34	3400	1880	
35	3500	1880	
36	3600	1880	
37	3700	1880	
38	3800	1880	
39	3900	1880	
40	4000	1880	
41	4100	1880	
42	4200	1880	
43	4300	1880	
44	4400	1880	
45	4500	1880	
46	4600	1880	
47	4700	1880	
48	4800	1880	
49	4900	1880	
50	5000	1880	

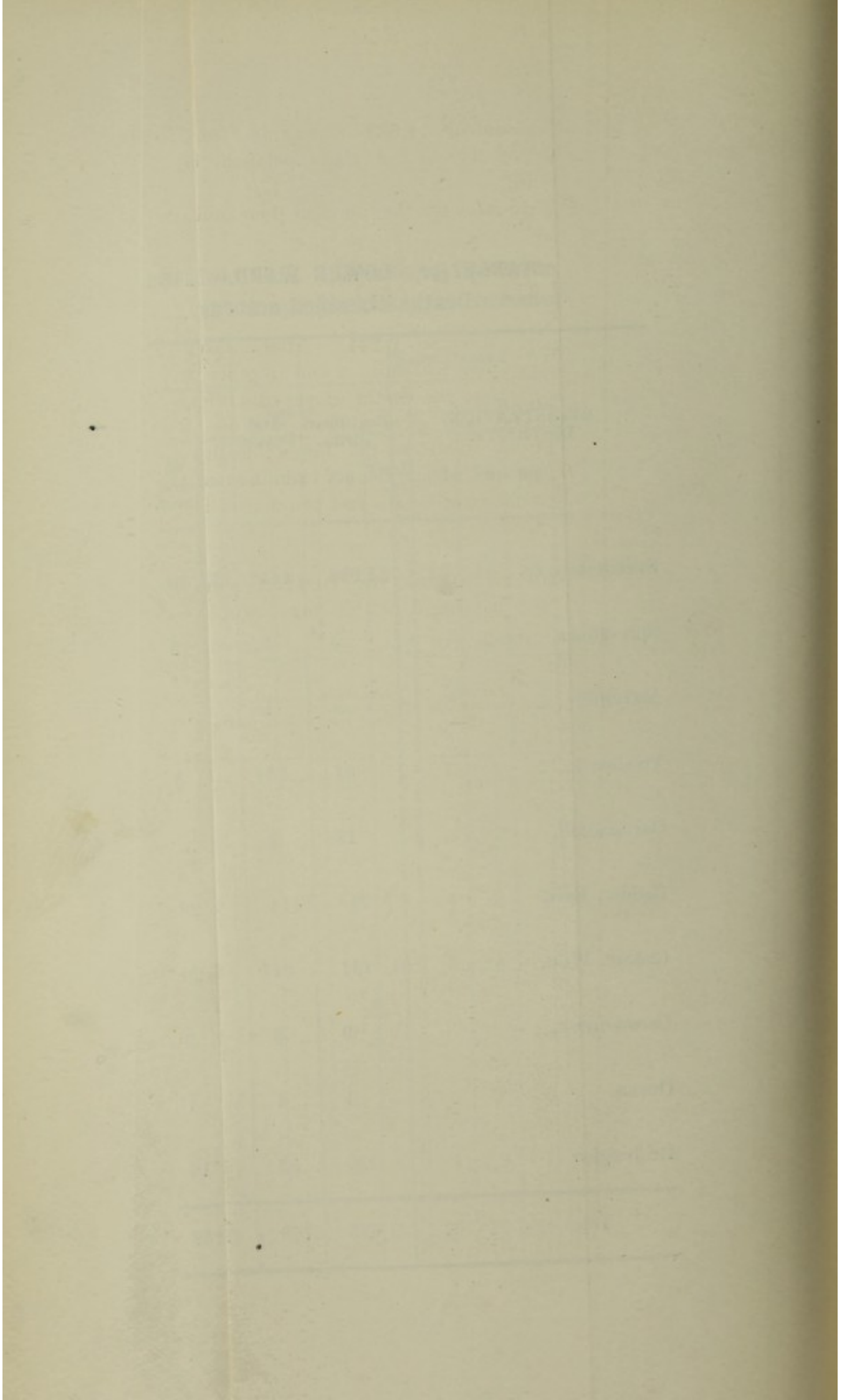






TABLE B<sup>2</sup>.—LOWER WARD.—Year 1912.—Births and Deaths in each Registration District. 326B2  
Deaths classified according to age periods, and corrected for Institutions, &c.

REGISTRATION DISTRICTS.	Registered Births.	Nett Deaths.	NETT DEATHS AT DIFFERENT AGE PERIODS.																
			Weeks.					Months.					Years.						
			-1	1-2	2-3	3-4	Total -4	1-3	3-6	6-9	9-12	Total -12	1-2	2-5	5-15	15-25	25-45	45-65	65 and over.
Shettleston, - - -	1,038	414	32	8	4	6	50	16	16	13	13	108	39	27	25	15	57	63	80
Springburn, - - -	3	5	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	2
Maryhill, - - -	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Possilpark, - - -	51	23	...	1	...	...	1	1	1	1	...	4	3	...	...	2	4	7	3
Garnghill, - - -	12	2	...	...	...	...	...	1	...	...	1	...	...	1	...	...	...	...	...
Cadder, East, - - -	248	114	7	...	2	...	9	4	8	3	4	28	3	6	3	10	17	19	28
Cadder, West, - - -	151	81	6	1	2	1	10	3	4	...	1	18	10	2	3	3	11	14	20
Carmunnock, - - -	9	6	1	...	...	...	1	...	...	...	...	1	...	1	...	...	...	2	2
Govan, - - -	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	1
Rutherglen, - - -	120	53	1	1	...	...	2	1	2	1	3	9	5	6	2	3	7	5	16
Total, - - -	1,633	703	47	11	8	7	73	25	32	18	21	169	61	42	34	33	100	112	152



The **Births** registered amounted to **1,633**—males, 846; females, 787. The birth-rate was **29·9** per thousand of the population, being the lowest birth-rate yet recorded.

The average annual birth-rates for the previous four quinquennia periods were as follows:—

1891-95.	1896-1900.	1901-05.	1906-10.
32·9	32·9	34·7	32·2

The **Deaths** registered amounted to **1,244**. After making corrections for deaths which occurred in institutions and in other districts, as shown in the following tables, the deaths of persons belonging to the district amounted to **703**, and gave a death-rate of **12·8** per thousand of the population. This is the lowest death-rate yet recorded during the whole period of County administration (see Table A). The average annual rates for the last two decennial periods were 15·9 and 14·4 respectively.

PUBLIC INSTITUTIONS SITUATED WITHIN THE DISTRICT WHERE SOME PERSONS NOT BELONGING TO THE DISTRICT DIED, WHOSE DEATHS ARE EXCLUDED:—

NAME OF INSTITUTION.	PARISH WHERE SITUATED.	POPULATION, POLICE CENSUS, DEC., 1912.	DEATHS.	
			Total during 1912.	Allocated to Lower Ward.
Barlinnie Prison, ... ..	Barony,	702	5	4
Mossbank Industrial School, ...	Do.	361	1	1
Parkhead Reformatory, ... ..	Do.	215	...	...
Dalbeth Convent and Schools,	Do.	431	2	...
Glasgow Truant School, ... ..	Do.	169	...	...
Lightburn Fever Hospital, ... ..	Do.	118	46	37
St. Mary's Industrial School,	Do.	216	...	...
Gartloch Sanatorium, ... ..	Do.	156	14	...
Convalescent Home, Lenzie,	Cadder,	104	1	...
Muckcroft Asylums, ... ..	Do.	62	...	...
Gartloch Asylum, ... ..	Do.	744	82	3
Children's Home, ... ..	Govan,	100	...	...
Shieldhall Fever Hospital, ... ..	Do.	158	45	...
Govan Combination Poorhouse, Asylum, and Hospital, ... ..	} Do.	1,699	460	...
<b>TOTAL, ... ..</b>	<b>...</b>	<b>5,235</b>	<b>656</b>	<b>45</b>

PUBLIC INSTITUTIONS SITUATED OUTWITH THE DISTRICT WHERE SOME PERSONS BELONGING TO THE DISTRICT DIED, WHOSE DEATHS ARE INCLUDED:—

Glasgow Hospitals, &c.,	-	-	-	-	69	deaths.
Other Institutions,	-	-	-	-	9	„
					—	
Total,	-	-	-	-	78	„
					—	

The above tables show that, of 656 deaths occurring in institutions within the district, 611 were transferred out, as they were persons not belonging to the Lower Ward; on the other hand, 78 deaths were transferred in, as they were persons belonging to the Lower Ward who died in institutions outwith the district. For the same reasons, 24 deaths were excluded of persons dying in private residences and elsewhere, and 16 deaths were included.

**Deaths in relation to Age and Cause.**—The deaths are classified in Table B1, according to age and cause. The deaths are here arranged in recognised age periods, and the percentage proportion of deaths at each period given:—

Infant period—under 1 year,	...	169	deaths or	24·0	per cent.
Under school age—1-5 years,	...	103	„ „	14·6	„
School age—5-15 years,	... ..	34	„ „	4·8	„
Adolescence—15-25 years,	... ..	33	„ „	4·6	„
Early mature period—25-45 years,	...	100	„ „	14·2	„
Late mature period—45-65 years,	...	112	„ „	15·9	„
Past mature period—65 and upwards,		152	„ „	21·6	„

The population at each of these age periods, except the infant period, has been obtained from the Registrar-General, so that the actual death-rates for each period can now be given. This is now published in Vol. II. of Census Report, page 253.

POPULATION, DEATHS, AND DEATH-RATES AT AGE PERIODS.

	Under 5	5-15	15-25	25-45	45-65	Over 65.
Population (Census 1911),	7,229	13,130	10,436	16,247	7,706	2,226
Deaths (year 1912),	... 272	34	33	100	112	152
Death-rate per 1000 of the population,	... 37·6	2·5	3·1	6·1	14·5	68·2

The high death-rates at the extremes of life are in striking contrast to the low rates during the periods of school age and adolescence.

**Infant Period.**—The infant death-rate for each year since 1891 is given in Table A. The average annual rates for the last two decennial periods were 125·2 and 110·8 per 1,000 births. For the year 1912 the rate was 103·49. This shows a decrease of 16·5 per thousand births on the figures for 1911. There is a decrease of 18 deaths from diarrhœa, of 14 from atrophy and debility, and of 8 from pneumonia and bronchitis. On the other hand, there is an increase of 17 deaths from prematurity, congenital malformations, and atelectasis conditions which are not amenable to control, so that a high death-rate from these causes does not constitute an index of an insanitary condition of a district. Of the 169 deaths recorded, 47 took place during the first week of life, 73 during the first month, and 98 during the first three months, that is, 58 per cent. of the infantile deaths were in children under 3 months of age.

INFANT DEATHS CLASSIFIED IN GROUPS ACCORDING TO CAUSE.—NUMBER IN EACH GROUP COMPARED WITH THAT FOR THE PRECEDING YEAR.

	1912.	1911.
1. Premature Birth, 41; Congenital Malformations, 7; Atelectasis, 2; Injury at Birth, 4; ... ..	54	33
2. Diarrhœa, 20; other Digestive Diseases, 3; Atrophy, Debility, and Marasmus, 15, ... ..	38	72
3. Pneumonia, 15; Bronchitis, 18; Laryngitis, 1, ...	34	41
4. Tuberculosis—Meningeal, 3; Abdominal, 1; other, 1,	5	10
5. Meningitis, 2; Convulsions, 2, ... ..	4	9
6. Measles, 5; Whooping Cough, 11; Erysipelas, 0; other Septic Diseases, 4, ... ..	20	17
7. Violence, 1, ... ..	1	0
8. Other Causes, ... ..	13	15
<b>Total, ... ..</b>	<b>169</b>	<b>197</b>

**Infectious Diseases.**—The number of deaths due to infectious diseases which are compulsorily notifiable was 77, made up as follows :—

Diphtheria, ... ..	14
Scarlet Fever, ... ..	9
Typhoid Fever, ... ..	2
Cerebro-Spinal Fever, ... ..	1
Puerperal Fever, ... ..	4
Erysipelas, ... ..	0
Pulmonary Tuberculosis, ... ..	47

The deaths from infectious diseases not compulsorily notifiable amounted to 69, made up as follows:—diarrhœa, 27; measles, 24; and whooping-cough, 18.

These diseases are all discussed under separate headings in Part II. of this report.

**Respiratory Diseases.**—Prior to 1906, deaths from pneumonia, from influenza with respiratory symptoms, and from bronchitis, were included under this heading. Since that year the two former diseases have been classed separately, and since 1911 the last-mentioned also. From 1910 broncho-pneumonia, which, in previous years, had been classed with respiratory diseases, has been classed with pneumonia. These changes in classification are indicated in the following tabular statements:—

### OLD CLASSIFICATION.

#### ALL RESPIRATORY DEATHS.

Year.	Deaths.	Death-rate.	Year.	Deaths.	Death-rate.	Year.	Deaths.	Death-rate.
1891	123	4·14	1896	97	2·60	1901	128	2·95
1892	121	3·90	1897	116	3·02	1902	117	2·82
1893	127	3·90	1898	114	2·83	1903	113	2·63
1894	109	3·20	1899	119	2·82	1904	129	2·83
1895	142	3·98	1900	158	3·59	1905	99	2·17

### NEW CLASSIFICATION.

Year.	Pneumonia.		Bronchitis.		Influenza.		Other Respiratory Diseases.	
	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.
1906	34	0·73	—	—	2	0·4	78	1·61
1907	40	0·80	—	—	10	0·20	64	1·29
1908	29	0·54	—	—	8	0·15	85	1·66
1909	64	1·23	—	—	4	0·07	72	1·38
1910	61	1·15	—	—	4	0·07	60	1·13
1911	74	1·35	58	1·06	8	0·14	3	0·05
1912	62	1·13	46	0·84	—	—	5	0·09

**Pneumonia.** — Deaths from this disease have been classified separately since the year 1906. During the year 1912, 62 deaths occurred, giving a death-rate of 1·13 per thousand, 39 of these being in Shettleston and 9 in Rutherglen. Classified according to age, the deaths were as follows:—

Under 1	1-2	2-5	5-15	15-25	25-45	45-65	65 and upwards.
15	15	6	4	1	9	5	7

**Bronchitis.**—Up till the year 1911, deaths from this disease were classified under the general respiratory heading. Bronchitis was responsible for 46 deaths during the year, giving a death-rate of '84 per thousand of the population. 27 of the deaths occurred in Shettleston district. Classified according to age, the deaths were as follows:—

Under 1	1-2	2-5	5-15	15-25	25-45	45-65	65 and upwards.
18	4	—	—	—	1	13	10

This shows clearly that the disease is specially liable to have a fatal termination in the periods of early infancy and advancing years.

**Influenza.**—From 1906, when the disease was first classed separately, to 1911, the average annual number of deaths was 6. During the year 1912 no deaths occurred.

**Other Respiratory Diseases.**—Including asthma, congestion of the lungs, acute croup, &c., caused 5 deaths. Classified according to age, 1 was between 9-12 months, 1 between 2 and 5, 1 was between 5 and 15, and 2 between 45 and 65.

**Malignant Diseases.**—Including cancer, carcinoma, sarcoma, &c., 38 deaths occurred from these causes in 1912, as against 42 in 1911, giving a death-rate of 0·69, against one of 0·77 per thousand of the population. Though there was a slight decrease in 1912, the general tendency in the Lower Ward, as in most other districts, is towards a gradual increase in the annual number of deaths recorded. Classified according to age, the 38 deaths were distributed thus:—6 from 25 to 45 years; 19 from 45 to 65, and 13 over 65.

**MALIGNANT DISEASE IN EACH REGISTRATION DISTRICT OF THE LOWER WARD.—AVERAGE ANNUAL NUMBER OF DEATHS FOR QUINQUENNIAL PERIODS OF 1891-1910, AND FOR EACH OF THE YEARS 1911 AND 1912; ALSO THE AVERAGE ANNUAL DEATH-RATE FOR THE SAID PERIOD IN THE LOWER WARD.**

Registration District.	Population.	1891-1895.	1896-1900.	1901-1905.	1906-1910.	1911.	1912.
Shettleston, - -	32,046	6·8	9·6	12·4	21·4	30	22
Springburn, - -	398	...	...	...	0·4	1	...
Maryhill, - -	112	0·4	0·6	0·8	0·2	...	...
Possilpark, - -	1,914	...	...	...	1·6	...	3
Garngadhill, &c., -	611	...	...	0·4	...	...	...
Cadder East, - -	9,143	2·4	3·8	2·8	7·2	7	7
Cadder West, - -	5,585	1·8	3·0	1·6	4·0	2	3
Carmunnock, - -	747	1·4	1·2	0·2	0·4	...	1
Govan, - -	2,394	0·4*	1·8*	0·4	0·2	...	...
Rutherglen, - -	4,024	1·2	1·0	1·8	2·4	2	2
Lower Ward District,	56,974	14·4	21·0	20·8	37·8	42	38
Average Annual Death-rate per } 10,000 of the Population,		4·43	5·20	4·76	7·44	7·70	6·96

\* By an extension of the Burgh of Govan, 5,642 of the population were annexed as from 15th August, 1901.



## II.—PREVALENCE OF INFECTIOUS DISEASES.

Pulmonary tuberculosis, which had been made compulsorily notifiable on November 23rd, 1907, for a period of five years, by resolution of the Local Authority, was made permanently notifiable throughout Scotland by the Local Government Board on August 1st, 1912.

By resolution of the Local Authority, and with the approval of the Local Government Board, the following diseases were made permanently compulsorily notifiable from 24th June, 1912, viz. :—

Ophthalmia Neonatorum,  
Anthrax, or Malignant Pustule,  
Glanders, or Farcy,  
Actinomycosis,  
Tetanus, or Lockjaw,  
Acute Poliomyelitis, or Infantile Paralysis.

Each notifiable disease will be dealt with under a separate heading, but reference should be made to the statistical tables B, D, and E. E shows for each disease the number of cases notified during the year, classified according to parish. The total number of cases amounted to 698, and the total deaths to 77. The deaths are given in detail in Tables B1 and B2.

As regards the cases, scarlet fever showed an increase of 13, pulmonary tuberculosis an increase of 39, erysipelas an increase of 24, and puerperal fever an increase of 5; while typhoid fever showed a decrease of 16, and diphtheria of 13.

TABLE E.—NUMBER OF CASES OF NOTIFIABLE INFECTIOUS DISEASE IN EACH PARISH DURING 1912.

PARISH.	Cerebro-Spinal Fever.	Diphtheria and Croup.	Scarlet Fever.	Typhus Fever.	Typhoid Fever.	Continued Fever.	Erysipelas.	Puerperal Fever.	Pulmonary Tuberculosis.	Ophthalmia Neonatorum.	Infantile Paralysis.	Total.
1. Barony, - -	1	80	282	...	3	1	41	9	69	3	1	490
2. Cadder, - -	...	34	60	1	5	...	22	2	18	...	...	142
3. Carmunnock, -	...	...	6	...	...	...	...	...	3	...	...	9
4. Govan, - -	...	1	3	2	1	...	18	2	1	3	...	31
5. Rutherglen, -	...	6	10	...	1	...	2	...	7	...	...	26
Total for year 1912,	1	121	361	3	10	1	83	13	98	6	1	698
Total for year 1911,	2	134	348	...	26	...	59	8	59	...	...	636
Deaths in 1912, ...	1	14	9	...	2	...	...	4	47	...	...	77

A series of tables, lettered D, with a distinctive number for each disease, will be found throughout the report. These tables show, for the whole period of compulsory notification, not only the cases and deaths, but also the rates calculated therefrom.

### Smallpox.

No cases occurred in any part of the district, but the following Table D1 shows the prevalence in previous years, and that the last case occurred in the year 1904 :—

TABLE D1.—SMALLPOX.

YEAR.	NUMBERS.		YEAR.	NUMBERS.	
	Cases.	Deaths.		Cases.	Deaths.
(1)	(2)	(3)	(1)	(2)	(3)
1892	...	...	1901	116	18
1893	17	1	1902	21	2
1894	...	...	1903	24	...
1895	3	1	1904	40	3
<i>Average,</i>	<i>5</i>	<i>0.5</i>	1905	...	...
1896	...	...	<i>Average,</i>	<i>40.2</i>	<i>4.6</i>
1897	5	1			
1898	...	...	1906 to	1911, no	Cases.
1899	...	...			
1900	24	4			
	...	...	<i>Average,</i>	...	...
<i>Average,</i>	<i>5.8</i>	<i>1</i>	1912	...	...

*The Vaccination (Scotland) Act, 1907*, which provides for returns of statutory declarations of conscientious objection to vaccination, came into operation on the 28th August of that year. Forms were prepared, duly approved by the Local Government Board, and issued to registrars during the month of December, 1907.

The returns received since that date are of considerable interest, and may be briefly summarised as follows:—

REGISTRATION DISTRICTS.	NO. OF DECLARATIONS.					
	Dec., 1907.	Year 1908.	Year 1909.	Year 1910.	Year 1911.	Year 1912.
Shettleston, - - -	19	103	162	154	193	235
Springburn, - - -	...	...	...	1	2	...
Maryhill, - - -	...	...	...	...	...	...
Possilpark, - - -	...	3	4	4	13	7
Garngadhill, - - -	...	1	1	1	1	...
Cadder, Eastern, - - -	3	8	...	...	...	43
Cadder, Western, - - -	4	18	27	28	34	39
Carmunnock, - - -	1	2	3	1	2	1
Govan, - - -	...	1	2	3	3	7
Rutherglen, - - -	4	12	26	34	48	58
TOTALS, -	31	148	225	226	296	390

During the year 1912 the declarations amounted to 390. In Table B the number of births registered in each district will be found in the fourth column, and by comparing these with the figures given above the percentage of infants not vaccinated on account of conscientious objections may be estimated. The percentage proportion of statutory declarations for the whole district compared with the number of births is 23·8.

### Diphtheria and Membranous Group.

Cases, 121; deaths, 14; fatality, 11·5 per cent.

Table D2 shows the annual prevalence of diphtheria since 1891. There is a decrease of 13 cases compared with 1911, and the number of cases is less by 14·6 than the average for the quinquennium 1906-10. The fatality figure is still unduly high, due almost entirely to the neglect of parents in seeking early medical advice, and the consequent postponement of specific treatment till the patient is beyond aid.

*Bacteriological Diagnosis.*—The majority of the cases continue to be notified on clinical grounds alone. In some respects this is an advantage, as delay in administration of antitoxin until a positive swab has been obtained was responsible for at least one death. During the year 180 swabs, excluding contact swabs, were received from medical practitioners for examination. Of these, 40 proved positive and 140 negative; 35 of the former and 5 of the latter were notified; and in 81 cases notified no swabs were sent for examination.

The number of cases removed to hospital was 104, or 85·9 per cent. 10 patients received antitoxin before removal, and of the 17 cases treated at home antitoxin was administered in 10 at least.

The age incidence of the cases and deaths during the year was as follows:—

Ages,	1	1-2	2-5	5-15	15-25	25-45	Total.
Cases,	3	12	32	51	13	10	121
Deaths,	...	5	6	3	...	...	14

TABLE D2.—DIPHTHERIA AND MEMBRANOUS CROUP.

YEAR.	NUMBERS.		RATES.		
	Cases	Deaths	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	15	6	40.0	0.48	1.9
1893	24	10	41.6	0.7	3.0
1894	26	11	42.3	0.7	3.2
1895	36	6	16.6	1.0	1.6
<i>Average,</i>	<i>25.2</i>	<i>8.2</i>	<i>32.6</i>	<i>0.75</i>	<i>2.47</i>
1896	36	6	16.6	0.9	1.6
1897	30	3	10.0	0.7	0.7
1898	21	3	14.2	0.5	0.7
1899	29	9	31.0	0.6	2.1
1900	55	14	25.4	1.0	3.1
<i>Average,</i>	<i>34.2</i>	<i>7.0</i>	<i>20.4</i>	<i>0.84</i>	<i>1.73</i>
1901	45	7	15.5	1.0	1.6
1902	25	3	12.0	0.6	0.7
1903	61	9	14.7	1.4	2.1
1904	56	6	10.7	1.2	1.3
1905	56	8	14.2	1.2	1.7
<i>Average,</i>	<i>48.6</i>	<i>6.6</i>	<i>13.5</i>	<i>1.1</i>	<i>1.5</i>
1906	61	5	8.1	1.2	1.0
1907	75	6	8.0	1.5	1.2
1908	192	15	7.8	3.7	2.9
1909	213	12	5.6	4.0	2.3
1910	137	11	8.0	2.6	2.1
<i>Average,</i>	<i>135.6</i>	<i>9.8</i>	<i>7.2</i>	<i>2.6</i>	<i>1.9</i>
1911	134	14	10.4	2.4	2.5
1912	121	14	11.5	2.2	2.5

The general incidence of the disease during the year is shown in the table appended. Some of the more important results of investigations made and action taken are now set forth.

DIPHTHERIA IN THE LOWER WARD DURING 1912. DISTRIBUTION IN TIME  
AND SPACE. CASES AND DEATHS MONTH BY MONTH IN EACH LOCALITY  
AFFECTED.

LOCALITIES.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.	
Barony Parish—														
<i>Shettleston,</i> - - -	C. {	6	2	2	6	13	2	2	7	5	5	5	2	57
	D. {	...	...	...	1	1	1	...	...	...	1	...	2	6
<i>Tollcross,</i> - - -	C. {	1	2	...	1	1	2	...	...	4	3	1	1	16
	D. {	1	...	...	...	1	...	...	...	...	1	...	...	3
<i>North Mount Vernon,</i>	C. {	...	...	...	1	2	...	...	...	...	...	...	...	3
	D. {	...	...	...	...	1	...	...	...	...	...	...	...	1
<i>Lambhill,</i> - - -	C. {	...	...	...	...	...	...	...	...	...	...	...	...	...
	D. {	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Riddrie,</i> - - -	C. {	...	...	...	...	...	...	...	1	1	...	...	...	2
	D. {	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Bishopbriggs,</i> - - -	C. {	...	1	1	...	...	...	...	...	...	...	...	...	2
	D. {	...	...	...	...	...	...	...	...	...	...	...	...	...
Cadder Parish—														
<i>Bishopbriggs,</i> - - -	C. {	2	1	...	...	...	...	3	...	1	...	...	...	7
	D. {	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Glenboig,</i> - - -	C. {	...	...	...	...	...	...	1	...	...	...	3	4	
	D. {	...	...	...	...	...	...	1	...	...	...	1	2	
<i>Stepps,</i> - - -	C. {	...	...	...	...	...	...	1	...	...	...	...	1	
	D. {	...	...	...	...	...	...	...	...	...	...	...	...	
<i>Gartcosh,</i> - - -	C. {	1	1	...	...	...	...	1	4	3	...	3	13	
	D. {	...	...	...	...	...	...	...	...	...	...	...	...	
<i>Chryston,</i> - - -	C. {	3	1	...	...	...	...	...	...	...	...	1	5	
	D. {	...	...	...	...	...	...	...	...	...	...	...	...	
<i>Garnkirk,</i> - - -	C. {	2	1	...	...	...	...	...	...	...	1	...	4	
	D. {	1	...	...	...	...	...	...	...	...	...	...	1	
<i>Govan,</i> - - -	C. {	...	...	...	...	...	...	...	...	...	1	...	1	
	D. {	...	...	...	...	...	...	...	...	...	...	...	...	
<i>Rutherglen,</i> - - -	C. {	...	1	...	...	...	1	1	1	...	2	...	6	
	D. {	1*	...	...	...	...	...	...	...	...	...	...	1	
TOTAL,	C. {	15	10	3	8	16	5	3	14	14	13	10	10	121
	D. {	3	...	...	1	3	1	...	1	...	2	...	3	14

\* This Case was notified in 1911.

C. means Cases.                      D. means Deaths.

**Barony.**—80 cases; 10 fatal. The distribution of cases according to locality was as follows:—Shettleston, 57—6 fatal; Tollcross, 16—3 fatal; North Mount Vernon, 3—1 fatal; Bishopbriggs, 2; Riddrie, 1; Millerston, 1.

**SHETTLESTON.**—57 cases; 6 fatal. In Main Street 15 families were affected, with 19 cases—2 fatal; York Terrace, 7 families, with 8 cases—1 fatal; Old Shettleston Road, 4 families, with 4 cases; Eastmuir Street, 4 families, with 4 cases; Vesalius Street, 3 families, with 3 cases—1 fatal; Sandyhills Road, 3 families, with 4 cases—1 fatal; William Street, 2 families, with 2 cases; Budhill Avenue, 2 families, with 2 cases; James Street, 2 families, with 2 cases; Chester Street, 1 fatal case; and Wellshot Road, Drummond Street, George Street, Hill Street, Woodside Place, St. Mark Street, Firpark Street, and Blair Street, 1 case each.

*Main Street.*—From 7 of the 19 cases throat swabs were received from the doctor in attendance before notification. Of these, 6 were positive and 1 negative. The others were diagnosed from clinical signs alone. Secondary cases occurred in 2 families. In a family, V., a case occurred in November, 1911, and was discharged from hospital on 23rd December. One brother sickened on 1st January, and was removed on the 2nd, while a second brother sickened on the 4th, and was removed the same day. The diagnosis in both cases was confirmed bacteriologically. In another family, B., a girl of 3 sickened on the 17th August, while the family was on holiday at Saltcoats. The symptoms were considered to be due to chill, and it was only on returning to Shettleston on the 23rd that medical advice was sought. A swab was taken and proved positive, and the child removed to hospital. The father, meantime, had developed a sore throat, and a positive swab being obtained in his case, he was removed on the 27th. A third case—a young man of 20—sickened on the 30th, and in his case also a positive swab was obtained. The father was discharged from hospital on 4th September, 1912, but on November 9th developed a second attack of diphtheria—again diagnosed bacteriologically—and was readmitted to hospital. Two cases proved fatal, both in children between 1-2 years old. The first had been ill ten days before receiving treatment, and died within 24 hours of being admitted to hospital. The second had been ill five days before being treated, by which time urgent laryngeal symptoms were present, necessitating tracheotomy, but the child died of toxæmia. In both cases it is reasonable to suppose that had advice been sought earlier a fatal termination would not have ensued.

*York Terrace.*—The first case which occurred in this street was in a man of 30. His wife and two children had diphtheria in November, 1911, and were discharged from hospital on 20th December and 6th January, but he did not contract diphtheria until 21st March. This case was considered to be due to a "carrier" case. The case was diagnosed bacteriologically, and was isolated at home. A swab taken on the 8th April was still positive, but patient resumed his work a few days later. On the 18th another case occurred in the same tenement, and no other source of infection could be traced. Other 4 cases also occurred in one tenement. The first occurred in a child of one year old, on 2nd May. On the 5th two further cases occurred in different families; and on 31st a second case occurred in one of the families. Four contacts were examined, and throat swabs taken by the Asst. Medical Officer of Health, but no other cases were discovered.

*SANDYHILLS.*—4 cases. Along with these one should consider 3 cases which occurred at North Mount Vernon. Of these 7 cases 2 died. The first case occurred on April 22nd, and probably was not connected with the other 6. 4 cases were notified between the 2nd May and 6th May, and the other 2—one a secondary case—occurred three weeks later. Suspicion was cast upon the milk supply of these cases, and the dairy and all workers and affected families were visited and examined by the Asst. Medical Officer of Health. Two girls worked in this dairy, one of whom started only on the 22nd April. Both were swabbed, and the latter gave a positive result. There was a history of sore throat for one day. No other case could be discovered by swabbing among the dairy workers or carriers or in the affected households. This girl was immediately suspended from work, and swabs taken seven and twelve days later were still found to be positive. Though the evidence is not conclusive, the probability is that this case was the source of the others, she herself having a mild attack and acting as a carrier for some weeks afterwards. Of the fatal cases, one was a girl of 12, who died at home the day the disease was notified. She had been ill for fourteen days, and only received antitoxin on the thirteenth day of the illness after a positive swab had been obtained, and that even though two days previously, when the swab was taken, there was false membrane on the throat. The second fatal case died in hospital after almost six weeks' residence.

*Chester Street.*—The fatal case in this street was in an illegitimate child of 13 months, who was said to have been ill for twenty-four hours only. The doctor who was called in immediately telephoned for the ambulance, which came at once, but the child died before its arrival.

**TOLLGROSS.**—16 cases; 3 deaths. In Maukinfauld Road, 2 families with 4 cases—1 fatal; Calton Street, 3 families, 4 cases—1 fatal; Main Street, 2 families, 2 cases; Braidfauld Street, 2 families, 2 cases; Watson Parade, 1 fatal case; Trainard Avenue, Tollcross Road, and Beechwood Drive, 1 case each.

*Maukinfauld Road.*—The first case was notified on April 15th. It was a severe case, necessitating tracheotomy. The other 3 cases occurred in one family—the first, a child of 3, sickened on 15th May, but did not receive antitoxin till removal to hospital on the 19th, and it died next day. Two secondary cases occurred with onsets on 4th and 6th June.

*Calton Street.*—The fatal case in this street was in a child of 20 months, who also was ill five days before receiving specific treatment, and who died two days later, on October 26th. A secondary case occurred in this family on October 29th, and was removed on the 31st.

*Watson Parade.*—One fatal case was notified from this street. The child, who was 18 months old, sickened on November 16th, and was removed to hospital on the 20th, where it died the same day. No antitoxin was administered prior to removal.

*Tollcross Road.*—The case here was infected outwith the district.

**BISHOPBRIGGS.**—2 cases occurred in children attending Colston School at a time when there were several other cases in the school in children from Glasgow.

**Cadder.**—34 cases; 3 fatal. The distribution of cases according to locality was as follows:—Chryston, 5; Bishopbriggs, 7; Stepps, 1; Garnkirk, 4—1 fatal; Gartcosh and Glenboig, 17—2 fatal. 12 of these cases occurred in January and February, and the other 22 cases from August to December.

**GARTCOSH AND GLENBOIG.**—Two isolated cases occurred in January at Gartcosh, but no further cases until August. 15 cases were notified from this month to the end of the year, and of these 11 cases were connected with Gartloch Asylum and the families of attendants there. One family had 4 cases, one 3 cases, one 1 case, and 3 cases occurred within the institution itself. The other 4 cases occurred in Glenboig, one family having 2 cases. In the first family the first case was notified on August 31st, and further cases were notified on the 4th and 6th of September. These cases were discharged—the first on October 23rd, and the others on September 29th. On October 30th a further case was recorded. Of the swabs taken from the original



3 cases, 1 proved positive, and this case was readmitted to hospital. In the second family the first case was notified on the 4th of September, and the two secondary cases on the 12th and 15th. In the third family the case occurred on the 9th October. All these cases were in children under 11 years of age, who were in daily contact with each other. Of the 3 cases in the Asylum, the first occurred in a nurse on the 12th December, and two further cases, one in an attendant, the other in an inmate, occurred on the 18th and 19th.

Of the Glenboig cases, the first was an isolated case, in a child of 5, the illness commencing on 7th August. The child was removed to hospital the same day, and died on the 8th after tracheotomy had been performed. 2 cases were reported in one family from Carrick Place on the 3rd and 16th December. The first case was reported by the doctor to have been "dying when first seen by me, expiring a few seconds after my arrival." She had been two days ill. A fourth case was notified on December 16th, but no connection was traced between this case and the other cases.

**GARNKIRK.**—2 cases occurred in Heathfield Square in January, the first in a child of 16 months, who had been ill two days before removal to hospital, and who died there two days later. The second was in a boy of 15, who had two years before suffered from an attack of diphtheria. A third case of unknown origin occurred in Heathfield Square in November. The remaining case was notified on February 22nd, and was probably a "return" case, a sister having been discharged from hospital on 27th January after an attack of diphtheria.

**CHRYSTON.**—3 cases, notified on the 20th January, 29th January, and 8th February, were infected by contact at school. The fourth case occurred on December 28th in a girl in domestic service in Glasgow, who was infected in the city.

**BISHOPBRIGGS.**—2 cases were in a family residing at Mavis Valley, but the dates of attack were 11th January and 14th October. 3 cases occurred in a family in Ruskin Square, the first case sickening on the 14th August, and the other 2 cases on 21st.

**Rutherglen.**—6 cases. These were all isolated cases, and no source of infection was traced, except in 1 case infected outwith the district. She had been on holiday at West Kilbride, and becoming ill while there was removed home.

**Govan.**—1 case occurred in Maxwell Road.

**Carmunnock.**—No cases occurred in this parish during the year.

**Scarlet Fever.**

Cases, 361; deaths, 9; case mortality, 2·4 per cent.

Table D3 shows the annual prevalence of scarlet fever since 1891. 17 fewer cases were notified than in 1911, and the case mortality has dropped from 3·1 per cent. to 2·4 per cent.—the lowest since 1904.

320 cases, equivalent to 88·9 per cent. of the total, were removed to hospital. Over 55 per cent. of the cases occurred in Shettleston, and 73 per cent. in the combined districts of Shettleston and Tollcross. Small epidemics occurred in Glenboig in August, and in Gartcosh during November. The maximum prevalence was during April and May, when 71 cases were notified, and in November and December, when there were 73.

The age incidence of cases and deaths was as follows:—

	Ages—1	1-2	2-5	5-15	15-25	25-45	45-65	Total.
Cases,	5	15	81	232	22	5	1	361
Deaths,	...	1	5	3	...	...	...	9

The distribution of the disease month by month and the various parishes or localities affected are shown in the following table:—

**SCARLET FEVER. 1912.**

Parish or Locality.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.	
<b>Barony—</b>														
<i>Shettleston,</i>	{ C.	12	14	18	21	29	12	23	11	19	15	11	15	209
	{ D.	...	...	...	...	1	1	1	2	...	...	...	2	7
<i>Tollcross,</i>	{ C.	11	8	5	8	7	4	2	3	4	3	3	6	64
	{ D.	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Other Localities,</i>	{ C.	2	...	...	1	1	3	...	...	...	2	5	4	18
	{ D.	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Cadder—</b>														
<i>Jellyhill, &amp;c.,</i>	{ C.	...	...	...	1	...	...	1	1	1	...	...	...	4
	{ D.	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Bishopbriggs,</i>	{ C.	...	...	...	...	...	...	...	1	...	1	...	...	2
	{ D.	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Chryston,</i>	{ C.	2	1	3	...	1	...	3	1	...	2	5	...	18
	{ D.	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Gartcosh,</i>	{ C.	...	...	...	...	...	...	...	...	...	1	12	6	19
	{ D.	...	...	...	...	...	...	...	...	...	1	1	...	2
<i>Glenboig,</i>	{ C.	...	...	...	...	...	1	...	7	...	...	2	...	10
	{ D.	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Other Localities,</i>	{ C.	3	...	1	...	1	...	...	...	1	1	...	...	7
	{ D.	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Carmunnock,</i>	{ C.	...	...	...	...	...	2	...	2	1	...	1	...	6
	{ D.	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Govan,</i>	{ C.	...	...	1	...	1	...	...	...	...	...	...	1	3
	{ D.	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Rutherglen,</i>	{ C.	...	1	1	...	...	...	1	...	1	4	2	...	10
	{ D.	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Total,</b>	{ C.	30	24	29	31	40	22	30	26	27	29	41	32	361
	{ D.	...	...	...	...	1	1	1	2	...	...	1	3	9

The incidence of scarlet fever in each parish and the probable source of infection will now be considered.

**Barony.**—282 cases and 7 deaths. The cases were distributed as follows:—Shettleston, 200; Tollcross, 64; Lambhill, 6; Riddrie, 4; Bishopbriggs, 3; Barlinnie, 3; Stepps, 1; and Garthamlock, 1.

All 7 deaths occurred among the Shettleston cases, giving a case-mortality figure of 3·5 per cent. for these cases, and a mortality of 2·4 per cent. for the whole of the Barony Parish cases.

TABLE D3.—SCARLET FEVER.

YEAR.	NUMBERS.		RATES.		
	Cases.	Deaths.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	183	7	3·8	5·8	2·2
1893	168	4	2·3	5·1	1·2
1894	232	9	3·8	6·8	2·6
1895	174	15	8·6	4·8	4·2
<i>Average,</i>	<i>189·2</i>	<i>8·7</i>	<i>4·6</i>	<i>5·6</i>	<i>2·6</i>
1896	188	7	3·7	5·0	1·8
1897	210	8	3·8	5·4	2·0
1898	157	4	2·5	3·9	0·9
1899	377	19	5·0	8·9	4·5
1900	292	12	4·1	6·6	2·7
<i>Average,</i>	<i>244·8</i>	<i>10·0</i>	<i>4·0</i>	<i>6·0</i>	<i>2·4</i>
1901	189	5	2·6	4·3	1·1
1902	129	6	4·6	3·0	1·4
1903	152	2	1·3	3·5	0·4
1904	141	3	2·1	3·0	0·6
1905	68	4	5·8	1·4	0·8
<i>Average,</i>	<i>135·8</i>	<i>4·0</i>	<i>2·9</i>	<i>3·1</i>	<i>0·9</i>
1906	127	...	...	2·6	...
1907	131	4	3·0	2·6	0·8
1908	175	9	5·1	3·4	1·7
1909	395	10	2·5	7·6	1·8
1910	293	8	2·7	5·5	1·5
<i>Average,</i>	<i>224·2</i>	<i>6·2</i>	<i>2·7</i>	<i>4·4</i>	<i>1·2</i>
1911	348	11	3·1	6·3	2·0
1912	361	9	2·4	6·6	1·6

In Shettleston throughout the year scarlet fever was very prevalent, averaging over 16 cases per month. In crowded areas like Shettleston scarlet fever is endemic, and at recurring intervals seasons of excessive prevalence occur, partly due to the accumulation of a susceptible population in the interval, though influenced also by other factors, such as periodic variations in the type of disease prevalent throughout the country. Thus for the past six years the figures have been—

Cases of scarlet fever in Shettleston,	...	1907— 66	1910— 79
		1908— 57	1911— 81
		1909—176	1912—200

Of the cases occurring in 1912, 4 are known to have been infected outwith the district, 2 were "return" cases, 6 were of doubtful diagnosis, and 35 were secondary cases. In one instance as many as 6 cases occurred in three weeks in a single family. The influence of the schools in the spread of the epidemic was as usual a marked feature, cases frequently occurring on successive days from scholars attending the same class.

The streets from which most cases were notified were—Main Street, Old Shettleston Road, Chester Street, Wellshot Road, Blair Street, and Hamilton Drive.

**TOLLCROSS.**—64 cases; no deaths. 50 per cent. of these cases occurred during the first four months of the year, a continuation of an epidemic prevailing at the close of 1911. This number includes 12 secondary cases, 2 "return" cases, 1 case infected outwith the district, and 1 case notified only after desquamation had begun.

The streets most affected were Maukinfauld Road and Mansions, Main Street, and Easterhill Street. The influence of the school in the spread of infection was again apparent, though to a less degree than in the case of Shettleston.

**RIDDRIE.**—4 cases. Of these, 3 were in one house at Lethamhill Terrace, but occurred on dates as far apart as 2nd January and 19th November.

**Cadder.**—60 cases—3 deaths (1 death occurred during the current year). The cases were distributed as follows:—Gartcosh, 19; Chryston, 18; Glenboig, 10; Jellyhill and Mavis Valley, 4; Bishopbriggs, 2; Garnkirk, 1; Lenzie, 3; Stepps, 1; Lochfaulds, 2.

**GARTCOSH.**—19 cases—3 deaths. No case of scarlet fever occurred at Gartcosh till October 10th, when one case was notified. No further cases were recorded till November 18th, and from this date till the end of the month 12 cases occurred, and six further cases up to December 22nd. Twelve families in all were affected, three with 3

cases each, one with 2 cases, and in the others 1 each. The disease was more virulent than was prevalent throughout the rest of the area. Three deaths occurred in this series of cases, and several other cases which eventually terminated in recovery were of a very severe type. Two of the fatal cases were under three years of age, and the third was seven.

Three visits were made to the district by the Asst. Medical Officer of Health during the epidemic, and all in the affected houses were examined. Several other houses were likewise visited where cases of illness had occurred about that time, and every child in the Infant Department of the Public School was examined, but no suspicious cases were found outside the affected families.

The original source of infection could not be traced, but the disease was undoubtedly spread by the intermingling of the children in school and at play, all the cases residing quite near each other. Eleven were pupils in Gartcosh Public School, and seven of these were in the Infant Class. Three, from one family, attended Cardowan School; three were above and two below school age.

GLENBOIG.—10 cases—7 of these cases occurred in the month of August, in four families living in the same building. The origin of this small outbreak is interesting. A girl, C., aged 4, had been on a visit to friends in Shettleston, and returned home on August 6th. The same day she became ill, and was confined to bed. The illness was slight, and the symptoms equivocal, and within a week the child was out playing with the other children. On the 26th the local doctor telephoned that there were 3 or 4 cases of scarlet fever in the house, and the Assistant Medical Officer of Health visited it the same day. The child C. was found to have typical pinpoint desquamation all over the body. Mrs. C. was also suffering from scarlet fever, and other 3 cases were discovered in 2 families in the house. When these five cases and 2 further secondary cases were removed to hospital, and the whole building disinfected, the outbreak terminated.

CHRYSTON and MUIRHEAD.—18 cases. These were spread out over the whole year, the largest number recorded in one month being 5 in November. These were all in children of school age residing near each other, and 3 were secondary cases.

JELLYHILL, MAVIS VALLEY, BISHOPBRIGGS.—Only 6 cases were recorded throughout the year, while last year the total number was 81.

LENZIE DISTRICT.—3 cases—2 of which were infected outwith the area. One case occurred at a dairy farm which sent its milk supply to a large institution in Glasgow. The supply was stopped for 24

hours, to allow of disinfection of premises and inspection of other inmates and workers. Nothing suspicious being discovered, the milk supply was resumed with safety.

**Carmunnock.**—6 cases. Two cases at least were infected outside the district. Three cases were in the family of a dairy farmer, who sent his milk into Glasgow daily—two cases occurring on August 30th and the third on September 5th. These children, with the father and mother and two servants, comprised the whole household. In order to ensure the purity of the milk sent from the farm, the Assistant Medical Officer of Health visited the farm twice, and after a brief stoppage for purposes of disinfection of the premises, the milk supply was resumed without any trouble. At the same time all the children in Carmunnock School, which had re-opened 10 days previously, were examined, but no suspicious case was found.

These 3 cases were discharged from hospital on the 19th and 26th October and 16th November respectively, the last-mentioned case being left 3 weeks longer because of a nasal discharge. Specific instructions for the prevention of infection were given both orally and in writing to the farmer, but these were disregarded. On 20th and 21st November six cases of scarlet fever occurred in Glasgow among the customers of a dairy whose sole source of supply was this farm. The milk supply was immediately stopped, the children removed from the farm, and the whole of the premises and the clothing disinfected. No further cases occurred on the milk supply being resumed. As one of the workers in the Glasgow dairy was at the time found to be suffering from sore throat, it is possible that this, and not the farm cases, was responsible for the cases occurring in Glasgow.

**Govan.**—3 cases occurred in Merryflats Hospital.

**Rutherglen.**—10 cases occurred in 7 families—the majority in October and November. Six of these cases occurred in one small row of houses at Cambuslang, and 3 of these were secondary cases.

### **Typhoid Fever.**

Cases notified, 10; and of these one was infected outside the area, and notified from Merryflats Hospital. Deaths, 2; but of these one was certified by autopsy to be due to lobar pneumonia. Discounting this case, the case mortality was 11·1 per cent. One death, due to enteric fever, was transferred from Belvidere Hospital.

Table D4 shows the annual prevalence since 1892. The figures for 1912 were the lowest on record, there being only 10 cases, compared with 26 for 1911, the previous lowest number recorded, and compared with 40·2, the average number of cases for the quinquennial period 1906-1910. A series of 4 cases occurred in one house in Bishopbriggs;

but, apart from these, the cases were all isolated cases. All the cases were removed to hospital except one, who was convalescent before being notified. 1 case was treated in Shieldhall.

The age incidence of the cases and deaths was as follows :—

	Ages—2-5	5-15	15-25	25-45	45-65	Total.
Cases,	1	5	...	4	...	10
Deaths, ...	...	...	...	2	...	2

One of these cases died from lobar pneumonia, and had not enteric.

TABLE D4.—TYPHOID FEVER.

YEAR	NUMBERS		RATES.		
	Cases.	Deaths.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	34	4	11·7	1·0	1·2
1893	37	6	16·2	1·1	1·8
1894	23	3	13·0	0·6	0·8
1895	99	17	17·1	2·7	4·7
<i>Average,</i>	<i>48·2</i>	<i>7·5</i>	<i>15·5</i>	<i>1·4</i>	<i>2·2</i>
1896	39	6	15·3	1·0	1·6
1897	19	2	10·5	0·4	0·5
1898	53	3	5·6	1·3	0·7
1899	86	12	13·9	2·0	2·8
1900	40	8	20·0	0·9	1·8
<i>Average,</i>	<i>47·4</i>	<i>6·2</i>	<i>13·0</i>	<i>1·1</i>	<i>1·5</i>
1901	61	10	16·3	1·4	2·3
1902	38	6	15·7	0·9	1·4
1903	37	7	18·9	0·8	1·6
1904	44	4	9·0	0·9	0·8
1905	22	...	...	0·4	...
<i>Average,</i>	<i>40·4</i>	<i>5·4</i>	<i>13·3</i>	<i>0·9</i>	<i>1·2</i>
1906	56	4	7·1	1·2	0·8
1907	42	8	19·0	0·8	1·6
1908	38	2	5·2	0·7	0·3
1909	29	3	10·3	0·5	0·5
1910	36	...	...	0·6	...
<i>Average,</i>	<i>40·2</i>	<i>3·4</i>	<i>8·4</i>	<i>0·8</i>	<i>0·6</i>
1911	26	4	15·3	0·4	0·7
1912	10	2	20·0	0·1	0·3

*Bacteriological Diagnosis.*—Of the 10 cases notified, a positive blood reaction was obtained in 8. In only 1 of these 8 cases was the disease notified before a positive blood reaction was obtained—the usual custom of the practitioner being to wait for a definite reaction before notifying a doubtful case. In this way the Widal reaction is often more a hindrance than a help to speedy notification and segregation. Of the 2 negative cases, 1 was a case of acute lobar pneumonia; the other was a case with very intense infection, who died four days after admission to hospital.

During the year 46 specimens of blood were received for examination; 29 from practitioners, 18 from hospitals, and 4 from the Public Health Staff. 8 cases proved positive and 38 negative.

The following table gives the monthly distribution in parish and locality. It will be observed that all the cases occurred in the six months March to August, and 6 of the cases occurred in April.

TYPHOID FEVER IN LOWER WARD IN 1912. DISTRIBUTION IN  
TIME AND LOCALITY. CASES AND DEATHS MONTH BY  
MONTH.

Localities.	Mar.	April.	May.	June.	July.	Aug.
Barony Parish—						
<i>Shettleston,</i> - - -	{ C. 1	... ..	1	... ..	... ..	... ..
	{ D. ...	... ..	1	... ..	... ..	... ..
<i>Lambhill,</i> - - -	{ C. ...	... ..	... ..	1	... ..	... ..
	{ D. ...	... ..	... ..	... ..	... ..	... ..
Cadder Parish—						
<i>Gartcosh,</i> - - -	{ C. ...	... ..	... ..	... ..	... ..	1
	{ D. ...	... ..	... ..	... ..	... ..	... ..
<i>Bishopbriggs,</i> - - -	{ C. ...	4	... ..	... ..	... ..	... ..
	{ D. ...	... ..	... ..	... ..	... ..	... ..
Govan Parish, - - -	{ C. ...	1	... ..	... ..	... ..	... ..
	{ D. ...	... ..	... ..	... ..	... ..	... ..
Rutherglen, - - -	{ C. ...	1	... ..	... ..	... ..	... ..
	{ D. ...	1	... ..	... ..	... ..	... ..
Lower Ward, - - -	{ C. 1	6	1	1	... ..	1
	{ D. ...	1	1	... ..	... ..	... ..

The incidence of the disease according to parish and the probable source of infection will now be considered.

**Barony.**—3 cases. Shettleston 2, 1 fatal; and Lambhill 1.

**SHETTLESTON.**—The first case occurred in an ironmoulder (aged 38), residing in Old Shettleston Road, notified on March 22nd. The patient had been ill, with rather vague symptoms, for 18 days previously, and blood taken on 21st March gave a positive Widal reaction.

Case 2 was that of a fitter (aged 37), residing in Main Street, and notified on the 6th of May, after 15 days' illness. This patient died in hospital four days later. Widal reaction was negative.



**LAMBHILL.**—The case in this district was that of a boy (aged 11), notified on the 18th June. He had been ill for a month previously with vomiting, diarrhoea, sore throat, and abdominal pain. His blood gave a positive Widal reaction on June 21st.

These 3 cases were all isolated cases, and in no instance was it found possible to trace the source of infection.

**Cadder.**—5 cases: Bishopbriggs, 4; Gartcosh, 1. All these cases resulted in recovery.

**BISHOPBRIGGS.**—The 4 cases occurred in one family, P., residing at Mavis Valley. This family consisted of father, mother, and six children. James P., aged 15, a miner, and Annie P., aged 10, were confined to bed on April 3rd after feeling out of sorts for several days. Headache and malaise were the only symptoms. The doctor in attendance took a specimen of blood from James on the 8th April, 1912, which was reported negative. A second specimen on the 12th April, 1912, gave a positive reaction, and both these cases were removed to hospital. The same day Jessie, aged 8, became ill, and was removed two days later.

The other members of the household were examined, and samples of blood taken from all except a baby of 8 months. In the case of the father and mother, and Rachel, aged 10 years, the Widal reaction was negative; but in the case of John, aged 5, the reaction was positive. On further enquiry it was discovered that John had been ill five weeks previously with headache and sickness. He was then confined to bed for a fortnight, but no doctor was in attendance. His parents attributed his illness to his playing beside a burn which receives sewage effluent, but the actual source of infection was not traced. The sequence of events in this series of cases was probably that John contracted enteric fever first, but as so often happens in young children, the disease was very slight and no notice taken of it. The slighter the case is, however, the more important is it epidemiologically, as no precautions are taken. In this case, with eight occupants in a two-apartment house, the opportunities for the spread of infection were manifold. Consequently, two to three weeks later, when the patient was in the most infectious condition, three other members of the household were in turn stricken down with the disease, and the more serious symptoms developed in the case of the eldest, James, alone led to the discovery of the true nature of the malady.

**GARTCOSH.**—An isolated case occurred here on the 1st of August, in a child of 11 years, a sample of blood taken on that date giving a positive reaction. The origin of the case could not be traced. This is the only case of enteric that has occurred in Gartcosh since the

outbreak of September, 1911, when 8 cases were notified. The investigation of this outbreak and the means adopted to stamp out the disease were reported upon fully in the Annual Report for 1911.

**Rutherglen.**—1 case was reported on the 27th April, and removed to hospital, where the patient died later the same day. Autopsy showed that the patient had been suffering from lobar pneumonia and not typhoid fever.

**Govan.**—1 case occurred in Merryflats Hospital on April 20th. This patient came from Partick two days before, and had been ill a fortnight prior to his admission, though diagnosis was only made in hospital, blood being positive on 19th April, 1912.

### **Typhus Fever.**

Three cases occurred during the year in institutions within the district — 2 cases, 1 fatal, in Merryflats Hospital, and 1 case in Lenzie Convalescent Home. The first case in Merryflats was a man of 24, admitted on 10th February, from Govan, suffering from "paralysis." Two days later he was notified as a case of typhus, and was removed to Shieldhall Fever Hospital, where he died on the 15th February. Infection in this case was probably from a case of typhus which had occurred in Govan in the street this patient resided in, a few days previously. The second case was a man of 28, removed from Commercial Road, Glasgow, on 3rd June, with high fever, headache, sickness and vomiting. The case was removed to Shieldhall on the 8th June, as a case of typhus. A case of typhus had occurred the previous week in Commercial Road, and was removed to Belvidere.

The case in Lenzie Convalescent Home was in a young man of 18, who had been admitted to the Royal Infirmary on May 29th, suffering from pneumonia, and was admitted to the Lenzie Home on June 14th. He became ill on the 19th June, and was removed to hospital on 23rd with typhus fever. While he had been in the Infirmary a woman from Commercial Road, Glasgow, was admitted to the same flat on June 8th, and was transferred, on June 10th, to Belvidere Hospital, suffering from typhus. No further cases occurred in the Home.

All 3 cases of typhus were thus infected outwith the Lower Ward area.

### **Cerebro-Spinal Fever or Meningitis.**

Only 1 case of this disease, and that of a very doubtful nature, was notified during the year. This case was a girl, aged 6, residing at Shettleston, who had suffered from an abscess of the scalp six weeks previously, and for a fortnight had been confined to bed with headache.

She was notified on 29th July, 1912, and was visited by the Assistant Medical Officer the next day. Meningeal symptoms being well marked, lumbar puncture was performed. The cerebro-spinal fluid was under considerable pressure. It was quite clear, and without any appreciable deposit. Microscopic examination failed to reveal either meningococci or tubercle bacilli, but the cellular content suggested tubercle.

The child was isolated at home, and died on the 2nd of August.

The following table shows the prevalence of the disease since 1906 :—

TABLE D5.—CEREBRO-SPINAL FEVER OR MENINGITIS.

Year.	Cases.	Deaths.
1906	14*	15
1907	49	31
1908	23	11
1909	7	3
1910	2	1
<i>Average,</i>	19	12·2
1911	2	1
1912	1	1

\* Notifiable since August.

**Continued Fever.**—1 case notified on 31st October, in a child of 8 months, who presented acute symptoms of inflammation of the bladder, and high fever for 17 days. There is no record of examination of the blood in this case.

**Puerperal Fever.**—13 cases, 4 deaths. 12 cases were removed to hospital. One of the fatal cases was suffering at the same time from erysipelas. In a second case scarlet fever occurred in the house 2 days previous to notification. The cases occurred in the following localities :—Shettleston, 7 ; Tollcross, 2 ; Govan, Merryflats Hospital, 2 ; Stepps, 1 ; and Bishopbriggs, 1.

**Erysipelas.**—83 cases—29 of these were treated in hospital. 1 case, which died, was complicated by puerperal fever, and to this cause the death was ascribed. A second case, notified as erysipelas, died in Glasgow Royal Infirmary, death being certified as due to extravasation of urine. A third fatal case occurred in Merryflats, in a patient who resided outwith the area. 6 cases occurred in children—all facial. All other cases were adults. In 67 the disease was on the face, in 8 arm or leg, and in 7 no particulars were given.

### Ophthalmia Neonatorum.

This disease became compulsorily notifiable on 24th June, 1912, and from that date to the close of the year 6 cases were notified. 3 of these cases occurred in Merryflats Hospital, 2 in Shettleston, and 1 in Tollcross. In 2 cases the origin of the disease was known to be gonorrhœal—in the others the causative organism was not known. 4 of the cases were notified within 7 days of birth, and 1 case 3 weeks after birth. In this latter case no notification of birth was received, and the case was discovered by the Health Visitor, who visited the house when the birth was registered.

### Acute Poliomyelitis or Infantile Paralysis.

This disease also became compulsorily notifiable on the 24th June, 1912. One case was notified on September 26th, in a child of 3½, resident in Tollcross. This was a mild case, involving only the right lower limb. There were four other children in the house, but these presented no symptoms of illness.

### Pulmonary Tuberculosis.

*Bacteriological Examination of Sputum.*—The majority of the cases of pulmonary tuberculosis were, as in previous years, notified on clinical grounds alone, the disease being in most cases well advanced, and diagnosis certain before notification was made. 124 specimens of sputum were received during the year from medical practitioners for examination. Of these, 30 were found to contain tubercle bacilli, and 94 were negative. Of the cases with positive sputum 27 were notified, and 2 were found to be resident within the Glasgow boundary. The remaining case died within a few days of the examination of the sputum, and was not notified.

The following table shows the number of cases which occurred throughout the year:—

New cases notified, - - - - -	98
New cases not notified (deaths), - - - - -	10
Old cases renotified by the same medical practitioner, -	1
"          "          different          "          "	3
Total, - - - - -	112

These cases were dealt with as follows:—

Admitted to hospital, - - - - -	47
Waiting admission at close of year, - - - - -	2
Refused treatment, - - - - -	30
Died before or soon after notification, - - - - -	25
Left the district, - - - - -	1
Notified "Do not Visit," - - - - -	4
Admitted to institutions outwith the County, - - - - -	3

The number of deaths recorded during the year was 47, and of these 27 were notified during 1912. Another fatal case notified in 1912 was certified as due to "acute general tuberculosis."

The cases notified for the first time during 1912 are classified in the following tables according to parish, age, and occupation:—

PARISH.	AGE-PERIOD IN YEARS.							TOTAL.
	Ages - 1	1-5	5-15	15-25	25-45	45-65	65 and over.	
Barony, -	1	3	11	17	29	7	1	69
Cadder, -	...	1	3	8	5	1	...	18
Carmunnock, -	...	...	...	...	3	.	...	3
Govan, -	...	...	...	...	...	...	1	1
Rutherglen, -	...	...	1	3	2	1	...	7
	1	4	15	28	39	9	2	98

	TOTAL.
<i>Domestic Work.</i> —Housewives, 23; Domestic, 3; Children, 6, - - - - -	32
<i>Scholars,</i> - - - - -	14
<i>Miners, &amp;c.</i> —Miners, 2; Colliery Fireman, 1, - - -	3
<i>Metalworkers.</i> —Moulders, 2; Ironworkers, 2; Plumber, 1, - - - - -	5
<i>Factory and Workshop Employees.</i> —Millworkers, 3; Weavers, 3; Chairmakers, 2; Machinist, 1; Tailoress, 1; Bleachfield worker, 1; Rope- worker, 1; Dyeworker, 1; Laundry worker, 1; Biscuit packer, 1; Confectionery worker 1, -	16
<i>Stoneworkers.</i> —Masons, 2, - - - - -	2
<i>Shopkeepers, &amp;c.</i> —Grocer, 1; Salesman, 1; Spirit Salesmen, 2; Pawnbroker's assistant, 1, - - -	5
<i>Miscellaneous.</i> —Labourers, 3; Clerkesses, 2; Book- keepers, 2; Clerks, 2; Watchman, 1; Store- keeper, 1; Carter, 1; Traveller, 1; Plate- layer, 1; Craneman, 1; Joiner, 1; Painter, 1; Warder, 1; Photographer, 1; Warehouseman, 1; Aerated-water worker, 1, - - - - -	21
Total, - - - - -	98

**Notification in Relation to Deaths.**—The number of unnotified cases during the year was 10, a percentage of 10·2 of the total number of new cases, compared with 20·3 for the year 1911. In these cases the medical practitioners who certified the deaths were communicated with. In 5, the cases had been previously notified to other local authorities; in 2, the doctor had been called in only a short time before death; in 1, the doctor stated he was unaware that pulmonary tuberculosis was compulsorily notifiable in Lanarkshire; and in 1, the diagnosis was definitely made only a short time before death; while the other case was a “transferred death.”

Year.	Cases Notified.	FATAL CASES.		FATAL CASES NOTIFIED.—PERIOD BETWEEN NOTIFICATION AND DEATH.				
		Un notified.	Notified.	1 month.	1-3 months.	3-6 months.	6-12 months.	Over 1 year.
1906	72	40	22	8	10	4	...	...
1907	66	34	32	12	7	3	7	3
1908	50	9	41	10	10	5	9	7
1909	70	21	35	13	8	6	4	4
1910	69	10	49	10	10	15	5	9
1911	59	12	22	5	6	2	2	7
1912	98	10	39*	14	5	7	4	9
	484	136	240	72	56	42	31	39

\* Includes two deaths transferred to Glasgow.

**Administrative Control.**—When once a case has been recorded, an effort is made to keep the patient under observation, and to give assistance. Every suitable case is offered institutional treatment, and while at home, both before admission to hospital and after discharge from it, is visited by the Health Visitor and Sanitary Inspectors. During the current year a Tuberculosis Officer has been appointed. He keeps in touch with all known cases, visits the cases as they are notified, and arranges for their admission to institutions. He also sees doubtful cases along with the doctor in attendance, and examines, wherever examination is desired or seems expedient, contacts of tuberculosis cases. Since July 15th, 1912, patients suffering from tuberculosis who are insured under the National Insurance Act are entitled to sanatorium benefit, but an endeavour is made to give the same treatment to all cases, whether insured or not. Of the cases notified in 1912, after July 15th, 9 were insured. Three of them refused treatment, the other 6 were admitted into sanatoria. 1 of these was in the area annexed by Glasgow, and treated by that authority. The

other 5 made an average stay of 13 weeks in the institutions. Several other cases notified in the latter half of the year were off work at the time payments became due under the Act, and consequently were non-insured at the date of notification, but, with improvement in health, re-started work and then became insured persons.

In the following tabular statement the cases notified each year have been accounted for in detail:—

		1906.						
Cases notified,	...	...	...	...	...	...	72	
Died during 1906,	...	...	...	...	...	22		
" 1907,	...	...	...	...	...	7		
" 1908,	...	...	...	...	...	5		
" 1910,	...	...	...	...	...	4		
Left the district,	...	...	...	...	...	11		
Within area annexed by the Burgh of Rutherglen and by Glasgow,	...	...	...	...	...	5		
Not traced,	...	...	...	...	...	14		
						68	68	
Cases under observation at end of 1912,	...	...	...	...	...	...	4	
		1907.						
Cases notified and renotified,	...	...	...	...	...	...	67	
Died during 1907,	...	...	...	...	...	25		
" 1908,	...	...	...	...	...	19		
" 1909,	...	...	...	...	...	5		
" 1911,	...	...	...	...	...	1		
Notified in previous years,	...	...	...	...	...	1		
Left the district,	...	...	...	...	...	8		
Not traced,	...	...	...	...	...	2		
Within area annexed by Glasgow,	...	...	...	...	...	6		
						67	67	
Cases under observation at end of 1912,	...	...	...	...	...	...	0	
		1908.						
Cases notified and renotified,	...	...	...	...	...	...	55	
Died during 1908,	...	...	...	...	...	17		
" 1909,	...	...	...	...	...	7		
" 1910,	...	...	...	...	...	4		
Notified in previous years,	...	...	...	...	...	5		
Left the district,	...	...	...	...	...	10		
Not traced,	...	...	...	...	...	4		
Not to be visited,	...	...	...	...	...	1		
Within area annexed by Glasgow,	...	...	...	...	...	5		
						53	53	
Cases under observation at end of 1912,	...	...	...	...	...	...	2	

1909.

Cases notified and renotified, ... ..	73
Died during 1909, ... ..	24
„    1910, ... ..	13
„    1911, ... ..	4
„    1912, ... ..	3
Notified in previous years, ... ..	3
Left the district, ... ..	10
Not traced, ... ..	6
Within area annexed by Glasgow, ... ..	5
Cured, ... ..	2
	<hr/>
	70
	70
	<hr/>
Cases under observation at end of 1912, ... ..	<u>3</u>

1910.

Cases notified and renotified, ... ..	78
Died during 1910, ... ..	28
„    1911, ... ..	7
„    1912, ... ..	4
Notified in previous years, ... ..	8
Notification withdrawn, ... ..	1
Left the district, .. ...	11
Not traced, ... ..	5
Within area annexed by Glasgow, ... ..	7
Cured, ... ..	1
	<hr/>
	72
	72
	<hr/>
Cases under observation at end of 1912, ... ..	<u>6</u>

1911.

Cases notified and renotified, ... ..	63
Died during 1911, ... ..	14
„    1912, ... ..	5
Notified in previous years, ... ..	4
Left the district, ... ..	14
Not traced, ... ..	4
Not to be visited, ... ..	1
Within area annexed by Glasgow, ... ..	13
Cured, ... ..	1
	<hr/>
	56
	56
	<hr/>
Cases under observation at end of 1912, ... ..	<u>7</u>



1912.

Cases notified and renotified, ... ..	102
Died during 1912, ... ..	28*
Notified in previous years, ... ..	4
Left the district, ... ..	3
Not to be visited, ... ..	1
Within area annexed by Glasgow, ... ..	53
	89
	89
Cases under observation at end of 1912, ... ..	13

\* Including 1 death from acute general tuberculosis and 2 transferred to Glasgow.

PULMONARY TUBERCULOSIS IN EACH REGISTRATION DISTRICT OF THE LOWER WARD.—AVERAGE ANNUAL NUMBER OF DEATHS FOR QUINQUENNIAL PERIODS, 1891-1910, AND FOR THE YEARS 1911-1912.

Registration District.	Popula- tion, Census 1911.	1891-1895.	1896-1900.	1901-1905.	1906-10.	1911.	1912.
<b>*BARONY—</b>							
Shettleston, - -	32,047	17·4	29·2	36·0	39·8	20	25
Springburn, - -		...	...	...	0·2	...	2
Maryhill, - -	2,998	0·6	1·0	0·8	0·4	...	...
Possilpark, - -	...	...	...	...	1·4	1	1
Garnghill, - -	...	...	...	...	...	...	...
<b>CADDER—</b>							
Eastern, - - -	9,143	7·2	4·6	4·6	4·8	7	9
Western, - - -	5,585	4·2	3·4	6·0	4·8	3	7
CARMUNNOCK, - -	747	1·0	1·6	0·8	1·2	1	...
GOVAN, - - - -	2,385†	3·4	2·8	1·0	...	...	1
RUTHERGLEN, - -	3,932	6·2	4·2	4·6	4·6	2	2
LOWER WARD DISTRICT,	56,837	41·8	47·2	54·2	57·4	34	47
Average Quinquennial Death-rate per 10,000 of the Population, -		12·83	11·70	12·40	11·3	6·23	8·60

\* Barony Parish was in 1897 united with Glasgow, and is now so designated.

† By an extension of the Burgh of Govan 5,642 of the population was annexed as from 15th August, 1901, and all the rates for this year are calculated upon an *Average Population*.

The populations of Govan Combination Institutions, Shieldhall Fever Hospital, and Gartloch Asylum, are deducted in calculating the rates for the Lower Ward and also for the County.

**Measles.**

In the following table, D6, attention should be directed mainly to columns numbered (3) and (6). These show the epidemic character of this disease by the great variation in the number of deaths registered each year, and in the death-rate per ten thousand of the population. The actual number of deaths has varied from nil to 50, and averaged over 20 per annum. During 1912, 24 children died from measles.

TABLE D6.—MEASLES.

YEAR.	NUMBERS.		RATES.		
	Cases Estimated.	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	340	17	5·0	10·9	5·4
1893	560	28	"	17·2	8·3
1894	320	16	"	9·3	4·9
1895	180	9	"	5·05	2·5
<i>Average,</i>	<i>350</i>	<i>17·5</i>	"	<i>10·5</i>	<i>5·2</i>
1896	540	27	"	14·5	7·2
1897	880	44	"	22·9	11·4
1898	540	27	"	13·4	6·7
1899	320	16	"	7·6	3·8
1900	260	13	"	5·9	2·9
<i>Average,</i>	<i>508</i>	<i>25·4</i>	"	<i>12·5</i>	<i>6·2</i>
1901	700	35	"	16·1	8·0
1902	220	11	"	5·3	2·6
1903	240	12	"	5·6	2·8
1904	700	35	"	15·3	7·6
1905	280	14	"	6·1	3·0
<i>Average,</i>	<i>428</i>	<i>21·4</i>	"	<i>9·7</i>	<i>4·8</i>
1906	380	19	"	7·8	3·9
1907	120	6	"	2·4	1·2
1908	1,000	50	"	19·5	9·7
1909	...	...	...	...	0·0
1910	780	39	5·0	14·7	7·4
<i>Average,</i>	<i>456</i>	<i>22·8</i>	"	<i>8·9</i>	<i>4·5</i>
1911	280	14	"	5·1	2·5
1912	480	24	"	8·7	4·3

**Whooping-Cough.**

The observations made with regard to measles are equally applicable to whooping-cough. The statistics given in Table D7 show the epidemic character of the illness, and special attention should be directed to columns numbered (3) and (6). The annual number of deaths have ranged from less than 10 to over 50 during the last 20 years. 18 deaths occurred during 1912.

TABLE D7.—WHOOPING-COUGH.

YEAR.	NUMBERS.		RATES.		
	Cases Estimated.	Deaths Registered.	Deaths per 100 Cases.	Cases per 1,000 Population.	Deaths per 10,000 Population.
(1)	(2)	(3)	(4)	(5)	(6)
1892	60	3	5.0	1.9	0.9
1893	220	11	"	6.7	3.3
1894	260	13	"	7.6	3.8
1895	220	11	"	6.1	3.0
<i>Average,</i>	<i>190.0</i>	<i>9.5</i>	"	<i>5.7</i>	<i>2.8</i>
1896	460	23	"	12.3	6.1
1897	600	30	"	15.6	7.8
1898	320	16	"	7.9	3.9
1899	300	15	"	7.1	3.5
1900	460	23	"	10.4	5.2
<i>Average,</i>	<i>428.0</i>	<i>21.4</i>	"	<i>10.6</i>	<i>5.3</i>
1901	1160	58	"	26.9	13.4
1902	260	13	"	6.2	3.1
1903	440	22	"	10.2	5.1
1904	400	20	"	8.7	4.3
1905	500	25	"	10.9	5.4
<i>Average,</i>	<i>552.0</i>	<i>27.6</i>	"	<i>12.6</i>	<i>6.3</i>
1906	620	31	"	12.8	6.4
1907	1020	51	"	2.0	10.2
1908	320	16	"	6.2	3.1
1909	680	34	"	13.0	6.5
1910	100	5	"	1.9	0.9
<i>Average,</i>	<i>548</i>	<i>27.4</i>	"	<i>10.8</i>	<i>5.4</i>
1911	560	28	"	10.2	5.1
1912	360	18	"	6.5	3.2

**Diarrhœal Diseases.**

The number of deaths registered as due to diarrhœal diseases was 27, compared with 51 during 1911. Though the much lower temperature which prevailed during the summer of 1912 had no doubt a considerable influence in this disease, one is justified in crediting a part to the assistance rendered by the Health Visitor.

The distribution of the deaths, month by month, according to registration district, is shown in the following table:—

Month.	Shettleston.	Possilpark.	Cadder East.	Cadder West.	Rutherglen.	Total.
January, ...	1	1	...	1	...	3
February, ...	4	...	...	1	...	5
March, ...	...	...	...	...	...	...
April, ...	2	...	1	...	...	3
May, ...	...	...	...	...	...	...
June, ...	...	...	...	...	...	...
July, ...	2	...	1	...	...	3
August, ...	1	...	...	...	1	2
September, ...	2	...	...	...	...	2
October, ...	2	...	...	2	...	4
November, ...	2	...	...	1	...	3
December, ...	1	...	...	1	...	2
<b>TOTALS,</b>	17	1	2	6	1	27

TABLE D8.—DIARRHŒA.

Year.	Numbers.	Rates.	Year.	Number.	Rates.
	Deaths.	Deaths per 10,000 population.		Deaths.	Deaths per 10,000 population.
(1)	(2)	(3)	(1)	(2)	(3)
1892	17	5·47	1901	56	12·94
1893	26	8·0	1902	30	7·25
1894	13	3·81	1903	31	7·23
1895	27	7·57	1904	41	9·01
<b>Average,</b>	<b>20·7</b>	<b>6·21</b>	1905	19	4·17
1896	18	4·83	<b>Average,</b>	<b>35·4</b>	<b>8·12</b>
1897	28	7·30	1906	32	6·61
1898	33	8·22	1907	23	4·63
1899	44	10·46	1908	44	8·59
1900	31	7·06	1909	20	3·84
<b>Average,</b>	<b>30·8</b>	<b>7·57</b>	1910	36	6·81
			<b>Average,</b>	<b>31·0</b>	<b>6·09</b>
			1911	51	9·35
			1912	27	4·88

**School Closure.**—The following schools were closed on account of infectious diseases, and certificates were signed by two members of the Local Authority under the Scotch Education Code, Article 30 :—

School.	Parish.	Disease. Prevalent.	Period of Closure.
Chryston Public School, (Infant Department.)	Cadder.	Measles.	22nd Feb. to 15th Mar., 1912.
Bridgend Public School, (Infant Department.)	„	„	7th to 26th Mar., 1912.
Gartcosh Public School. (Infant Department.)	„	Whooping-cough.	4th to 22nd March, 1912.
Gartcosh Public School,	„	Scarlet Fever.	9th to 24th Dec., 1912.

*Exclusion of Scholars.*—Special certificates of exclusion of scholars under the Public Health Act were granted, in accordance with the requirements of the Scotch Education Code, Article 19F, as follows:—Diphtheria, 82; scarlet fever, 262; enteric fever, 4; erysipelas, 5; phthisis, 9; other tuberculous disease, 3; measles, 96; whooping-cough, 12; chickenpox, 7; ringworm, 3; scabies, 3; and eczema, 1.

*Anthrax.*—3 outbreaks of this disease among cattle were reported, namely:—Lenzie, 1; Bishopbriggs, 1; and Eastfield, 1.

### Hospitals.

The number of cases removed to hospital during the year was 562. The following Table F, in which the cases are classified according to the disease from which the patient suffered, shows that 104 suffered from diphtheria, 320 from scarlet fever, 9 from typhoid fever, 29 from erysipelas, 12 from puerperal fever, 3 from typhus fever, 70 from phthisis, 10 from measles, 2 from whooping-cough, 1 from gastro-enteritis, and 2 from scabies.

The Lightburn Joint-Hospital expenditure for the year ending Whitsunday, 1912, was £4,807 4s. 5d. The cost rate of maintenance of each patient was £5 0s. 1d., as compared with £3 8s. 11d. in the preceding year.

TABLE F.—HOSPITAL STATISTICS FOR THE YEAR 1912.

HOSPITAL.	Cases in Hospital at the beginning of year.	Admitted during year.	Dis-CHARGED.		Cases remaining in Hospital at the close of year.	NATURE OF CASES ADMITTED DURING YEAR.										
			Recovered.	Died.		Diphtheria.	Scarlet Fever.	Typhoid Fever.	Erysipelas.	Puerperal.	Typhus Fever.	Phthisis.	Measles.	Whooping-cough.	Gastro-Enteritis.	Scabies.
Lightburn,	59	533	497	36	59	103	317	8	11	9	1	69	10	2	1	2
Shieldhall,	...	27	27	...	...	1	3	1	18	2	2	...	...	...	...	...
Others,	...	2	2	...	...	...	...	...	...	1	...	1	...	...	...	...
<b>TOTAL,</b>	<b>59</b>	<b>562</b>	<b>526</b>	<b>36</b>	<b>59</b>	<b>104</b>	<b>320</b>	<b>9</b>	<b>29</b>	<b>12</b>	<b>3</b>	<b>70</b>	<b>10</b>	<b>2</b>	<b>1</b>	<b>2</b>

### Health Visitor.

**Notification of Births Act, 1907.**—The number of notifications received during 1912 was 1,338; while the number of births registered was 1,466, giving a percentage proportion of notifications to registrations of 91·2. For 1910 the figure was 79·1, and for 1911 92·1. When a birth is registered which has not previously been notified, a printed intimation of the provisions of the Act is sent out to the parents, who almost invariably plead ignorance of the Act as the excuse for failing to notify. In these cases it is usually a handy-woman who has conducted the labour.

**Work of Health Visitor.**—The work during 1912 was carried out on the same lines as in former years. From March to July, however, it had to be suspended owing to a severe illness contracted by Nurse Winchester in the course of her work. From Table G it will be seen that in the remaining months 1,098 visits were made by nurse to 472 infants, and advice given as to feeding, clothing, attention to eyes, &c. 415 infants were breast-fed alone, a percentage of 88; 22 had bottle-feeding, or food in addition; 30 were fed on cows' milk alone; and 5 on patent foods alone. These figures refer to the method of feeding adopted at the time of the first visit to the case; but very frequently, from absence of milk or the necessity of the mother going out to work, breast-feeding is suspended. It is in such cases that the advice of the Health Visitor proves most valuable, in the preparation and administration of food suited to the age of the infants, as the ignorance, and even carelessness, in this respect, of the younger mothers especially, is almost incredible, and is responsible for a considerable part of the infantile mortality. In dirty houses, in cases of illegitimate children, and where there is evidence of gross carelessness on the part of the mother, nurse makes surprise visits from time to time, revisiting in this way cases that have been on her books for over two years, as she finds that the expectation of a visit makes for better care and cleanliness of the children.

Old customs die hard; and dummy teats are still too much in evidence. There is still improvement, however, in the type of bottle used, the "long tube" bottle being now almost a curiosity. In the poorer houses common gill bottles with teats stretched over the neck are frequently used, and though at the shoulders these are not easily cleaned, they are preferable to the old-fashioned bottles. Stedman's teething powders and soothing syrups are still used a good deal; and it is no rare thing for infants of a few months to be dosed with rum or whisky to keep them quiet while the mother is busy with house work.

16 cases of ophthalmia were treated, most of them slight or moderately severe cases, which responded quickly and completely to prompt treatment. 3 cases in Shettleston were, however, very acute, the first receiving 47 visits, being seen thrice daily for 12 days; the second 31 visits, thrice daily for 7 days; and the third 15 visits. All three recovered, the first one only having a slight corneal opacity on one eye.

Besides the work done for infants, a number of visits were made in connection with infectious or contagious diseases. These may be classified as follows:—

Conjunctivitis, - - -	37	Scabies, - - -	8
Pulmonary Tuberculosis, 11		Impetigo, - - -	1
Ringworm, - - -	34	Measles, - - -	1

TABLE G.—BIRTHS NOTIFIED DURING 1912, UNDER THE NOTIFICATION OF BIRTHS ACT, 1907.—VISITS MADE BY HEALTH VISITOR, &C.

MONTH.	BIRTHS.		FIRST VISIT.	REVISITS FOR			METHOD OF FEEDING INFANTS.					IN ATTENDANCE.		
	Notified.	Registered.		Infant.	Mother.	Other Reasons.	Breast.			Cows' Milk.	Patent Food.	Doctor.	Midwife.	Handy-woman.
							Alone.	With Bottle.	With Food.					
1912.														
January, ...	124	138	79	78	...	...	62	1	2	13	1	25	40	14
February, ...	131	129	60	113	...	...	55	...	...	4	1	22	33	5
March, ...	108	126	...	...	...	...	...	...	...	...	...	...	...	...
April, ...	156	152	...	...	...	...	...	...	...	...	...	...	...	...
May, ...	126	167	...	...	...	...	...	...	...	...	...	...	...	...
June, ...	110	113	...	...	...	...	...	...	...	...	...	...	...	...
July, ...	124	148	...	...	...	...	...	...	...	...	...	...	...	...
August, ...	109	122	100	31	...	...	86	9	2	2	1	13	67	20
September, ...	111	120	63	89	...	...	58	2	3	...	...	10	45	8
October, ...	128	138	76	97	...	...	70	1	1	4	...	26	40	10
November, ...	60	61	55	103	...	...	48	1	...	6	...	15	28	12
December, ...	51	52	39	115	...	...	36	...	...	1	2	12	18	9
Total, ...	1,338	1,466	472	626	...	...	415	14	8	30	5	123	271	78

The absence of visits, &c., in the above table during the five months, March to July, was due to Nurse Winchester being off duty through illness.



### III.—General Sanitation.

The administrative action relating to housing might be discussed from different points of view, either with regard to existing buildings found to be in an insanitary condition, or with regard to the plans of new houses to be erected. The chief legislative enactments controlling action are the Public Health Act and the Housing Acts. The provisions under the former statute are still found more helpful in securing remedial measures than the provisions of Sections 14 and 15 of the Housing and Town Planning Act, from which so much had been hoped. The words "reasonably fit for human habitation" were thought to have had a wide significance, including the provision of proper domestic and sanitary conveniences, but that view has not been upheld in Court.

**Public Health Act and Building Bye-laws.**—In terms of the Public Health (Scotland) Act, 1897, the word "house" means a dwelling-house, and includes schools, also factories and other buildings in which persons are employed.

The plans lodged under the Building Bye laws numbered 41. The usual statistical Tables I., II., and III. are given in the Annual Report of the District Sanitary Inspector, and will not be reproduced here. Table I. shows the number of plans lodged month by month, classified according to the parish in which they were to be erected. Table II. shows the nature of the buildings to be erected, and may be summarised thus:—The erection of new buildings—Houses and shops, 17; workshops, 10; public buildings, 6; and other buildings, 1—total plans, 34. Alterations in the mode of occupancy of existing buildings—Houses and shops, 4; public buildings, 1; and other buildings, 2—total plans, 7. Table III. shows the number of houses classified according to size, and the parish in which they were to be erected.

The number of houses to be erected as shown on the plans lodged during 1912 numbered 90. During the first six years, 1904-9, the average number was 472. During the year 1910 the number was 173; and in 1911, 138.

**One-Apartment Dwellings.**—Table J shows the houses erected each year classified according to size, and in the last column the percentage proportion of one-apartment houses is given. This proportion has varied considerably from year to year. The plans for the one-apartment dwellings were for Shettleston and Tollcross, 13 of the 15 being quarters for single men in the police force.

TABLE J.—SHOWING NUMBER AND SIZE OF HOUSES SET FORTH IN PLANS SUBMITTED UNDER BUILDING BYE-LAWS DURING EACH OF THE FIFTEEN YEARS, 1898-1912.

YEAR.	One Apartment.	Two Apartments.	Three Apartments.	Four Apartments.	Five Apartments and upwards.	Total Houses.	Percentage Proportion of One-Apartment Houses.
1898, -	95	511	140	26	33	805	11·8
1899, -	93	294	127	35	85	634	14·6
1900, -	7	288	82	21	41	439	1·5
1901, -	99	620	255	2	26	1,002	9·8
1902, -	105	428	170	36	91	830	12·6
1903, -	218	599	135	35	117	1,104	19·7
1904, -	29	98	204	115	130	576	5·0
1905, -	66	202	180	34	180	662	9·9
1906, -	85	278	62	22	218	665	12·7
1907, -	38	154	72	35	83	382	9·9
1908, -	45	188	34	21	78	366	12·2
1909, -	1	110	8	19	44	182	0·5
1910, -	2	98	33	23	17	173	1·1
1911, -	4	54	56	2	22	138	2·9
1912, -	15	41	16	9	9	90	16·6

The following table, extracted from Vol. I., Part 24, page 1539, of the Census Report, 1911, shows the number of occupied houses, with the number of windowed rooms, classified according to parish:—

Parish.	NUMBER OF WINDOWED ROOMS.							Total.
	One.	Two.	Three.	Four.	Five.	Six.	Seven and up.	
Glasgow,* - -	1,305	3,401	1,015	362	307	138	269	6,797
Cadder, - -	345	1,074	369	229	318	106	260	2,701
Carmunnock, -	10	59	36	16	11	8	27	167
Govan,* - -	5	16	15	...	2	...	17	55
Rutherglen, -	194	385	54	13	19	60	93	818
Total, - -	1,859	4,935	1,489	620	657	312	666	10,538
	17·65	46·88	14·14	5·889	6·24	2·96	6·23	...

\* Figures for the Area previous to annexation.

**School Buildings.**—Cadder Parish School Board have had under consideration the question of improving the lavatory accommodation at Lochfaulds School, and have arranged to introduce water-closets in place of the present pan-closets. The work of alteration has been carried out during the current year.

Plans were approved by the District Committee for a new school at Gartcosh for Cadder School Board, and the buildings are in course of construction.

**Housing Acts.**—A circular was issued by the Local Government Board, dated 21st November, 1911, referring to Article V. of the Housing (Inspection of District) Regulations, which requires the Medical Officer of Health, or other officer designated by the Local Authority to act under these Regulations, to report annually to the Board with regard to the matters prescribed therein. Many inspections were made and improvements carried out in dwellings, especially with regard to the provision of domestic and sanitary conveniences, but most of the work was carried through under the Public Health Act. The following tabular statement, prepared by the District Sanitary Inspector, summarises the inspections made, and action taken:—

HOUSES DEALT WITH FROM 15TH MAY, 1911, TO 15TH MAY, 1912,  
AND FROM 15TH MAY, 1912, TO 15TH MAY, 1913.

	1911-12.	1912-13.
Number of dwelling-houses inspected, - - -	30	92
Houses found unfit for habitation, - - -	28	29
Representations made to Local Authority, - - -	—	—
Closing Orders made, - - -	—	—
Defects remedied after making Closing Orders, - - -	—	—
"          without          "          " - - -	10	4
Houses closed voluntarily, - - -	13	3
Remedies in progress or arranged for, - - -	68	85
Demolished, - - -	7	—

A closing order made in connection with Mid Springfield, Bishopbriggs, in the year 1911, became operative in 1912. Notice was served to the occupier to vacate the house, which was ultimately closed, as the owners declined to put it in order.

**Workshops.**—The number of workshops on the register at the close of the year was 97; this includes 5 retail bakehouses.

**Outworkers.**—Under Section 107, there were received from the Sanitary Authorities of Glasgow and others, 26 addresses of outworkers engaged within the Lower Ward in making wearing apparel. 7 of these were located in Shettleston, 11 in Tollcross, 2 in Chryston, 2 in Bishopbriggs, 2 in Stepps, 1 in Auchinairn, and 1 in Rutherglen.

Thirty-one inspections of outworkers' premises were made, and these found in order.

1.—INSPECTIONS MADE BY THE SANITARY INSPECTORS.

PREMISES.	NUMBER OF—		
	Inspections.	Written Notices.	Prosecutions.
Factories, - - - - - (Including factory laundries.)	16	...	...
Workshops, - - - - - (Including workshop laundries.)	34	1	...
Workplaces, - - - - - (Other than outworkers' premises included in Part 3 of this report.)	...	...	...
Total, - - - - -	50	1	...

2.—DEFECTS FOUND.

PARTICULARS.	NUMBER OF DEFECTS.			Number of Prosecutions.
	Found.	Remedied.	Referred to H. M. Inspector.	
Nuisances under the Public Health Acts :—				
Want of cleanliness, - - -	1	1	...	...
Want of ventilation, - - -	...	...	...	...
Want of drainage of floors, - -	...	...	...	...
Other nuisances, - - -	...	...	...	...
Sanitary Accommodation, {	Insufficient, -	...	...	...
	Unsuitable or defective, -	...	...	...
	Not separate for sexes, - -	...	...	...
Total, - - - - -	1	1	...	...

3.—HOME WORK.

Lists received from employers, ...	...	...	...	...	—
Addresses of outworkers, ...	...	...	...	...	26
Addresses of outworkers received from other Councils, ...	...	...	...	...	26
Addresses of outworkers forwarded to other Councils, ...	...	...	...	...	—
Prosecutions, ...	...	...	...	...	—
Inspections of outworkers' premises, ...	...	...	...	...	31
Outwork in unwholesome premises, ...	...	...	...	...	—
Outwork in infected premises, ...	...	...	...	...	—

## 4.—REGISTERED WORKSHOPS.

Total number of workshops on register at end of 1912 was 97. For detailed list see Table H.

## 5.—OTHER MATTERS.

Matters notified to H.M. Inspector of Factories :—

Failure to affix Abstract of the Factory and Workshop Act (S. 133), 1

A detailed tabular statement, prepared from the register of workshops, classified according to the trade or industry, is here given, along with a note of the number of employees :—

TABLE H.—LIST OF WORKSHOPS, INCLUDING RETAIL BAKEHOUSES AND LAUNDRIES, CLASSIFIED ACCORDING TO THE NATURE OF THE INDUSTRY.

PARISH AND LOCALITY.	Dressmakers and Milliners.	Tailors.	Bakers.	Shoemakers.	Blacksmiths.	Joiners.	Plumbers.	Laundries.	Painters.	Cartwrights.	Other Manufacturers.	Total.	
<i>Barony—</i>													
Shettleston, . . .	...	...	...	1	...	...	...	1	...	...	...	2	
Lambhill, . . .	2	...	...	1	1	...	...	...	...	...	...	4	
<i>Cadder—</i>													
Muirhead and Chryston,	6	3	2	4	1	3	2	...	1	...	8	30	
Bishopbriggs, . . .	6	...	...	2	2	2	2	...	...	1	7	22	
Mollinsburn, . . .	...	1	...	...	1	1	...	...	...	...	1	4	
Auchinloch, . . .	...	...	...	...	...	1	...	...	...	...	...	1	
Lenzie, . . .	2	...	1	2	1	2	1	...	1	...	4	14	
Stepps, . . .	...	...	...	2	...	1	2	1	1	...	...	7	
Garnqueen, . . .	...	...	1	1	...	...	...	...	...	...	...	2	
<i>Carmunnock, . . .</i>	...	1	...	...	1	2	...	...	...	1	...	5	
<i>Govan, . . .</i>	...	...	...	...	...	...	...	...	...	...	...	...	
<i>Rutherglen, . . .</i>	...	...	1	3	...	...	...	...	...	...	2	6	
Total Workshops, . . .	16	5	5	16	7	12	7	2	3	2	22	97	
EMPLOYEES.	Females.	21	6	..	1	..	..	..	14	1	..	101	144
	Males.	..	3	9	11	12	44	19	3	9	1	77	188
	Total.	21	9	9	12	12	44	19	17	10	1	178	332

**Special Districts.**

The extent to which local administration contributes to the advancement of general sanitation may be realised from the number of districts formed for special purposes—water supply, drainage and sewage disposal, scavenging, and lighting. The number of districts so formed is shown in the following tabular statement, where a blank space in the assessment column will be understood to indicate that no district has been formed for the special purpose indicated.

TABLE I.—LIST OF **Special Districts** IN THE **Lower Ward**, AND THE RATES LEVIED FOR THE YEAR 1912-1913 (AS ASCERTAINED FROM THE COUNTY CLERK).

District.	Parish.	RATE OF ASSESSMENT PER £.				
		Water.	Drainage.	Sewage Purification.	Lighting.	Scavenging.
†Shettleston and Tollicross,	Glasgow,	{ Levied by } { Glasgow, }	† 2½d.	4d.	2½d.	6½d.
Bishopbriggs, . . . . .	{ Glasgow } { & Cadder, }	{ 1s. 2½d. }	11d.	—	3d.	4½d.
Linthouse, . . . . .	Govan,	{ Levied by } { Glasgow, }	—	—	¾d.	—
South Lenzie, . . . . .	Cadder,	1s.	5d.	—	4½d.	3½d.
Stepps, . . . . .	do.,	10d.	8d.	—	4½d.	2½d.
†Millerston, . . . . .	Glasgow,	{ Levied by } { Glasgow, }	† 2¾d.	4d.	4½d.	—
Carmunnock, . . . . .	Carmunnock,	1s. 4d.	10d.	—	—	—
*Chryston and Muirhead,	Cadder,	10d.	1s.	—	4d.	3½d.
Lambhill, . . . . .	Glasgow,	{ Levied by } { Glasgow, }	—	—	5d.	—
Rutherglen, . . . . .	Rutherglen,	do.,	3d.	—	3½d.	2d.

\* These two villages are within the South Cadder Special Water Supply District, which, with the North Cadder Special Water Supply District, embraces almost the whole parish of Cadder. The rates levied in these districts are—in North Cadder District, 1s. 1d. ; and in South Cadder District, 10d.

† In addition to the Drainage Rate of 2¾d. there is also a rate of 3d. for Purification Purposes in the Southern portion of the Barony Drainage District.

If the districts be classified according to the number of purposes for which local administration and taxation are applied, we obtain the following results:—

W., D., S., L., -	Bishopbriggs, Chryston and Muirhead, South Lenzie, Stepps.
*D., S., L., - -	Shettleston and Tollcross, Rutherglen.
W., D., - - -	Carmunnock.
*L., - - - -	Linthouse, Lambhill.

\* These districts are within the area supplied with water by the City of Glasgow.

### Water Supply.

**Public Supplies.—Shettleston.**—In this area it will be remembered that Glasgow Corporation do not guarantee a proper supply of water for tenement properties, unless there be a cistern provided under the roof for at least the top storey. In several tenements large cisterns have been provided capable of supplying the three upper storeys, leaving only the ground floor to be supplied direct from the main. The condition of these cisterns situated under the roof was the subject of inquiry.

Two systematic inspections of the cisterns in use were made during the year. In March, 242 of the covered cisterns and 59 of the open cisterns, out of a total of 631 storage cisterns, were found in a foul state, the covers in many cases being badly fitting or improperly adjusted, allowing of contamination from dust, insects, and vermin.

The owners were communicated with, requiring them to have the cisterns cleaned and properly-fitting covers supplied; and at a subsequent examination in September only 37 of the cisterns were found to be dirty.

**Lambhill.**—A complaint was received by the District Clerk as to the dirty and unwholesome character of the water supply to dwelling-houses at Over Possil. From the information afforded by the complainer it would appear that the water main, which is the property of the Glasgow Corporation, had become silted, with a consequent shortage of supply. With a view to increasing the water supply, boring or scraping of the pipes had been resorted to, with the result that for several months the colour of the water was sufficient to render it unfit for domestic use. The Glasgow Corporation were communicated with, and a new main laid, and the complaint removed.

**North and South Cadder Special Water Districts.**—A complaint was received by the District Clerk in December, regarding the insufficiency of the water supply to the Boys' Industrial School,

Kenmure, Bishopbriggs. Investigation showed that this insufficiency was due to a leakage on the main near Cadder Village, and to waste of water by the running of taps during a spell of frost. With the repair of the pipe the supply again became adequate.

**Private Supplies.**—One sample of water was taken for analysis from an old pump well, Busby Road, Carmunnock. The results of analysis, which were considered satisfactory, were as follows:—Chlorides as Cl., 2·7; nitrites as nitrogen, trace; nitrates as nitrogen, ·50; free ammonia as nitrogen, nil; albuminoid ammonia as nitrogen, ·0016; oxygen absorbed, ·165; total hardness, 19·9; total solids, 40·0; colour, 2·4; and alkalinity, 15·0, parts per 100,000.

### **Drainage and Sewage Disposal.**

*Carmunnock.*—The new Sewage Purification Works and several more sewers were completed and in operation by October, and so far have been showing satisfactory results.

*Glenboig.*—The question of forming a Special Drainage District to include the whole of the village, Lower and Middle Ward portion, was again considered, but nothing definite was arranged.

*Chryston and Muirhead.*—The Sewage Purification Works opened last year yielded satisfactory results.

*Stepps.*—During the year special sampling of the crude sewage, tank and filter effluent was carried out at the Sewage Purification Works, full particulars of which are given in the Chemical Laboratory and Rivers Pollution Prevention portions of this report.

### **Scavenging.**

There are six special scavenging districts within the Lower Ward area.

Complaint was received during the year regarding ashpits at Kenmure Avenue, Bishopbriggs, being in a filthy condition, and alleging that children occasionally gained access to the ashpits, looking for attractive pieces of rubbish and scattering it about the place. An inspection was made by the Medical Officer and Sanitary Inspector. The notes made of this inspection were as follows:—

“ Inspected the ashpits complained of. Found that there are six ashpits situated at the rear of the tenement properties. These ashpits have an opening on a mews lane, and each opening is fitted with a door, which is fastened by a bolt from within. Looking towards Kenmure Wood the lane is somewhat secluded, and one can easily



understand that boys may do much mischief without being seen. Suggested to the Sanitary Inspector that the scavenger should pay special attention to the bolting of the doors, and the use of the ashpits should be abolished as soon as possible, being replaced by portable bins. This could readily be done by extending the opening to the ground level, concreting the floor area, and supplying two or more portable ashbins. In some places the most suitable form of ashbin is wood, lined with iron, with a shaft on either side to allow two men to carry it.

“Subsequently called at the police station, and advised the constable in charge of the complaint that mischief was being done by boys which might require some attention. He promised to look into the matter and give any assistance necessary.”

The matter was left in the hands of the District Sanitary Inspector.

The refuse coups at Brackenray and Springfield Farm were inspected by the County Medical Officer during the year.

### Nuisances.

*Mount Vernon.*—Several complaints having been made as to offensive odours from manholes on the sewers on Sandyhills Road, Mount Vernon Road, and Blackcroft Road, inspection was made by the Medical Officer and Sanitary Inspector, and the following recommendations were carried out, viz., fitting the manholes with close covers, erecting three ventilating shafts at specified points on the line of the sewers, and the provision of a flushing tank at the head of the sewer in Sandyhills Road.

*Chryston and Muirhead.*—Complaints being received as to the offensive condition of a ditch in a field adjoining Drumcavil Road, through the discharge of sewage on its way to the Bothlin Burn from the temporary tank on that road, a report was submitted and approved, recommending the laying of a 9-inch pipe in the ditch.

*Burnside.*—Complaints were received from residents in Blairbeth Road and Burnside Road as to offensive odours from sewer manholes in these streets. An inspection was made by the Medical Officer, Sanitary Inspector, and the Committee's Engineers, and a joint-report recommending the closing of several manholes and the erection of three ventilating shafts was submitted and approved. No further complaints have been received since this work was carried out.

*Cumbernauld Road Sewer.*—Complaints of offensive odours were again received from Glasgow Corporation. This is fully dealt with in the County portion of this report, page 66.

**Dairies.**

**Veterinary Inspection of Dairy Herds.**—By arrangement with the County Executive Committee, who have appointed a veterinary surgeon devoting his whole time to the work, the inspection of dairy herds was carried out as formerly. The results of these inspections during the season ending May, 1913, are given in the following table:—

TABULAR STATEMENT, SHOWING RESULTS OF THE VETERINARY INSPECTION OF DAIRY HERDS IN THE LOWER WARD DISTRICT, CLASSIFIED ACCORDING TO PARISH.

PARISH.	Herds.	Cows.	Suspected Tubercle.				Cows with Abnormal Conditions of Udders.						TOTAL.	
			Samples of Milk.	Result.				Tubercle.	Mammitis.	Eruption on Teats.	Induration N.T.	Indurated Teats.		Atrophy.
				Smear.		Biological.								
				+	-	+	-							
Barony, -	23	452	...	...	...	...	...	...	8	3	4	11	25	51
Cadder, -	74	1,294	6	2	4	...	4	2	18	3	4	34	57	122
Carmunnock, -	22	658	2	2	...	...	...	2	6	1	9	8	34	60
Rutherglen, -	8	113	...	...	...	...	...	...	3	...	5	...	12	20
Total, -	127	2,517	8	4	4	...	4	4	35	7	22	53	128	253

When the smear proved positive no biological examination was done.

The total figures for abnormal conditions of udders include 4 cases of suspected tubercle which gave negative results.

This shows that 8 samples of milk were taken from suspected udders, and that 4 of these gave positive results. So soon as these results were obtained the owners were communicated with.

**Offensive Businesses.**

**Knackeries.**—The business at Dryfield has been carried on without any cause for complaint.

An application was submitted to the Public Health Committee for sanction to establish the business of tallow melter and knacker at Cranhill, Shettleston, with relative plans of existing buildings, along with a report by the Sanitary Inspector, pointing out that the premises in situation and in structure and the proposed drainage disposal were entirely unsuitable. After consideration, the Public Health Committee recommended the District Committee to refuse sanction, and this was done.

**Blood-drying Work at Carntyne.**—There has been no cause for complaint in connection with these works during the year.

**Pig-styes.**—Application was made for sanction to erect a piggery at premises in Garnkirk Road, Chryston, but on account of the proximity to dwelling-houses, and of the unsatisfactory drainage disposal of the proposed building, the Committee declined to give their sanction.

Three small piggeries in the Garnqueen district, which were in a dilapidated state and badly kept, were demolished and the sites cleared.

**Fish Meal and Guano Works.**—In connection with the works at Rutherglen, objection was taken by the Glasgow Corporation to the discharge of water used in condensing the vapours generated in the process of drying the fish offal into the River Clyde. The water used for this purpose is drawn from the river to high-level tanks within the works, and, after being used for the purpose described, flows back into the river by a 9-inch pipe, discharging on to the surface of the river under normal conditions. Samples were obtained for analysis, and the result showed no evidence of serious pollution, but only rather offensive odours. On the advice of this department, the discharge pipe was carried out into the river under the surface for a distance of 18 feet, and there has been no further complaint.