[Report 1907] / Medical Officer of Health, Glasgow.

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REPORT OF THE MEDICAL OFFICER OF HEALTH.

1907.

SECTION I.

The Local Government Board, in their circular of instructions to Medical Officers of Health, require—(*a*) A general account of the influences and conditions injurious to the health of the burgh, and of the measures that should be adopted for its improvement.

It has been customary in former years to preface this with a summary of the vital statistics of the year, and these are presented in the following Table:—

	Registrar General's Estimate.		Medical Officer's Estimate.
Population, ...	847,584	...	806,801
Acreage, ...	...	12,796*	...
Persons per acre, ...	66·2	...	63·1
Number of Inhabited Houses, ...	...	166,894	...
Deaths—Number registered, ...	...	15,659	...
„ After correction for Institutions, &c., ...	...	14,807	...
Births—Number registered, ...	...	24,006	...
„ After correction, ...	...	23,926	...
Death-rate per 1,000 living—All causes, ...	17·4	...	18·4
Birth-rate per 1,000 living, ...	28·3	...	29·7
Deaths under One Year, ...	...	3,075	...
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Zymotic diseases, ...	...	3·3	18·4
Tuberculous diseases—			
(*a*) Phthisis, ... 1·6	...	2·6	
(*b*) Others, ... 1·0			
Diseases of respiratory system, ... 1·7	...	3·6	
Pneumonia, ... 1·9			
Diseases of circulatory system, ...	...	1·6	
Diseases of nervous system, ...	...	1·5	
Malignant diseases (cancer, &c.), ...	...	·8	
Septic diseases, ...	...	·2	
Violence, ...	...	·5	
Premature births, ...	...	·6	
All other causes, ...	...	3·7	

* Includes 108 acres in Kinning Park added to the City in 1905.

It will be observed from the Table that the population, as estimated by the Medical Officer of Health, is less than that of the Registrar-General by about 40,000. When the deaths, after correction for institutions, are applied to this lower estimate, the resulting rate is one per thousand higher than that of the Registrar-General, viz., 18·4 per thousand instead of 17·4. It is unnecessary to return to the arguments formerly advanced regarding the advantage of quinquennial enumerations, but it may be well to repeat the remark contained in last year's Report that all subsequent rates should be used with a certain degree of reserve until the next census reveals the actual number of the population.

TEMPERATURE AND RAINFALL.

In the past year, according to Professor Becker, the days on which rain fell numbered 214, and the amount collected was equal to 42·74 inches, or 8·69 in excess of the average of 39 years. There were 221 days on which the sun shone, and snow fell on 17 days.

The mean temperature exceeded the average of 39 years in January and March, and in September, October, November, and December.

The following Table, compiled from the information supplied by Professor Becker, shows the mean temperature and rainfall for each month, with the plus or minus difference compared with the average of 39 years:—

TABLE A.

ABSTRACT of METEOROLOGICAL OBSERVATIONS taken at GLASGOW OBSERVATORY during 1907.

Months.	Temperature.				Rainfall.		
	Highest Temperature in Shade.	Lowest Temperature in Shade.	Mean Temperature for Month.	Departure from Average of 39 Years.	No. of Days it fell.	Amount Collected, in inches.	Departure from average of 39 Years.
January, ...	49°·5	21°·2	39°·6	+1°·0	21	2·14	-1·58
February, ...	49°·2	21°·4	37°·6	-1°·3	14	2·61	-0·39
March, ...	61°·3	28°·8	42°·5	+2°·3	18	3·98	+1·43
April, ...	62°·3	31°·8	44°·5	-0°·1	14	1·72	-0·28
May, ...	68°·7	36°·6	47°·9	-1°·5	20	3·99	+1·50
June, ...	70°·6	41°·2	51°·2	-4°·0	23	4·15	+1·50
July, ...	82°·3	42°·9	56°·1	-1°·4	13	2·96	-0·14
August, ...	66°·1	42°·3	54°·2	-2°·5	23	5·28	+1·37
September, ...	71°·2	37°·1	54°·1	+1°·1	6	1·40	+2·17
October, ...	59°·2	33°·4	48°·1	+1°·3	22	6·80	+3·08
November, ...	56°·0	26°·4	42°·8	+0°·6	17	2·23	-1·46
December, ...	49°·8	26°·0	39°·7	+0°·9	23	5·48	+1·49
Total, ...	...	...	...	...	214	42·74	+8·69

POPULATION.

The Registrar-General's estimate of the population of Glasgow at the middle of 1907 was 847,584, or an increase of 11,959 on his estimate for 1906.

This estimate, as has formerly been explained, is based on the rate of increase which obtained during the inter-censal period 1891-1901, and exceeds by 40,783 that obtained by the Medical Officer of Health on the basis of the inhabited houses for the year under review.

The number of inhabited houses within the City at 1st June, 1907, was 166,894, as against 166,306 in 1906, or an increase of 588. Of this total, 128,344 are within and 38,550 are beyond the Parliamentary boundary.

Within the former area, which represents in a general way the City as it existed prior to the extension of 1891, the decrease which began in 1904 has continued, so that now there are 3,089 fewer houses than in 1903.

Excluding Kinning Park, the movements in both areas are shown in the following Table:—

GLASGOW.—Inhabited Houses WITHIN and BEYOND Parliamentary Boundary in Several Years (excluding Kinning Park).

Year.	Within.			Beyond.		
	No.	Difference.		No.	Difference.	
		+	−		+	−
1897, ...	125,475	...	...	23,482	...	...
1898, ...	127,276	1,801	...	24,897	1,415	...
1899, ...	129,071	1,795	...	26,425	1,528	...
1900, ...	129,647	576	...	27,732	1,307	...
1901, ...	130,962	1,315	...	29,026	1,294	...
1902, ...	131,339	377	...	29,908	882	...
1903, ...	131,433	94	...	31,010	1,102	...
1904, ...	130,626	...	807	32,376	1,366	...
1905, ...	129,209	...	1,417	33,679	1,303	...
1906, ...	128,608	...	601	34,900	1,221	...
1907, ...	128,344	...	264	35,790	890	...

While there is still an increase in the number of houses in the area beyond the Parliamentary Burgh, it will be observed that the increase during 1907 was only 890, as against 1,366, 1,303, and 1,221 in the three preceding years.

The inclusion of Kinning Park in 1905 added 2,878 houses to the area beyond the boundary of the Parliamentary Burgh, and these have since been reduced to 2,760. The result is shown in the following Table:—

GLASGOW.—Inhabited Houses, 1905, 1906, and 1907.

Year.	Municipal Area *within* Parliamentary Boundary.	Municipal Area *beyond* Parliamentary Boundary (including Kinning Park).		
		Less Kinning Park.	Kinning Park.	Including Kinning Park.
1905, ...	129,209	33,679	2,878	36,557
1906, ...	128,608	34,900	2,798	37,698
1907, ...	128,344	35,790	2,760	38,550

ESTIMATE FOR 1907.

Proceeding, by the usual method, to estimate the population inhabiting these houses, and adding 21,179 persons resident in institutions, as ascertained by special census, and 1,241 representing the shipping population, the total may be stated at 806,801, which is 3,714 in excess of last year's estimate on a similar basis.

This represents an increase of only ·4 per cent., as against 1·4 assumed by the Registrar-General to have taken place.

And when considered along with the ascertainable sources of increase it indicates that considerably more than one-half of the natural increase of the population during the year has been lost through emigration, whether to other industrial centres or simply outwards beyond the boundary.

The relation between the natural increase and those estimated by the Registrar-General and the Medical Officer respectively is shown in the following statement:—

	Registrar-General's Estimate.	Medical Officer's Estimate.	Natural Increase added to Registrar-General's 1906 Estimate.
Population, 1906, ...	835,625	803,187	...
„ 1907, ...	847,584	806,801	844,744
Increase, ...	11,959	3,614	9,119
Percentage Increase, ...	1·4	0·4	1·1

The number of births during 1907, as corrected, was 23,926, and the corrected deaths 14,807. This shows a difference of 9,119, which, under other circumstances, would have been retained by the population, instead of which, however, according to the estimate based on the number of houses inhabited, the population has only been increased by 3,614; and 5,505 which should have been added from natural sources alone, were lost.

Institutional Population.—The institutional population, as ascertained by special census, was found to be 21,179, as compared with 20,324 in 1906, and 19,071 in 1905. An analysis of the figures for 1907 reveals the fact that of the increase 38·6 per cent. occurs in model lodging-houses.

Kinning Park.—The number of houses in Kinning Park was 2,760, a decrease of 38 from the corresponding figure for 1906; while the estimate of the population is 13,367, or a decrease of 184.

Dean of Guild Linings.—Through the courtesy of the Master of Works I am able to compare the number of houses for which linings were granted by the Dean of Guild in the year ending 31st August, 1907.

The total number of houses for which linings were granted during the year equals about one-half only of the number for which linings were granted in 1906. In houses of three apartments only is the number greater.

COMPARATIVE TABLE OF LININGS GRANTED BY DEAN OF GUILD COURT FOR THE YEARS ENDING 31ST AUGUST, 1906 AND 1907.

DISTRICTS.	No. of Apartments.												Totals.	
	1.		2.		3.		4.		5.		6.			
	1906.	1907.	1906.	1907.	1906.	1907.	1906.	1907.	1906.	1907.	1906.	1907.	1906.	1907.
Central, ...	9	...	6	9	...	...	...	...	...	...	...	...	15	9
Western, ...	...	...	180	21	36	20	26	...	...	...	...	...	242	41
Eastern, ...	221	102	675	212	90	85	15	...	3	...	1	1	1,005	400
Southern, ...	48	49	98	124	12	27	...	1	...	...	...	...	158	201
Northern, ...	...	...	...	...	22	...	3	...	...	...	12	...	37	...
St. Rollox, ...	156	44	421	155	40	1	...	2	...	...	4	...	621	202
Queen's Park,	...	...	73	89	118	170	67	18	6	38	54	41	318	356
Maryhill, ...	71	...	230	...	50	137	12	47	48	26	56	23	467	233
	505	195	1,683	610	368	440	123	68	57	64	127	65	2,863	1,442

It is of interest, in connection with the number of houses now occupied, to compare the number built under the various Police Acts, which have been in operation since 1866, and of which the following is a summary:—

GLASGOW—NUMBER OF DWELLING-HOUSES FOR WHICH AUTHORITY HAS BEEN GRANTED BY THE DEAN OF GUILD COURT FROM 1866 TO 1907.

	1 Apartment.	2 Apartments.	3 Apartments.	4 Apartments.	5 Apartments.	6 Apartments.	Total.
	19,995	54,311	21,926	5,799	2,509	2,901	107,441
				11,209			
Deduct houses erected by City Improvements Trust, ...	570	1,281	257	16			2,124
Balance by private enterprise, ...	19,425	53,030	21,669	11,193			105,317

107,441 houses, or a number almost equivalent to two-thirds of the number now occupied, have been erected under the increasing restrictions which the Police Acts and the subsequent Building Regulations Acts have imposed. Of the number given above, 2,124 were erected by the City Improvements Trust.

The changes in houses and in estimated populations which have taken place in the several Wards during the year may be followed more closely in the following Table:—

TABLE B.

GLASGOW, 1907.—INHABITED HOUSES AS PER ASSESSOR'S RETURN, AND ESTIMATE OF POPULATION FOR EACH MUNICIPAL WARD.

MUNICIPAL WARDS.	INHABITED HOUSES.				POPULATION.			
	1906.	1907.	Decrease.	Increase.	1906.	1907.	Decrease.	Increase.
1. Dalmarnock, -	11,027	10,936	91	...	49,987	49,577	410	...
2. Calton, - -	7,896	7,789	107	...	36,060	35,570	490	...
3. Mile-end, - -	9,799	10,124	...	325	44,669	46,154	...	1,485
4. Whitevale,- -	6,942	6,864	78	...	32,789	32,421	368	...
5. Dennistoun, -	7,929	8,095	...	166	36,153	36,915	...	762
6. Springburn, -	9,075	9,453	...	378	43,274	45,079	...	1,805
7. Cowlairs, - -	6,375	6,252	123	...	31,170	30,570	600	...
8. Townhead, - -	8,100	7,982	118	...	38,260	37,701	559	...
9. Blackfriars, -	4,479	4,429	50	...	21,817	21,576	241	...
10. Exchange, - -	384	376	8	...	2,079	2,035	44	...
11. Blythswood, -	600	597	3	...	3,279	3,263	16	...
12. Broomielaw, -	1,444	1,430	14	...	7,556	7,482	74	...
13. Anderston, -	6,108	6,150	...	42	28,788	28,990	...	202
14. Sandyford, - -	5,241	5,237	4	...	25,026	25,008	18	...
15. Park, - -	5,071	5,020	51	...	24,870	24,623	247	...
16. Cowcaddens, -	7,776	7,557	219	...	36,458	35,435	1,023	...
17. Woodside, - -	9,506	9,501	5	...	43,454	43,433	21	...
18. Hutchesontown, -	8,918	8,809	109	...	39,932	39,449	483	...
19. Gorbals, - -	7,382	7,247	135	...	35,876	35,221	655	...
20. Kingston, - -	7,233	7,132	101	...	34,401	33,919	482	...
21. Govanhill, - -	7,463	7,614	...	151	33,985	34,675	...	690
22. Langside, - -	8,498	8,970	...	472	38,801	40,953	...	2,152
23. Pollokshields, -	3,454	3,602	...	148	17,765	18,529	...	764
24. Kelvinside, -	4,229	4,356	...	127	21,788	22,444	...	656
25. Maryhill, - -	8,579	8,612	...	33	39,834	39,992	...	158
Institutions, -	...	...	...	...	20,324	21,179	...	855
Shipping, - -	...	...	...	...	1,241	1,241	...	...
	163,508	164,134	...	626	789,636	793,434	...	3,798
26. Kinning Park, -	2,798	2,760	38	...	13,551	13,367	184	...
CITY, - -	166,306	166,894	...	588	803,187	806,801	...	3,614

Unoccupied Houses.

Through the courtesy of the City Assessor, I am able to include a statement of the houses which were found unoccupied at 1st June, 1907:—

TABLE C.

Number of Unoccupied Houses in the several Municipal Wards, classified according to size, as at 1st June, 1907.

Municipal Wards.	1 Apartment.	2 Apartments.	3 Apartments.	4 Apartments.	5 Apartments.	Total.
1. Dalmarnock, ...	446	763	33	2	2	1,246
2. Calton, ...	192	291	51	29	23	586
3. Mile-end, ...	336	595	92	7	...	1,030
4. Whitevale, ...	191	448	105	18	8	770
5. Dennistoun, ...	58	245	157	51	36	547
6. Springburn, ...	429	600	66	4	1	1,100
7. Cowlairs, ...	214	389	51	8	1	663
8. Townhead, ...	86	394	110	49	31	670
9. Blackfriars, ...	83	132	67	23	11	316
10. Exchange, ...	4	9	9	4	2	28
11. Blythswood, ...	...	7	4	13	12	36
12. Broomielaw, ...	11	54	30	10	2	107
13. Anderston, ...	33	146	87	21	38	325
14. Sandyford, ...	81	73	73	27	59	313
15. Park, ...	8	27	27	89	133	284
16. Cowcaddens, ...	384	521	149	26	16	1,096
17. Woodside, ...	170	382	110	21	51	734
18. Hutchesontown, ...	190	463	70	5	2	730
19. Gorbals, ...	64	155	241	63	72	595
20. Kingston, ...	84	208	199	55	14	560
21. Govanhill, ...	63	407	253	18	5	746
22. Langside, ...	...	57	261	201	153	672
23. Pollokshields, ...	2	6	18	56	112	194
24. Kelvinside, ...	2	7	66	44	207	326
25. Maryhill, ...	217	685	164	64	89	1,219
26. Kinning Park, ...	43	91	31	8	8	181
City, ...	3,391	7,155	2,524	916	1,088	15,074

The acreage, number of inhabited houses, and estimated population in each of the wards, with the increase or decrease, compared with the Census year, is contained in the following Table I.:—

TABLE I.—ACREAGE, INHABITED HOUSES, and PERSONS per ACRE in each MUNICIPAL WARD in 1907; also the POPULATION and PERSONS per ACRE at the CENSUS of 1901, and the PERCENTAGE INCREASE or DECREASE in the POPULATION during the Intervening Period.

MUNICIPAL WARDS.	Acreage, 1907.	Inhabited Houses, 1907.	POPULATION.						Persons per Acre (including Institutions and Shipping).	
			Census 1901.	Estimated, Middle of 1907.	Increase.	Decrease.	Per Cent. Increase.	Per Cent. Decrease.	Census 1901.	1907.
1. Dalmarnock, ...	562	10,936	49,210	49,577	367	...	·7	...	89	90
2. Calton, ...	337	7,789	39,045	35,570	...	3,475	...	9·8	123	111
3. Mile-end, ...	512	10,124	42,110	46,154	4,044	...	8·8	...	83	91
4. Whitevale, ...	321	6,864	33,897	32,421	...	1,476	...	4·6	111	104
5. Dennistoun, ...	718	8,095	30,482	36,915	6,433	...	17·4	...	45	54
6. Springburn, ...	1,531	9,453	37,744	45,079	7,335	...	16·3	...	26	32
7. Cowlairs, ...	865	6,252	26,597	30,570	3,973	...	13·0	...	31	35
8. Townhead, ...	261	7,982	40,492	37,701	...	2,791	...	7·4	163	145
9. Blackfriars, ...	146	4,429	24,333	21,576	...	2,757	...	6·8	173	154
10. Exchange, ...	123	376	2,326	2,035	...	291	...	14·2	23	20
11. Blythswood, ...	90	597	4,101	3,263	...	838	...	25·7	48	40
12. Broomielaw, ...	104	1,430	9,633	7,482	...	2,151	...	28·7	102	88
13. Anderston, ...	462	6,150	29,934	28,990	...	944	...	3·3	68	66
14. Sandyford, ...	138	5,237	26,449	25,008	...	1,441	...	5·8	192	184
15. Park, ...	346	5,020	24,903	24,623	...	280	...	1·1	74	74
16. Cowcaddens, ...	173	7,557	40,380	35,435	...	4,945	...	14·0	239	212
17. Woodside, ...	283	9,501	45,447	43,433	...	2,014	...	4·6	161	154
18. Hutchesontown, ...	224	8,809	42,284	39,449	...	2,835	...	7·2	189	176
19. Gorbals, ...	243	7,247	35,750	35,221	...	529	...	1·5	151	148
20. Kingston, ...	412	7,132	34,386	33,919	...	467	...	1·4	85	84
21. Govanhill, ...	449	7,614	31,639	34,675	3,036	...	8·8	...	70	77
22. Langside, ...	840	8,970	25,337	40,953	15,616	...	38·1	...	31	49
23. Pollokshields, ...	1,353	3,602	15,317	18,529	3,212	...	17·3	...	11	14
24. Kelvinside, ...	917	4,356	15,611	22,444	6,833	...	30·4	...	18	25
25. Maryhill, ...	1,278	8,612	33,717	39,992	6,285	...	15·7	...	28	32
26. Kinning Park, ...	108	2,760	...	13,367	...	...	...	...	...	64
— Institutions and Shipping, ...	...	...	20,588	22,420	1,832	...	...	...	...	...
CITY, ...	12,796	166,894	761,712	806,801	45,089	...	5·6	...	60·1	63·1

MARRIAGES.

In 1907 there were 7,501 marriages registered in Glasgow, as compared with 7,630 in 1906. These represent rates per thousand persons living of 8·8 and 9·1 respectively.

For a series of years the marriage-rate per 100,000 living has been as follows:—

1870, ...	980*	1891-95, ...	895
1871-75, ...	992	1896-1900, ...	989
1876-80, ...	901	1901-06, ...	909
1881-85, ...	937	1907, ...	885
1886-90, ...	884		

The practice of stating the marriage-rate in relation to the total number of persons living is not without error, and in particular it fails to reflect accurately the true rate of decrease when this is accompanied by a shrinking of the proportion of the population under or over the usual marriage ages. This shrinking is, we know, in fact occurring in the earlier years of life, and in the following Table, which is constructed on lines similar to that contained in the Report of the Registrar-General for England for 1903, page vi., it is shown that when the marriage-rate is calculated on the population at all ages a decrease of 8·8 per cent. only is shown during the last thirty-seven years; whereas when it is calculated on the unmarried and widowed population over 15 years of age the reduction actually amounts to 14 per cent.:—

GLASGOW.—MEAN ANNUAL MARRIAGE-RATES.

	Calculated on Total Population at All Ages.		Calculated on the Unmarried Females and Widows aged 15 years and upwards.	
	Rate per 1,000.	Compared with Rate in 1870-72, taken as 100.	Rate per 1,000.	Compared with Rate in 1870-72, taken as 100.
1870-72	10·0	100	54·7	100
1880-82	8·8	88	50·7	93
1890-92	9·5	95	46·5	85
1900-02	9·6	96	50·9	93
1907	8·8	88	47·0	86

* From the Registrar-General's Annual Reports.

BIRTHS.

24,006 births were registered in Glasgow during the year 1907, and after deducting those born within the municipal area not belonging to Glasgow, and adding those born beyond the municipal area but belonging to Glasgow, there remain 23,926 births properly belonging to the City. This represents a birth-rate of 29·655 per 1,000 persons living, calculated on the Medical Officer's estimate of the population, as compared with 24,395 births, representing a birth-rate of 30·373 in 1906. The birth-rate is the lowest recorded, and represents a fall in the rate equal to 718 per million compared with 1906.

As with the marriage-rate so it is with the birth-rate when calculated over the total population, and a correction similar to that adopted in calculating the former is here introduced, save that the amended birth-rates are calculated on

the number of females living between the ages of 15 and 45 years. Again there is illustration that the decrease shown in calculating the birth-rate over the whole population falls short of that which is actually occurring, and that although it is now 31 per cent. below the average for 1870-72, when calculated on the whole population, the actual reduction amounts to 34 per cent. when calculated on the number of women at child-bearing ages.

GLASGOW.—MEAN ANNUAL BIRTH-RATE.

	Calculated as a proportion per 1,000 on Total Population at All Ages		Calculated as a proportion per 1,000 on the Number of Women aged 15-45 years.	
	Rate per 1,000.	Compared with Rate in 1870-72, taken as 100.	Rate per 1,000.	Compared with Rate in 1870-72, taken as 100.
1870-72	40·9	100	173·5	100
1880-82	35·9	88	150·7	86
1890-92	35·2	86	125·6	72
1900-02	32·1	79	124·2	72
1907	28·3	69	114·8	66

Returning to the usual method of stating these rates we have the following for several periods since 1871:—*

	Glasgow.	Scotland.
1871-80, ...	36·6	34·9
1881-90, ...	36·5	32·4
1891-95, ...	33·9	30·7
1896-1900, ...	33·1	30·0
1901-1905, ...	31·3	28·9
1906, ...	29·4	27·9
1907, ...	28·3	27·0

During the decade 1897-1906, and in 1907, the rates for the following large towns have been as follows:—*

	1897-1906.	1907.
Glasgow, ...	**31·9**	**28·3**
Edinburgh, ...	25·3	21·7
Dundee, ...	28·6	27·4
Aberdeen, ...	31·1	25·8
London, ...	28·5	25·6
Liverpool, ...	34·2	31·8
Manchester, ...	31·5	28·7
Birmingham, ...	32·0	28·3

While the birth-rate for Glasgow exceeds that of the other large towns in Scotland, it is continuously lower than that of Liverpool, a difference which would probably be explained by a comparison of the age distribution of the two populations.

In the following Table the number of births and the rate in each ward is stated, together with the corresponding rates for several former years:—

* The rates in these Tables are taken from the Registrar-General's Annual Reports.

TABLE II.

GLASGOW, 1907.—BIRTHS and BIRTH-RATES *per Million* in each WARD, exclusive of Institutions and Harbour, with corresponding Rates for 1903-06.

MUNICIPAL WARDS.	1903.	1904.	1905.	1906.	1907.	
	Rate per Million.	Rate per Million.	Rate per Million.	Rate per Million.	Number.	Rate per Million.
1. Dalmarnock, ...	40,956	40,627	40,722	38,350	1,973	39,795
2. Calton, ...	32,828	32,634	34,625	34,387	1,124	31,599
3. Mile-end, ...	41,325	40,341	40,977	39,871	1,841	39,887
4. Whitevale, ...	32,506	33,789	32,302	32,389	1,090	33,620
5. Dennistoun, ...	29,192	29,783	29,303	26,803	987	26,737
6. Springburn, ...	41,852	41,666	40,386	39,701	1,775	39,375
7. Cowlairs, ...	35,526	37,017	36,329	34,424	1,003	32,809
8. Townhead, ...	32,734	31,940	30,909	32,462	1,177	31,219
9. Blackfriars, ...	33,135	32,580	31,733	32,268	638	29,569
10. Exchange, ...	22,401	20,107	17,005	23,088	31	15,233
11. Blythswood, ...	9,455	11,478	9,612	9,149	38	11,646
12. Broomielaw, ...	31,906	30,404	29,770	28,851	234	31,275
13. Anderston, ...	34,734	33,456	32,074	33,208	940	32,425
14. Sandyford, ...	25,559	22,356	24,817	23,935	568	22,713
15. Park, ...	13,345	11,815	11,032	11,580	264	10,722
16. Cowcaddens, ...	35,110	34,641	31,866	33,271	1,101	31,071
17. Woodside, ...	33,579	32,644	29,973	30,078	1,269	29,217
18. Hutchesontown,	40,358	39,598	37,863	39,843	1,467	37,187
19. Gorbals, ...	27,890	29,429	28,746	30,104	923	26,206
20. Kingston, ...	30,436	29,579	30,839	28,458	984	29,010
21. Govanhill, ...	35,339	38,011	35,634	31,514	1,223	35,270
22. Langside, ...	21,637	19,963	20,013	21,907	831	20,291
23. Pollokshields, ...	11,069	10,715	9,808	8,500	152	8,203
24. Kelvinside, ...	11,563	12,067	12,593	11,474	275	12,253
25. Maryhill, ...	42,821	38,600	40,080	37,029	1,509	37,733
26. Kinning Park, ...	...	...	...	38,078	448	33,515
— Institutions and Harbour, ...	...	...	...	...	61	...
CITY, ...	32,042	31,463	30,778	30,373	23,926	29,655

In the several wards of the City the birth-rate varies greatly, being much above the average in Dalmarnock, Mile-end, Springburn, Hutchesontown, Govanhill, Maryhill, and Kinning Park.

DEATHS—ALL CAUSES.

15,659 deaths from all causes were registered in Glasgow during the year 1907.

These are subject to correction for deaths occurring in institutions and for extra-mural deaths, as follows:—

From all deaths registered as occurring within the City, ...	15,659
Deduct deaths occurring in Glasgow, chiefly in Institutions, of persons whose usual residence was beyond the City boundary,	1,040
	14,619
Add deaths of Glasgow citizens, chiefly in Govan Poorhouse, ...	188
Deaths properly belonging to Glasgow, ...	14,807

On the Medical Officer's estimate of the population, this represents a death-rate of 18·4 per thousand living. This is almost one per thousand in excess of the rate for 1906. In that year the rate similarly calculated was 17·6 per thousand, and the difference is equivalent to an increase of 777 deaths per million living.

On the Registrar-General's estimate of population and uncorrected deaths, the death-rate is 17·4 per thousand, as compared with 17·8 for 1906.

For several periods the death-rate from all causes, calculated on the inhabited-house estimate of the population and on the deaths corrected, has been as follows:—

GLASGOW.—ALL CAUSES—DEATH-RATE PER 1,000 LIVING.

1881-1890, ...	24·22
1891-1900, ...	21·53
1901, ...	20·63
1902, ...	19·38
1903, ...	18·52
1904, ...	18·84
1905, ...	17·52
1906, ...	17·58
1907, ...	18·35

In order to compare these rates with those of other towns, we must revert to the deaths as registered and to the Registrar-General's estimate of the population, and in the following Table the rates are given for several of the large towns in England and Scotland:—

GLASGOW AND SEVERAL TOWNS—DEATH-RATE PER 1,000 LIVING.

	1897-1906.		1907.
Glasgow, ...	**20·1**	...	**18·5**
Edinburgh, ...	18·1	...	16·2
Dundee, ...	20·0	...	19·1
Aberdeen, ...	17·5	...	14·3
London, ...	17·4	...	14·6
Liverpool, ...	22·9	...	19·0
Manchester, ...	21·4	...	18·1
Birmingham, ...	19·4	...	16·2

Among towns in Scotland the rate for Glasgow is exceeded by that for Dundee, and among towns in England by those for Liverpool and Manchester.

CORRECTED DEATH-RATES.

In a former annual Report a comparison was instituted between the death-rates of several towns in England and Scotland, after having been corrected for the variations of the sex and age constitution of their respective populations, the rates therein being arrived at by assuming in the calculation that the age and sex distribution of the towns compared was identical with that of the country in which they are situated. In the following table for 1907 this has again been done, fuller details and a comparative mortality figure with England and Scotland respectively being added.

Towns in order of Corrected Death-rate.	Standard Death-rate.	Factor for Correction for Sex and Age Distribution.	Crude Death-rate, 1907.	Corrected Death-rate, 1907.	Comparative Mortality Figure, 1907.
London, ...	17·31	1·0511	14·60	15·35	1,023
Leeds, ...	16·68	1·0908	15·29	16·68	1,112
Edinburgh, ...	17·50	1·0417	16·2	16·88	1,042
Birmingham, ...	16·91	1·0759	16·18	17·41	1,161
Sheffield, ...	16·88	1·0778	17·06	18·39	1,226
Manchester, ...	16·32	1·1148	18·07	20·14	1,343
Liverpool, ...	17·00	1·0702	19·00	20·33	1,355
Glasgow, ...	16·46	1·1075	18·5	20·49	1,265

WARD DEATH-RATES.

In Table III. which follows, the deaths and death-rates for each of the several Wards are given for 1907, and, for comparison, the corresponding rates for the four years preceding:—

TABLE III.

GLASGOW, 1907.—ALL CAUSES—DEATHS and DEATH-RATES *per Million* in each MUNICIPAL WARD, with corresponding rates for 1903, 1904, 1905, and 1906.

MUNICIPAL WARDS.	1903.	1904.	1905.	1906.	1907.	
	Rate per Million.	Rate per Million.	Rate per Million.	Rate per Million.	Deaths.	Rate per Million.
1. Dalmarnock, ...	19,249	20,096	19,916	19,205	1,141	23,014
2. Calton, ...	22,844	23,626	20,905	21,631	887	24,936
3. Mile-end, ...	23,233	21,931	20,096	19,768	1,032	22,359
4. Whitevale, ...	19,184	20,340	19,375	18,421	649	20,018
5. Dennistoun, ...	13,258	13,519	11,778	12,779	477	12,921
6. Springburn, ...	18,665	18,918	17,413	17,401	842	18,678
7. Cowlairs, ...	15,312	16,778	15,547	15,335	456	14,916
8. Townhead, ...	18,405	18,575	18,478	18,400	730	19,363
9. Blackfriars, ...	22,524	21,913	20,658	19,893	504	23,359
10. Exchange, ...	18,369	17,426	18,422	14,430	36	17,690
11. Blythswood, ...	13,626	16,643	11,415	8,234	44	13,485
12. Broomielaw, ...	27,588	20,517	22,004	21,175	198	26,463
13. Anderston, ...	18,470	19,387	18,318	18,515	539	18,593
14. Sandyford, ...	15,478	16,805	17,454	19,020	471	18,834
15. Park, ...	10,940	10,784	10,473	11,259	264	10,722
16. Cowcaddens, ...	23,949	24,744	21,422	21,861	755	21,307
17. Woodside, ...	15,179	15,912	14,296	16,638	663	15,265
18. Hutchesontown,	19,512	22,669	19,882	18,882	746	18,910
19. Gorbals, ...	18,966	18,051	16,965	15,860	621	17,631
20. Kingston, ...	18,727	17,850	17,474	17,412	644	18,986
21. Govanhill, ...	13,999	15,996	13,714	15,183	522	15,054
22. Langside, ...	10,363	9,614	8,688	9,330	392	9,572
23. Pollokshields, ...	9,656	8,741	8,575	8,500	182	9,822
24. Kelvinside, ...	8,009	7,090	7,120	7,252	162	7,218
25. Maryhill, ...	14,951	15,919	14,318	14,435	534	13,352
26. Kinning Park, ...	...	...	...	18,154	241	18,029
— Institutions and Harbour, ...	...	...	...	...	1,075	...
CITY, ...	18,524	18,835	17,517	17,576	14,807	18,353

On the average rates for these five years it is now possible, with some degree of accuracy, to grade the Wards in relation to the mean for the City, and I select for illustration eight in which the rate is *continuously* in excess. These are as follows:—

Ward.	Average Death-rate per 1,000. 1903-07.	Ward.	Average Death-rate per 1,000. 1903-07.
Broomielaw, ...	23·5	Mile-end, ...	21·5
Calton, ...	22·8	Dalmarnock, ...	20·3
Cowcaddens, ...	22·7	Hutchesontown, ...	20·0
Blackfriars, ...	21·7	Whitevale, ...	19·5
	City, =	18·2	

As indicated in former Reports, some division of the Wards for statistical purposes will ultimately be required, in order that the true density of small areas, together with other factors expressing unhealthiness, may be more accurately defined.

Within the area of Broomielaw Ward is included the old Sanitary District of Brownfield and a portion of Anderston. Calton includes much of the old district of that name, while Cowcaddens includes the whole of the sanitary area formerly known by the same name. Within Blackfriars Ward is included the old No. 14 District (Bridgegate and Wynds), as well as a portion of the old Gorbals District. Similarly, Mile-End and Dalmarnock contain the old Barrowfield District, and Hutchesontown and Whitevale contain, respectively, portions of the old Hutchesontown Square District and of High Street and Closes (East).

As illustrating the differences which exist in the death-rates of selected areas as compared with Wards as a whole, it is of interest to continue the record of the deaths in the old Sanitary Districts of Brownfield and Cowcaddens. The figures in the annexed statement include the population and deaths occurring in institutions and shipping.

BROWNFIELD AND COWCADDENS.

NUMBER OF INHABITED HOUSES, ESTIMATED POPULATION, DEATHS, AND DEATH-RATES IN OLD SANITARY DISTRICTS OF BROWNFIELD AND COWCADDENS, NOS. 13 AND 16.

DISTRICT.		Number of Houses.	Persons per House at Census, 1901.	Population, including Institutions.	Number of Deaths.	Death-rate per 1,000.
Brownfield,	1901	696	5·218	3,924	144	40·4
	1902	670	...	3,768	112	32·5
	1903	596	...	3,321	103	33·6
	1904	553	...	3,237	67	20·7
	1905	543	...	3,179	66	20·8
	1906	537	...	3,102	80	25·8
	1907	537	...	3,125	95	30·4
Cowcaddens,	1901	3,651	4·568	18,206	586	33·4
	1902	3,969	...	18,824	499	27·9
	1903	3,878	...	18,589	533	28·7
	1904	3,717	...	18,129	521	29·2
	1905	3,591	...	17,536	410	23·4
	1906	3,435	...	16,351	450	27·5
	1907	3,418	...	16,600	460	27·7

The increase in the number of deaths in Brownfield area is due to the increased fatality from cerebro-spinal fever, whooping-cough, and pneumonia; while in the Cowcaddens area it is due principally to the increased fatality from whooping-cough.

The increase in the population in both areas is in the model lodging-houses.

GLASGOW, 1907.—INSTITUTIONAL DEATHS (INTRA-MURAL).—SUMMARY.

CAUSE OF DEATH.	Poorhouses.	Lodging-houses.	Infirmaries, Hospitals, &c.	Homes for Old Men and Women and Orphans, Barracks, Prison, and Harbour.	Total.
Diphtheria, ...	...	1	...	...	1
Cerebro-Spinal Fever, ...	...	7	1	...	8
Enteric Fever, ...	...	3	5	...	8
Typhus Fever, ...	...	1	...	...	1
Measles, ...	...	1	...	...	1
Whooping-cough, ...	...	4	...	1	5
Diarrhœa, ...	12	...	2	1	15
Septic Diseases, ...	2	3	2	2	9
Phthisis, ...	144	37	31	4	216
Other Tuberculous Diseases,	28	3	5	3	39
Cancer, ...	19	7	8	2	36
Nervous Diseases, ...	65	14	17	8	104
Circulatory Diseases, ...	116	27	14	18	175
Respiratory Diseases, ...	108	52	37	24	221
Violence, ...	2	17	6	22	47
Premature Birth, ...	3	...	1	...	4
Unknown, ...	...	7	...	3	10
Others, ...	94	25	25	31	175
	593	209	154	119	1,075
Per cent., ...	55·2	19·4	14·3	11·1	100

GLASGOW, 1907.—INSTITUTIONAL DEATHS (INTRA-MURAL).—SHOWING CAUSES and AGES.

CAUSE OF DEATH.	AGES.								Total.
	-1	-5	-15	-20	-25	-60	60+	Not Stated.	
Diphtheria, ...	...	1	...	...	...	...	...	...	1
Cerebro-Spinal Fever, ...	...	...	1	2	...	5	...	...	8
Enteric Fever, ...	...	...	...	1	3	4	...	...	8
Typhus Fever, ...	...	...	...	...	...	1	...	...	1
Measles, ...	1	...	...	...	...	...	...	...	1
Whooping-cough, ...	2	3	...	...	...	...	...	...	5
Diarrhœa, ...	8	5	...	...	...	1	1	...	15
Septic Diseases, ...	1	...	...	...	...	3	5	...	9
Phthisis, ...	1	2	4	10	17	156	26	...	216
Other Tuberculous Diseases,	7	12	8	3	...	6	3	...	39
Cancer, ...	...	...	...	...	...	13	23	...	36
Nervous Diseases, ...	2	1	3	1	...	43	54	...	104
Circulatory Diseases, ...	1	...	...	...	...	51	123	...	175
Respiratory Diseases, ...	3	12	1	2	3	86	114	...	221
Violence, ...	...	...	...	...	...	37	8	2	47
Premature Births, ...	4	...	...	...	...	...	...	...	4
Unknown, ...	...	...	...	...	...	7	3	...	10
Others, ...	14	1	1	2	3	60	94	...	175
	44	37	18	21	26	473	454	2	1,075
Per thousand Institutional Deaths, ...	41	34	17	20	24	440	422	2	1,000

DEATH OF NON-RESIDENTS.

In previous Reports I have explained the basis on which the number of deaths as corrected is arrived at. Deaths of all persons in public and other institutions for the treatment of the sick are referred to their place of usual residence. When this is outwith the City the death is excluded; and, *per contra*, the calculation includes certain deaths in Govan Poorhouse, when the interval between removal and death implies that a fatal issue followed the illness for the treatment of which removal had taken place.

Occasion was taken to refer to this question in the Reports for 1905 and 1906, and the desirability of a national system of transcripts under the Registrar-General's Department was pointed out.

The whole subject has been under review by the Scottish Branch of the Society of Medical Officers of Health, and a conference with the Local Government Board was followed by the issue of a circular by them in the following terms:—

"Local Government Board,
"Edinburgh, 8th April, 1908.

"Towards the close of last year a conference was held between the Board and a representative number of Medical Officers of Health, and the Board have now determined as follows:—

"(A) Transference of Non-Local Deaths.

"The procedure in transferring non-local deaths for the purposes of the Board's statistics shall be as follows:—

"(1) That the Medical Officer of the public health area in which a death occurs shall, within a fortnight after the end of the quarters to 31st March, 30th June, 30th September, and 31st December, intimate on the form prescribed by the Board particulars of the death to the Medical Officer of Health of the county, district, or burgh to which it appears to him the death should be transferred.

"(2) That, on receiving such an intimation, a Medical Officer of Health shall acknowledge the same, and accept the death, or, in the case of non-acceptance, make further inquiries. In cases of dispute, the matter shall be referred forthwith to the Local Government Board for final decision—a full statement of the facts, signed by both Medical Officers of Health concerned, being forwarded to that department.

"(3) That a Medical Officer of Health of the public health district in which a death occurs shall retain each such death until it has been accepted by another Medical Officer of Health, or, in case of dispute, until the matter has been decided by the Local Government Board.

"(4) All non-local deaths in institutions receiving persons on account of disease or infirmity, viz.:—poorhouses, lunatic asylums, hospitals and nursing homes, shall be transferred; and, where the Medical Officers of Health of the two Local Authorities concerned agree, any non-institutional death may also be transferred. Every death from accident shall be transferred, and also every death of a vagrant who can be traced to his own home or usual place of residence.

"(5) The Board have directed inspectors of poor, when sending a pauper to a poorhouse, lunatic asylum, or infirmary, to state whether the usual place of residence is in the burghal or landward area of the parish from which he is being sent."

One of the objects of the scheme of transference thus indicated is to equalise the sum of the deaths returned by Medical Officers of Health with those recorded by the Registrar-General. But while the total number of deaths, and in consequence the death-rate for Scotland as a whole, will be uniform, there will result in the case of each public health area a local estimate of the rate, which will in many cases diverge from that of the Registrar-General, to the extent of the transferences which take place. Moreover, deaths will now be transferred without the institutional populations among which they occur, and, as is indicated in the following Table, without any information as to the period which has elapsed since the deceased person was resident in the place to which his death is transferred. The argument advanced by the rural districts against the inclusion within their rate of deaths occurring among persons removed from neighbouring cities to poorhouses and asylums within their area is quite reasonable. But to transfer these *simpliciter* to their place of former residence without qualifications of time since removal or duration of illness is not without objection of a contrary nature. Deaths from infectious disease are obvious illustrations, and the argument they supply is the more cogent if we include phthisis. Whatever view we adopt as to the relationship between tubercle and mental defect, the fact that phthisis prevails in asylums for the insane is undoubted.

One object of registering the causes of death is that in some way these may be made to reflect the physical conditions under which they arise. But the elements of such a comparison are awanting, or at the best obscure, when years intervene between the removal of the persons from the surroundings to which his death is referred and its occurrence in an asylum elsewhere.

Most of these transferred deaths occur in institutions for the poor or insane, and an institutional death-rate would have many advantages. It would also tend to lessen the demand on the time of a clerical staff which the present system entails.

Certain details of these extra-mural deaths transferred by voluntary arrangement during 1907 are contained in the two Tables which follow. It will be noted that in 302 of the 414 therein analysed no information regarding the length of residence outwith the City is available:—

GLASGOW, 1907.—DEATHS OF PERSONS FORMERLY RESIDENT IN GLASGOW OCCURRING IN PUBLIC INSTITUTIONS (excluding Merryflats Poorhouse) AND ELSEWHERE BEYOND THE BURGH, TABULATED ACCORDING TO PREVIOUS GLASGOW ADDRESS, WITH DURATION OF RESIDENCE AT PLACE OF DEATH.

MUNICIPAL WARDS OF FORMER ADDRESS.	DURATION OF RESIDENCE AT PLACE OF DEATH.						TOTAL.
	Not Stated.	– 1 Year.	– 5 Years.	– 10 Years.	– 15 Years.	15 Years and Upwards.	
1. Dalmarnock, ...	15	7	1	...	...	...	23
2. Calton, ...	10	5	...	1	1	...	17
3. Mile-end, ...	17	3	...	1	...	...	21
4. Whitevale, ...	9	4	2	...	...	...	15
5. Dennistoun, ...	8	3	...	...	...	...	11
6. Springburn, ...	14	5	4	1	...	...	24
7. Cowlairs, ...	8	2	2	...	...	1	13
8. Townhead, ...	6	3	1	1	...	...	11
9. Blackfriars, ...	13	3	2	1	...	...	19
10. Exchange, ...	3	1	...	...	...	...	4
11. Blythswood, ...	1	...	...	...	...	...	1
12. Broomielaw, ...	5	2	...	...	...	...	7
13. Anderston, ...	15	3	...	1	...	1	20
14. Sandyford, ...	5	...	1	1	...	...	7
15. Park, ...	9	...	...	...	...	...	9
16. Cowcaddens, ...	9	6	...	2	...	...	17
17. Woodside, ...	9	7	...	1	...	...	17
18. Hutchesontown, ...	9	1	..	...	1	...	11
19. Blackfriars, ...	20	2	2	...	...	...	24
20. Kingston, ...	19	...	...	...	...	...	19
21. Govanhill, ...	18	2	...	...	...	...	20
22. Langside, ...	29	1	1	...	...	...	31
23. Pollokshields, ...	6	1	...	...	...	...	7
24. Kelvinside, ...	5	...	...	...	...	...	5
25. Maryhill, ...	9	5	...	...	...	...	14
26. Kinning Park, ...	11	1	...	...	...	..	12
Institutions, ...	7	7	2	...	1	...	17
No Address, ...	13	3	...	...	...	2	18
TOTAL, ...	302	77	18	10	3	4	414

GLASGOW, 1907.—DEATHS OF PERSONS FORMERLY RESIDENT IN GLASGOW OCCURRING IN PUBLIC INSTITUTIONS (Lunatic Asylums, Poorhouses, Hospitals) AND ELSEWHERE BEYOND THE BURGH, BUT EXCLUDING MERRYFLATS POORHOUSE, TABULATED ACCORDING TO DISEASE AND AGE.

AGE.	Whooping-cough.	Diarrhœa.	Puerperal Fever.	Septic Diseases.	Phthisis.	Other Tubercular Diseases.	Cancer, &c.	Diseases of Nervous System.	Diseases of Circulatory System.	Pneumonia.	Influenza.	Diseases of Respiratory System.	Cerebro-Spinal Fever.	Violence.	Others.	TOTAL.
Under 1 year, - - -	1	...	...	...	...	1	...	...	1	...	...	2	...	...	2	7
1—5 years, - -	...	...	...	...	...	3	...	2	1	..	...	2	...	1	1	10
5—15 ,, - -	...	...	...	...	2	4	...	3	...	...	...	...	...	1	1	11
15—25 ,, - -	...	...	...	1	10	1	...	4	3	1	...	1	2	5	2	30
25—60 ,, - -	...	4	1	3	51	3	3	91	19	11	1	7	...	34	23	251
60 and upwards, -	...	1	...	...	2	...	5	23	20	6	...	15	...	4	29	105
Under 5 years, - -	1	...	...	...	...	4	...	2	2	...	...	4	...	1	3	17
5 years and upwards, -	...	5	1	4	65	8	8	121	42	18	1	23	2	44	55	397
Total, - -	1	5	1	4	65	12	8	123	44	18	1	27	2	45	58	414

Deaths occurring in Glasgow of persons whose usual residence was outwith the City.—A new Table is here introduced to show the causes from which these occurred and the age at death:—

GLASGOW, 1907.—DEATHS OF PERSONS NOT BELONGING TO GLASGOW OCCURRING IN PUBLIC INSTITUTIONS AND ELSEWHERE IN GLASGOW, TABULATED ACCORDING TO DISEASE AND AGE.

AGE.	Diphtheria and Membranous Croup.	Enteric Fever.	Measles.	Whooping-cough.	Diarrhœa.	Erysipelas.	Puerperal Fever.	Septic Diseases.	Phthisis.	Other Tubercular Diseases.	Cancer, &c.	Diseases of Nervous System.	Diseases of Circulatory System.	Pneumonia.	Influenza.	Diseases of Respiratory System.	Premature Birth.	Cerebro-Spinal Fever.	Violence.	Others.	TOTAL.
Under 1 year, -	...	...	...	...	3	1	...	2	...	4	...	5	1	7	...	2	4	1	4	19	52
1—5 years, -	1	...	2	3	1	...	...	2	1	9	...	4	1	8	...	2	...	9	16	16	75
5—15 ,, -	...	...	...	3	...	...	...	10	1	11	...	10	3	4	...	1	...	2	17	27	88
15—25 ,, -	...	...	...	...	...	...	...	19	4	9	3	10	7	11	1	3	...	5	20	35	127
25—60 ,, -	...	4	...	...	2	...	3	60	19	12	88	28	66	44	1	16	...	2	81	130	556
60 and upwards,	...	...	...	...	...	...	...	10	1	...	46	8	20	6	2	4	...	1	8	36	142
Under 5 years, -	1	...	2	3	4	1	...	4	1	13	...	8	2	15	...	4	4	10	20	35	127
5 years & upw'ds,	...	4	...	2	2	...	3	99	25	32	137	56	96	65	4	24	...	10	126	228	913
Total, - -	1	4	2	5	6	1	3	103	26	45	137	64	98	80	4	28	4	20	146	263	1,040

COMPARATIVE INCIDENCE OF DEATHS FROM SEVERAL CAUSES.

In the following Table the death-rates from several causes in 1906 and 1907 are compared:—

TABLE IV.

GLASGOW, 1907.—DEATH-RATES per 1,000, from "All" and "Specified" Causes, with corresponding Rates for 1906.

	1906.		1907.		−	+	−	+
I. PRINCIPAL ZYMOTIC DISEASES, ...	...	2·436	...	3·300	...	...	...	·864
Smallpox, ...	...	...	...	...	...	...	...	...
Diphtheria, ...	·169	...	·157	...	·012	...	...	...
Scarlet Fever, ...	·062	...	·056	...	·006	...	...	...
Typhus Fever, ...	·002	...	·002	...	...	...	...	...
Enteric Fever, ...	·102	...	·114	...	...	·012	...	...
Cerebro-Spinal Fever, ...	·178	...	·847	...	...	·669	...	...
Measles, ...	·492	...	·496	...	...	·004	...	...
Whooping-cough, ...	·498	...	1·081	...	...	·583	...	...
Diarrhœa, ...	·933	...	·547	...	·386	...	...	...
II. SEPTIC DISEASES, ...	...	·181	...	·155	...	...	·026	...
III. TUBERCULOUS DISEASES, ...	...	2·648	...	2·593	...	...	·055	...
Phthisis, ...	1·513	...	1·562	...	...	·049	...	...
Other Tuberculous Diseases, ...	1·135	...	1·031	...	·104	...	...	...
IV. CANCER (Malignant Disease), ...	...	·730	...	·750	...	...	...	020
V. DISEASES OF NERVOUS SYSTEM, ...	...	1·551	...	1·549	...	...	·002	...
VI. „ CIRCULATORY SYSTEM,	...	1·727	...	1·629	...	...	·098	...
VII. „ RESPIRATORY „	...	3·365	...	3·610	...	...	...	·245
Pneumonia, ...	1·657	...	1·934	...	...	·277	...	...
Other Respiratory Diseases, ...	1·708	...	1·676	...	·032	...	...	...
VIII. OTHER CAUSES, ...	...	4·938	...	4·767	...	...	·171	...
All Causes, ...	...	17·576	...	18·353	...	...	...	·777
Birth-rate, ...	...	30·372	...	29·655	...	...	...	...
Deaths under 1 year per 1,000 Births,	...	131	...	129	...	...	...	...

In the column of *plus* and *minus* differences the contrast is readily seen. As formerly stated, the increase over all is equal to a rate of 777 per million. The rate from zymotic diseases as a class is higher by 864 per million, and from respiratory diseases (including pneumonia) by 245 per million, while there is a slight increase in Class IV.—Cancer (Malignant Disease). All the other principal classes show a decrease.

Among the sub-groups of the zymotic class a reduction occurred in the rates from diphtheria, scarlet fever, and diarrhœa. There is a slight increase in the rates from enteric fever and measles, but cerebro-spinal fever and whooping-cough show increases respectively of 669 and 583 per million.

In respiratory diseases the rate from pneumonia is increased by 277 per million, while there is a decrease of 32 per million from other diseases included in this class.

NUMBER AND AGE-DISTRIBUTION OF DEATHS IN SEVERAL CLASSES OF DISEASE.

In the following Table V. these are stated for seven age-periods:—

TABLE V.

GLASGOW, 1907.—DEATHS from DIFFERENT DISEASES at several AGE-PERIODS.

DISEASES.	Total, All Ages.	Under 1 Year.	–5 Years.	–15 Years.	–20 Years.	–25 Years.	–60 Years.	60 and Over.	Under 5 Years.	5 Years and Over.
Smallpox, ...	...	...	...	...	...	...	...	...	...	...
Diphtheria and Membranous Croup, ...	127	13	86	27	...	1	...	...	99	28
Scarlet Fever, ...	45	3	30	8	...	...	4	...	33	12
Typhus Fever, ...	2	...	...	...	1	...	1	...	...	2
Enteric Fever, ...	92	...	4	14	15	15	40	4	4	88
Undefined Fever, ...	...	...	...	...	...	...	...	...	...	...
Cerebro-Spinal Fever,	683	111	267	171	43	23	61	7	378	305
Measles, ...	400	101	267	25	1	1	5	...	368	32
Whooping-cough, ...	872	324	522	26	...	...	...	...	846	26
Diarrhœal Diseases,	441	286	93	14	2	2	22	22	379	62
Septic Diseases,* ...	125	20	4	4	3	15	68	11	24	101
Phthisis, ...	1,260	16	43	77	120	136	813	55	59	1,201
Other Tuberculous Diseases, ...	832	177	348	163	38	20	80	6	525	307
Cancer, ...	605	2	2	3	1	6	319	272	4	601
Diseases of Nervous System, ...	1,250	168	93	36	12	10	411	520	261	989
Diseases of Circulatory System, ...	1,314	49	15	25	33	23	579	590	64	1,250
Pneumonia, ...	1,560	368	454	51	18	54	427	188	822	738
Other Respiratory Diseases, ...	1,352	255	171	18	10	...	371	527	426	926
Violence, ...	432	36	54	33	13	13	212	71	90	342
Premature Birth, ...	452	452	...	...	...	...	...	...	452	...
Uncertified (or Unknown), ...	47	20	2	1	...	...	17	7	22	25
Other Causes, ...	2,916	674	167	114	52	66	926	917	841	2,075
All Causes, ...	14,807	3,075	2,622	810	362	385	4,356	3,197	5,697	9,110
Number in 1,000 dying in several Age-Periods,	**1,000**	**208**	**177**	**55**	**24**	**26**	**294**	**216**	**385**	**615**
1906, ...	1,000	225	154	54	27	27	293	220	379	621

* These include Erysipelas, Puerperal Fever, Pyæmia, and Septicæmia.

Of the total deaths occurring, 21 per cent. were of children under 1 year, and 38 per cent. of children under 5 years.

Of 683 deaths from cerebro-spinal fever, 16 per cent. occurred in the first year of life and 55 per cent. within the first 5 years. A fuller analysis of these deaths from cerebro-spinal fever has been made in the section dealing with this disease.

Of 872 deaths from whooping-cough, only 26 were among children over 5 years of age, the proportion under 1 year and under 5 years being 37 and 60 per cent. respectively.

Diseases of the respiratory system still continue one of the most frequent forms of fatal diseases. Deaths from these causes (including pneumonia) number 2,912, while 1,260 are due to phthisis. These together are nearly double the deaths occurring from infectious diseases, and in the Wards in which they are excessive they indicate more accurately the conditions affecting the health of the inhabitants.

INFANTILE MORTALITY.

3,075 deaths of infants under one year occurred during 1907, which represents a death-rate per 1,000 born of 129. This shows a decrease of 2 per 1,000 compared with last year, and is still 1 per 1,000 above the lowest rate formerly recorded (1902). Of these deaths 2,727 were of legitimate and 348 of illegitimate children, representing rates of 122 and 229 respectively per 1,000 births of each class. For several years the rate per 1,000 born of each class has been—

	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
Infantile death-rate of legitimate children,	147	143	145	141	126	132	131	122	122	122
			140					126		
Infantile death-rate of illegitimate children,	302	286	286	269	244	298	342	263	244	229
			277					275		

and for both classes during several periods as follows:—

Average of 5 years, 1886-90, = 143 per 1,000 births.
" 1891-95, = 146 "
" 1896-1900, = 151 "
" 1901-1905, = 139 "
" 1906, = 131 "
" 1907, = 129 "

Compared with several large towns the infantile mortality in 1897-1906 and in 1907 is as follows:—*

	1897-1906.	1907.
Glasgow, ...	**145**	**130**
Edinburgh, ...	137	127
Dundee, ...	166	150
Aberdeen, ...	143	124
Paisley, ...	130	121
Greenock, ...	133	104
London, ...	148	116
Liverpool, ...	180	144
Manchester, ...	182	146
Birmingham, ...	182	147

* The figures for 1897-1905 are from the Registrar-General's Detailed Annual Reports; for 1906-1907 from the Supplement to the Monthly and Quarterly Returns for these years.

Among the principal towns in Scotland the infantile death-rate for Glasgow was exceeded by that of Dundee, and among the English towns by those for Liverpool, Manchester, and Birmingham.

In the several Wards of the City the rate varies considerably, as is shown in the following Table VI.:—

TABLE VI.

GLASGOW, 1907.—DEATHS under ONE YEAR and DEATH-RATE per 1,000 BIRTHS in each MUNICIPAL WARD, with corresponding RATES for 1903-06.

MUNICIPAL WARDS.	Average of 5 years.	Rate per 1,000 Births.				1907.	
		1903.	1904.	1905.	1906.	Deaths.	Rate per 1,000 Births.
1. Dalmarnock, ...	147	140	149	141	142	317	161
2. Calton, ...	169	183	196	149	144	194	173
3. Mile end, ...	149	152	172	124	145	280	152
4. Whitevale, ...	151	146	163	151	144	163	150
5. Dennistoun, ...	94	101	104	76	94	92	93
6. Springburn, ...	134	142	148	129	125	223	126
7. Cowlairs, ...	119	119	122	121	128	107	107
8. Townhead, ...	139	145	126	150	147	149	127
9. Blackfriars, ...	161	183	156	158	142	105	165
10. Exchange, ...	125	140	89	139	63	6	194
11. Blythswood, ...	226	177	375	219	200	6	158
12. Broomielaw, ...	169	199	163	139	142	47	201
13. Anderston, ...	143	132	159	161	140	114	121
14. Sandyford, ...	157	148	136	155	165	102	180
15. Park, ...	85	102	87	83	83	18	68
16. Cowcaddens, ...	172	194	177	176	168	159	144
17. Woodside, ...	121	121	126	123	123	140	110
18. Hutchesontown,	134	130	161	134	133	165	112
19. Gorbals, ...	139	151	151	122	121	139	151
20. Kingston, ...	145	164	139	127	145	149	151
21. Govanhill, ...	107	117	118	99	106	114	93
22. Langside, ...	62	69	87	39	47	57	69
23. Pollokshields, ...	65	117	32	63	60	8	53
24. Kelvinside, ...	62	73	71	81	44	11	40
25. Maryhill, ...	101	106	122	102	101	108	72
26. Kinning Park, ...	...	...	...	...	130	58	129
— Institutions and Shipping, ...	...	...	...	...	...	44	...
CITY, ...	136	142	145	131	131	3,075	129

The average infantile death-rate for the five years for which it is now available for the several Wards has been given in the foregoing Table, and, with a little alteration in the order, the same Wards that are found with death-rates from all causes considerably in excess of the rate for the City again present the highest infantile rates. Blythswood, which was dealt with in this section of the Report for last year, still affords a notable exception.

Wards.	Order of General Death-Rate.	Wards.	Order of Infantile Mortality.
Broomielaw, ...	23·6	Cowcaddens, ...	172
Calton, ...	22·8	Broomielaw, ...	169
Cowcaddens, ...	22·7	Calton, ...	169
Blackfriars, ...	21·7	Blackfriars, ...	161
Mile-end, ...	21·5	Sandyford, ...	157
Dalmarnock, ...	20·3	Whitevale, ...	151
Whitevale, ...	19·5	Mile-end, ...	149
Anderston, ...	18·7	Dalmarnock, ...	147
Kingston,	18·1	Kingston, ...	145
Sandyford, ...	17·5	Anderston, ...	143

This is now the third year in succession in which the infant death-rate has not exceeded 131 per thousand births, and although a further reduction is much to be desired, the present figures afford a hopeful augury of the results which sustained effort may produce. During the past year the climatic conditions were on the whole favourable to infant life (see Relation of Autumn Temperature to Infantile Diarrhœa, page 93), and the mortality from diseases of digestion in infants fell from 28 and 22 per thousand for males and females respectively, to 19 and 18. But, on the other hand, infectious diseases, and particularly whooping-cough, were exceptionally prevalent as compared with 1906, so that the death-rates for this group were 23 and 24 respectively, for the separate sexes, against 12 and 13 in the preceding year. The details of the several causes of death among infants during 1907 are contained in the following Tables:—

GLASGOW, 1907.—MALE INFANT DEATHS at GIVEN AGES and from SEVERAL CAUSES.

CAUSE OF DEATH.	AGE IN WEEKS.					AGE IN MONTHS.											TOTALS.	Group Totals.	Group Percentages.	Death-rate per 1,000 Male Births.
	1st	2nd	3rd	4th	Total.	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th				
I. IMMATURITY, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	516	31·4	42
(a) Premature Birth, ...	191	20	23	9	243	14	4	...	5	...	...	...	...	...	...	...	266	...	...	...
(b) Congenital Malformations, ...	12	3	4	2	21	1	2	...	1	1	...	...	1	...	...	...	27	...	...	...
(c) Atelectasis, ...	7	...	...	2	9	...	...	...	...	...	...	...	...	...	...	...	9	...	...	...
(d) Atrophy and Debility, ...	64	15	22	12	113	37	23	10	9	6	4	...	6	1	2	3	214	...	...	...
II. DISEASES OF RESPIRATORY SYSTEM,	3	7	7	5	22	18	32	30	29	26	24	37	29	33	25	17	...	322	19·6	26
III. DISEASES OF DIGESTIVE SYSTEM,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	236	14·3	19
(a) Diarrhœal, ...	1	4	3	4	12	12	12	25	12	17	12	11	4	6	6	12	141	...	...	...
(b) Dentition, ...	...	...	...	...	...	...	...	...	1	2	2	1	3	...	1	1	11	...	...	...
(c) Others, ...	4	4	5	5	18	8	11	8	8	9	7	3	7	2	2	1	84	...	...	...
IV. DISEASES OF NERVOUS SYSTEM, ...	10	5	6	4	25	15	13	11	7	9	9	8	7	12	9	9	...	134	8·2	11
V. TUBERCULOUS DISEASES, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	77	4·7	6
(a) Tabes Mesenterica, ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2	...	...	...
(b) Tubercular Meningitis, ...	...	...	...	...	...	...	4	3	4	6	7	4	3	4	4	5	44	...	...	...
(c) Other Forms, ...	...	...	1	...	1	1	2	5	1	1	4	2	2	3	3	6	31	...	...	...
VI. ACCIDENTS OF BIRTH, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	0·6	0·8
(a) Injury, ...	7	1	1	...	9	...	...	...	...	...	...	...	...	...	...	...	9	...	...	...
(b) Umbilical Hæmorrhage, ...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
VII. INFECTIOUS DISEASES, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	284	17·3	23
(a) Whooping-cough, ...	...	...	...	3	3	9	7	8	17	12	15	20	19	14	16	18	158	...	...	...
(b) Measles, ...	...	...	...	1	1	...	1	...	1	2	3	6	8	7	7	13	49	...	...	...
(c) Scarlet Fever, ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
(d) Cerebro-Spinal Fever, ...	...	...	...	...	...	...	1	6	7	9	9	6	3	4	9	7	61	...	...	...
(e) Erysipelas, ...	...	1	1	...	2	2	...	...	...	1	...	...	1	...	...	...	6	...	...	...
(f) Diphtheria and Memb. Croup,	..	...	...	1	1	...	...	...	...	1	...	2	...	...	2	3	9	...	...	...
VIII. SYPHILIS, ...	...	1	...	...	1	6	7	3	...	...	1	...	2	...	...	...	...	20	1·2	2
IX. SUFFOCATION, ...	5	1	1	3	10	7	1	...	1	1	...	...	...	...	...	...	...	20	1·2	2
X. OTHER VIOLENCE, ...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	1	...	3	0·2	0·2
XI. ALL OTHER CAUSES, ...	2	3	...	...	5	2	4	2	1	1	1	1	1	2	1	1	...	22	1·3	2
	307	65	74	51	497	132	126	111	105	105	98	101	97	88	87	97	...	1,644	100·0	135

TABLE VIb.

GLASGOW, 1907.—FEMALE INFANT DEATHS at GIVEN AGES and from SEVERAL CAUSES.

CAUSE OF DEATH.	AGE IN WEEKS.					AGE IN MONTHS.											TOTALS.	Group Totals.	Group Percentages.	Death-rate per 1,000 Female Births.
	1st	2nd	3rd	4th	Total.	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th				
I. IMMATURITY, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	439	30·7	37
(a) Premature Birth, ...	134	22	20	12	188	11	6	1	...	...	...	...	...	...	...	...	206	...	...	...
(b) Congenital Malformations, ...	10	4	6	1	21	7	1	...	...	...	...	...	...	1	...	...	30	...	...	...
(c) Atelectasis, ...	13	...	...	...	13	...	...	...	...	...	...	...	...	...	...	...	13	...	...	...
(d) Atrophy and Debility, ...	53	18	10	9	90	31	22	13	15	5	3	3	4	2	1	1	190	...	...	...
II. DISEASES OF RESPIRATORY SYSTEM,	2	7	6	5	20	26	21	19	20	19	16	25	21	23	25	23	...	258	18·3	22
III. DISEASES OF DIGESTIVE SYSTEM,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	213	14·9	18
(a) Diarrhœal, ...	...	3	3	3	9	13	11	21	6	11	5	9	13	10	5	7	120	...	...	...
(b) Dentition, ...	...	...	...	...	...	...	...	...	...	2	1	4	1	2	1	3	14	...	...	...
(c) Others, ...	1	5	2	5	13	11	9	11	12	6	3	3	2	6	1	2	79	...	...	...
IV. DISEASES OF NERVOUS SYSTEM, ...	7	6	4	2	19	16	5	9	2	11	3	5	7	3	7	7	...	94	6·5	8
V. TUBERCULOUS DISEASES, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	63	4·4	5
(a) Tabes Mesenterica, ...	...	...	...	...	...	1	...	...	...	...	1	...	1	...	...	...	3	...	...	...
(b) Tubercular Meningitis, ...	...	...	...	...	...	...	3	2	5	5	2	2	3	2	3	3	30	...	...	...
(c) Other Forms, ...	...	...	...	...	...	3	...	3	4	...	4	3	4	2	4	3	30	...	...	...
VI. ACCIDENTS OF BIRTH, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	0·6	0·8
(a) Injury, ...	7	...	1	1	9	...	...	...	...	...	...	...	...	...	...	...	9	...	...	...
(b) Umbilical Hæmorrhage, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
VII. INFECTIOUS DISEASES, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	282	19·7	24
(a) Whooping-cough, ...	...	...	...	1	1	7	10	13	8	13	11	15	21	27	23	17	166	...	...	...
(b) Measles, ...	...	...	...	...	...	1	1	1	2	4	5	3	8	6	10	11	52	...	...	...
(c) Scarlet Fever, ...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	2	...	...	...
(d) Cerebro-Spinal Fever, ...	...	...	1	...	1	...	3	2	5	8	4	4	8	6	2	7	50	...	...	...
(e) Erysipelas, ...	1	...	...	...	1	2	1	...	1	1	...	1	...	...	...	1	8	...	...	...
(f) Diphtheria and Mem. Croup,	...	...	...	...	...	1	...	...	...	...	...	...	2	...	1	...	4	...	...	...
VIII. SYPHILIS, ...	1	1	1	...	3	2	5	3	...	1	...	1	...	...	1	...	...	16	1·1	1
IX. SUFFOCATION, ...	3	1	1	2	7	8	5	1	2	3	1	...	...	1	...	...	...	28	1·9	2
X. OTHER VIOLENCE, ...	...	...	...	...	...	...	1	1	...	1	...	1	...	...	...	...	...	4	0·2	0·3
XI. ALL OTHER CAUSES, ...	2	2	2	2	8	4	...	1	2	3	2	...	1	3	1	...	...	25	1.7	2
	234	69	57	43	403	144	104	101	84	93	62	79	96	95	85	85	...	1,431	100·0	121

THE WORK OF THE INFANT CONSULTATIONS.

In describing the scheme of visitation in the report for last year I referred to the expected development of the work which in France and elsewhere abroad goes under the title "Consultations des Nourrissons," and on which our infant consultations are based. The expansion of this work during the year is described in the following Report by Dr. Gallagher:—

Anderston.

This is the oldest of the baby centres, the first consultation having taken place in October, 1906. Since then 180 babies have been weighed and examined; of these, 111 have attended once since April, 1907. The number of attendances from October, 1906, to April, 1907, was 123, and from April, 1907, to April, 1908, 401, making a total of 524 attendances, or an average of nearly 3 per child. Of these, 127 were depot-fed, either in whole or part; 30 were entirely breast-fed; 5 were fed partly on breast and partly on other food (not depot); and 7 were wholly artifically fed exclusive of depot.

The visitors report weekly on Tuesdays, and immediately after the consultation which is held at three o'clock. The attendance since the branch depot was opened in August last has been large and regular.

Cowcaddens.

On 4th May, 1907, the first consultation took place in Cowcaddens. It was held in the Milton Street Public School on every Saturday from that date till August, when a depot was opened at 106 Maitland Street, where the depot milk is sold and consultations are held on Wednesdays and Saturdays at 11 a.m. Since May, 216 children have been weighed and examined there, making 720 attendances in all, with an average attendance of 3·3 per child. 83 attended once, 33 attended twice, and the others attended more than twice.

The children in attendance at the consultation are in large part depot-fed, and include many from the outlying and more respectable districts of the Ward. These mothers bring their infants willingly, and are glad of, and even eager for, the help which they receive from the consultation. To the less intelligent and the very poor, who live in the most congested part of the Ward, the consultation does not appeal so well—they will bring their babies quickly enough if there is anything wrong, but they do not grasp the idea of preventive medicine, though it is constantly being impressed on them.

From May, 1907, till December, 1907, every child born in Ward XVI. was visited as soon as possible after notification had been received. In the majority of cases visitation could not take place till the child was about a month old, as the early Notification of Births Act did not come into force till 1st January, 1908. Some half-dozen midwives practising in the district were induced to send in their notifications under the old system of paying 1s. for each. In this way it was possible to visit about 150 births a few days after confinement. The total number visited in the district during the above period was 716, and the result of the first visits is appended here. 200 of these are being continuously visited by the Ladies' Association, and the others have had at least one other visit paid them, unless in cases where the houses were quite above the class where notification is possible or the people had left the district.

Analysis of First Visits—Total, 716.

Nature of Attendance.		Nature of Feeding.	
Doctor, ...	120	Artificial, ...	69
Maternity Hospital, ...	20	Breast, ...	637
Scotia Street Nurse, ...	174	No information, ...	10
Dundas Street Nurse, ...	27		
Midwife, ...	216		716
Woman, ...	29		
No information, ...	130		
	586		

9 were badly nourished at the first visit.
44 were fairly nourished at the first visit.
All the others visited were well nourished.

It will be seen then that the scheme of visitation carried out in the Ward is fairly complete. Every child born there is visited by the doctor, and, where necessary, the visit is repeated by the voluntary visitor till the child is one year old. By this means, and with the aid of the consultations, a good deal of individual instruction has been given to the mothers; but, in addition, we arrange two courses of fourteen lectures each, dealing with the case of the mother and infant during the antenatal period and the first year of the child's life. The first course lasted from May till July, and the second from October till January. The attendance averaged during the summer about fifty, but was not so good in the winter months, when the nights were often cold and wet, and the mothers could not have attended without danger to their infants. The lectures were thoroughly appreciated—often many intelligent questions were put to the lecturer by the women, and a small consultation was the almost inevitable attendant.

In January a food depot for nursing mothers was opened, and has proved of the greatest service to very poor women who were suffering from the universal depression in trade. The depot is supported entirely by voluntary subscription, and is worked by a special committee of the Ladies' Association. The dinners, comprising two courses, cost one penny each, and much of the success is due to the excellent work of Miss Barton, who volunteered to do the actual cooking, &c., and who is at the depot every day from 11 till 2.30. In March the School Board kindly agreed to give a course of single cooking lectures to the women. At first the attendance was not good. This was due mainly, I think, to the fact that women were asked to bring their own materials, and many who would otherwise have attended were either too shy to do so or had nothing to bring. Other agencies at work in the district—most notably the latest effort of the Christian Social Union, *i.e.*, an adaptation of the Elberfeld system—are assisting in making supervision here complete in almost every aspect. That the key-note of success lies in the visitation of the houses of the children, together with periodical inspection by the doctor at the consultation, I have not the slightest doubt, as our greatest success so far has been where the two operate together.

The voluntary visitors meet at 67 Stirling Street on every alternate Thursday to report to the doctor who attends the meeting, and to discuss the work, &c.

Mile-End.

The first consultation was opened in the Charity Organisation Society premises at 63 Brook Street on 3rd June, 1907, and 99 babies have been weighed and examined there since that date. With the exception of about 12, they were all depot-fed children. Analysis as follows:—

There have been 244 attendances. Of these, 51 attended once, 17 attended twice, and the others more than twice.

Reasons for joining Depot.

Mother.		Child.		Breast-fed.
Ill-health, ...	14	Not thriving on breast,	4	12
Had to work, ...	10	Adopted, ...	5	—
Dead, ...	1	Tongue-tied, ...	1	
No milk or insufficient,	31	Cleft palate, ...	1	
Nipples retracted,	1		—	
	—		11	
	57		—	
	=			
No reason given, ...	19			
Total on depot, ...			87	

The consultations are held on Mondays at 3 p.m., and the visitors' meeting takes place on the first Monday of every month at 2.30.

Garngad.

The first consultation was started on 11th July. 53 babies were seen and examined there up till 1st March, 1908, comprising 148 attendances. Of these, 24 attended once, the others oftener.

Depot-fed, ...	26
Breast-fed, ...	16
Breast and other food, ...	3
Cow's milk and other food, ...	6
No information, ...	2
	53

The attendance here was regular. The voluntary visitors' meeting takes place on the first Thursday of every month in the Church Hall at 4 p.m.

63 Osborne Street.

The consultations at 63 Osborne Street were commenced on 11th June, 1907, since when 194 babies, giving 603 attendances, have been weighed and examined. Of these, 69 attended once, 42 attended twice, the others oftener. They were all, without exception, at some time or other on the depot milk.

There are no voluntary visitors in connection with this centre, but the babies receive one visit each from the Charity Organisation Society visitors.

Bridgeton.

The first consultation took place in Bridgeton about two months ago, since when about 50 babies have been weighed and examined. The average daily attendance at the consultations, which are held on Mondays at 4 p.m., is 16. The consultations have been very successful so far as the regularity of attendance goes since the beginning. This is largely owing, I think, to the energies of Mrs. Menzies, who impresses on the women as they come for the milk how important it is to keep the infants under careful supervision.

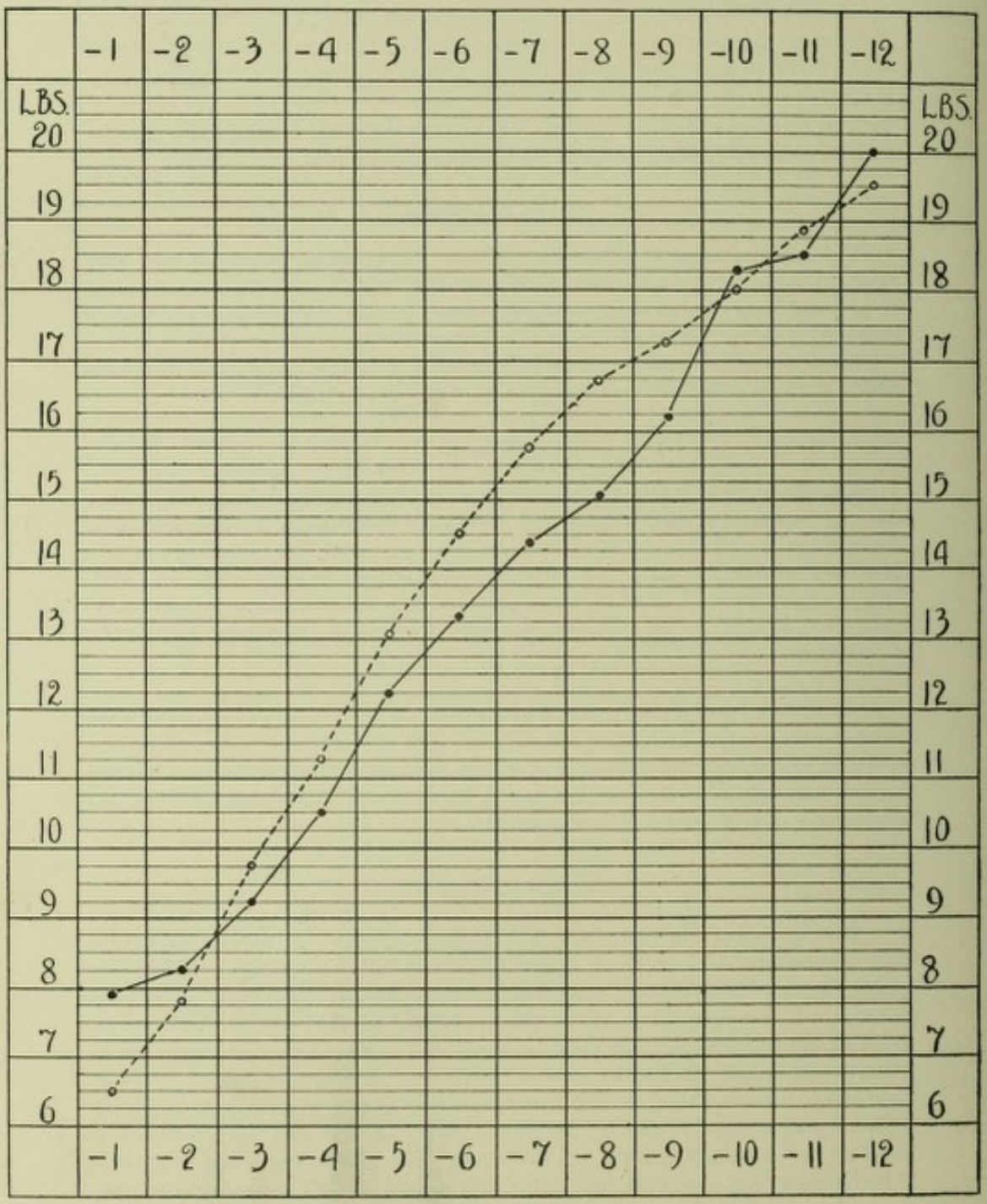
As I have noticed above, our best success has been where the consultation is efficiently worked in connection with the sale of work, and where there is a corps of voluntary visitors to supervise the children in their homes. Thus, by far the best results have been obtained in Cowcaddens, Anderston, and Bridgeton, where such a system is in operation.

General Results.

During infant life there is a fair comparison between increase in weight and well-being. A child which is not thriving usually loses weight. From this point of view the contrast indicated in the accompanying chart has some interest. It is a comparison of the weights of children brought to the consultations at Maitland Street and Osborne Street with those which are regarded as the average weights of healthy normal children at corresponding ages. It shows that the children of the consultations are, almost throughout the whole period, lighter than normally healthy children. Much of this may be attributed to the fact that so many of them are artificially fed. But it shows also that, notwithstanding this handicap, they ultimately attain, about the ninth month, the average weight of those other children who, throughout, have been in most cases fed on breast milk.

The apparently increased weight of the consultation children in the early and later months of their first year is due, I believe, to the smaller number of observations at these periods.

CHART showing AVERAGE GAIN in WEIGHT of CHILDREN attending CONSULTATIONS at MAITLAND STREET and OSBORNE STREET, based on 914 OBSERVATIONS on 353 CHILDREN. Normal Weights (- - - - -) are stated as the Monthly Averages of the Weights in Corresponding Weeks given in Kempton's Physiological Nursery Chart, designed by Eric Pritchard, M.D.



THE NOTIFICATION OF BIRTHS ACT.

The difficulties accruing from want of early notification of births have been removed by the adoption of the Notification of Births Act, 1907, and the following memorandum was prepared to outline a scheme by which it might become operative:—

MEMORANDUM BY MEDICAL OFFICER ON APPLICATION OF NOTIFICATION OF BIRTHS ACT.

General.

The Notification of Births Act includes still as well as live births.

The number of live births registered within the City annually exceeds 24,000.

The number of still births is unknown, but may be estimated at not less than 5 per cent. of those registered.

On the number registered last year the notifications under the present Act would have exceeded 26,000, or an average of not less than 83 per working day.

It may be anticipated, I think, that notifications on this scale will not begin immediately the Act comes into operation. Some time will be necessary before its requirements are generally known, but the proportion of omissions should become a decreasing quantity.

Until the practice is fully established, some modification of our present method of obtaining information of births from the registrars will be required to fill the gaps arising from incomplete notification.

Section 1 (4) of the Act provides that registrars shall have access to the Register of Notifications forwarded to the Medical Officer.

To give effect to this in a systematic manner, I would suggest that the registrars be asked to acquiesce in an arrangement by which a return of the births notified in each district be sent to the registrar thereof weekly. This would have the advantage of facilitating a restriction of their present custom of intimating all births registered to those only which had not been notified.

The scope of the Act is limited to the notification of births, but it is hoped that the information thus obtained will afford the Local Authority opportunity of getting into closer touch with the causes of infant mortality, and to arrange schemes of visitation which will bring to many mothers who could not otherwise obtain it some counsel regarding the conditions which imperil infant life.

Every birth, therefore, which takes place under the charge of the family medical attendant may be excluded from any scheme which it may be deemed desirable to adopt for the purposes of the Act.

But we have at the moment no precise knowledge of the number of births thus attended. The proportions obtainable from English cities can scarcely be applied here, for the midwifery customs of the two countries differ. But in Liverpool, Manchester, and Birmingham fully 60 per cent. of the total births in 1906 were attended by women, who are mostly certified midwives practising under supervision; while in Leeds, on the contrary, 50 per cent. of over 1,200 births occurring in one of the poorer districts were medically attended either at home (41 per cent.) or in institutions (9 per cent.).*

In Cowcaddens and its neighbourhood, of 1,460 births since the spring of 1906, 79 per cent. were attended by women whose training and customs are described in an appendix to this report. This proportion, however, will almost certainly be considerably above the average for the City.

In the absence of any satisfactory method of stating the number of infants requiring supervision of the kind indicated, an effort may be made to arrive at some working estimate of the extent of supervision which is reasonably possible of attainment.

The requirements of the several Wards vary enormously, and energy should be expended where it is most required.

This suggests a selective scheme of action and a combination of agencies which may be adapted to the varying requirements of individual Wards. It need be uniform only in its minimum requirements, but should provide in the worst districts for the greatest frequency of visitation which is attainable.

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* For this information I am indebted to the Officers of Health of the cities named.

We might thus accomplish—

(1) A minimum scale of visitation to every mother not medically attended at the birth of her child;

(2) supplementary visits to those where the need for continued supervision is obvious; and

(3) in selected Wards or districts of Wards where the infant death-rate is greatest such frequency of visitation as may be accomplished by voluntary agencies similar to those already at work in some of them.

Co-operation of Midwives.

In giving effect to the first part of this scheme it is apparent that a powerful auxiliary might be found among the midwives themselves could we enlist their co-operation. The Department would thus be brought into touch with a very large number of births at the time of their occurrence, and advantage to both mother and child would most probably result.

As the committee are aware, midwives in Scotland are under no supervision whatever at present, and their practices vary considerably.

The better sort would, I believe, willingly acquiesce in the proposal; and some instruction might be given them which would tend, I think, to yield some of the advantages which English cities possess in the Midwives Act.

More, however, will be required; and for all the sections of the scheme indicated it will be essential that a card be prepared for each birth not medically attended, on which certain details will be inscribed. This is a part of the work which will best be undertaken by the Department itself, and preferentially by visitors who may have occasion to make visits for other administrative purposes—the multiplication of visitors to individual houses being, I believe, undesirable.

It will also be obvious, I think, that these visits should be made by a female staff. If we assume, for purposes of illustration, that the present staff can devote more time to the work, an increase in the daily average number of visits made by them for birth card purposes from less than three to less than five would supply direct information of the circumstances under which more than one-half the total births occur.

In the districts selected for special effort under Section III. of the scheme the birth cards would then be passed on to the voluntary workers, who will be afterwards referred to.

In the remaining districts only such households as come within the description in Section II. would receive continued attention.

The first visit would thus, in all cases, be made by a staff visitor, and this, I believe, not only desirable, but in a certain manner essential to obtaining full advantage of the Act.

The districts in which effort at special supervision should be made will obviously fall to be selected from those Wards which present the higher infant death-rates, and it will be better, I believe, to concentrate attention at first in selected areas than to attempt to cover a larger field in a less complete manner.

The extent of supervision—*i.e.*, the frequency of visitation and the number of infants who may be included therein—will depend on the number of social workers who may volunteer for the work, for the committee must, I think, recognise that without voluntary assistance in this part of the work the information supplied through the Act cannot be utilised to much advantage by the present staff.

Indeed, we know from our own experience, and from a knowledge of what is being done elsewhere, as well as from the opinions expressed in the Committee rooms in the House of Commons when the notification clauses of our recent Provisional Order were under discussion, that the argument for obtaining the present Act was considerably strengthened by the knowledge that Local Authorities would find their efforts to reduce the present wastage of infant life willingly seconded by organisations of social workers. It is upon these organisations we must now rely for the detailed supervision which the selected districts will require.

For while the saving of infant life will form the primary object of the visitation, it will be found impossible to deal with it as a detached factor in domestic life, and the personal influence of an educated and sympathetic woman brought into intimate contact with so many of her poorer sisters cannot fail to operate for good in directions beyond the original object of the visit. It may readily indeed afford one of the most powerful influences for social reform which has yet been attempted.

The number of infants which one visitor may undertake will vary with the time at her disposal. From four to twenty per visitor represent the maximum variations which experience is suggesting as consistent with reasonable frequency in visitation, save where children are brought by their mothers to the "infant consultations," of which we have now five in operation.

The interval between visits will be guided by the needs of the particular household and the time at the disposal of the visitor. There is, we are ascertaining, a not inconsiderable tendency to have recourse to artificial feeding during the second month of infant life, and the causes of this require investigation. For the first three or four months of life, therefore, monthly, or even fortnightly, visits may be desirable in some instances, while, save in particular cases, those made after the sixth month may be at much longer intervals.

Hitherto effort has been made in the following directions:—

(1) Visitation of children using depot milk—at first wholly by workers of the Charity Organisation Society, but subsequently by the British Women's Temperance Association, and other workers also;

(2) visits (two in each case) by the women inspectors to children born under the care of the Maternity Hospital Outdoor Staff; and

(3) the formation of infant dispensaries, which are worked largely in co-operation with the first of these.

As these latter may form the centres for further development of the work, the following statement may have some interest:—

INFANT CONSULTATIONS.

Place.	Organisation Supplying Visitors.	No. of Visitors.	No. of Babies.
(1) Anderston, ...	Charity Organisation Society,	4	100
(2) Cowcaddens (Maitland Street),	British Women's Temperance Association,	40	160
(3) Garngad, ...	British Women's Temperance Association and others,	20	60
(4) Mile-end, ...	Charity Organisation Society, British Women's Temperance Association, and others,	11	75
(5) Osborne Street Depot, ...	Charity Organisation Society,	2	10
		77	405

The Anderston, Mile-end, and Osborne Street babies are all now or were formerly on the depot supply, and many of them are brought to the places named to be weighed, &c.

These districts in a general way represent the areas north of the river where effort should be made to overtake really effective supervision. They fall into groups, which may thus be stated—

	No. of Births annually.
I.—*Anderston District*, including—	
Anderston Ward at	218
Broomielaw „	599
Sandyford „ (portions of), ...	956
II.—*Cowcaddens District*, but especially the portion formerly known as Cowcaddens Sanitary District, from ...	700—900
III.—*Eastern District*. In selected portions of—	
Calton, ...	1,240
Mile-End, ...	1,781
Whitevale, ...	1,062
IV.—*North-Eastern District*. To include Garngad and a portion of Townhead.	

South of the river there is at present no organisation at work, but the Corporation have just granted the use of a room in the Kingston Halls, which will serve for the portion of the City west of Eglington Street.

The selected districts should be strictly limited to an area which should be coterminous with Ward boundaries or with portions of Wards included within the former sanitary districts, so that the results of the work may be compared with past experience.

It will be desirable that the visitors in each district should work under the direction of a lady superintendent, and advantage will result from monthly meetings with Dr. Gallagher for considering any questions which may arise.

Training.

No standard of training for this work can be insisted upon at first beyond a familiarity with the requirements of district visitation among the poor, but as the organisation develops new visitors could work along with those more experienced until they have become familiar with the questions likely to require attention.

No reference has hitherto been made to the request of the Home Office for information regarding the effect on infant mortality of the industrial occupation of mothers, because this will incidentally be obtained in the scheme just outlined.

Nor is it necessary to recall the various incidents in the passing of the Bill, which we are considering, in support of the opinion that the Local Authority are pledged to make every reasonable effort to establish its utility.

Special attention may thus be directed—

(1) to the suggestion to utilise a greater portion of the time of the female inspectors; and

(2) to enlist the co-operation of midwives.

The clerical arrangements necessary to focus the resulting information need not here be considered, but in order to give the detailed attention to the whole movement which is requisite I believe for its efficient working, I have to recommend that three female inspectors be added to the staff, who should be certified midwives, with a training in general nursing, especially of diseases of children.

It would tend to increase their usefulness if some time after appointment they qualified themselves for the certificate of the Sanitary Association of Scotland or of the Royal Sanitary Institute.

(Signed) A. K. CHALMERS.

INFANTS' MILK DEPOT.

The demand for milk prepared at the depot is shown in the following Statement:—

Table VII.—STATEMENT showing Average Daily Amount of Milk received and Average Number of Baskets issued during 1907.

Month.	Average daily number of gallons of milk received.	Average daily number of baskets issued by Depot.	Average daily number of baskets issued by Dairies.	Total baskets issued daily.	Number of Baskets not sold returned from Dairies during Month.	Number of Baskets supplied free during Month.
January, ...	110	46	514	560	139	244
February, ...	110	38	535	573	147	161
March, ...	117	40	572	612	154	154
April, ...	115	41	557	598	230	111
May, ...	113	34	529	563	328	47
June, ...	107	29	533	562	269	48
July, ...	97	29	458	487	529	55
August, ...	95	31	456	487	304	84
September,	87	29	406	435	231	83
October, ...	82	30	391	421	70	153
November,	87	30	422	452	11	218
December,	87	25	406	431	14	268

*The figures in these columns are monthly numbers, not averages.

The cost of working is shown in the following statement:—

TABLE VIII.—ORDINARY EXPENDITURE and REVENUE ACCOUNTS in connection with REDUCTION OF INFANTILE MORTALITY, extracted from Statements prepared by the Treasurer, Police Department, for Year ended 31st May, 1908.

ORDINARY EXPENDITURE.

GENERAL.			
General Expenditure, including Deputation and other Expenses, ...		£253 8 4	
Salary to Lady Medical Assistant to Medical Officer of Health, ...		160 0 0	
Fee for Notification of Births—General, ...	£19 17 0		
Do., Glasgow Maternity Hospital, ...	87 19 0		
		107 16 0	
Notification of Births Act, 1907—			
Expenses printing and sending Forms of Notification to Medical Men and Nurses, ...	£57 12 4		
Wages of Clerks, ...	44 4 2		
		101 16 6	
Queen Margaret Settlement Association—Use of Premises in Anderston District, and Services of Saleswoman, ...		19 10 0	
Charity Organisation Society—Rent of Premises at Franklin Street, Bridgeton, from 12th March, 1908, ...		6 10 0	
Hire of Hall in Brook Street, and Services of Attendant, ...		1 16 0	
			£650 16 10
INFANTS' MILK DEPOT, OSBORNE STREET.			
Ex-Superintendent's Salary to 18th April, and Superintendent's Salary from 9th April, ...		£88 15 5	
Salary to Substitute during Superintendent's Holidays, ...		5 1 6	
Wages to Staff, ...		367 5 0	
Insurance of Employees, ...		2 5 9	
Rent, Assessments, and Insurance, ...		118 14 2	
Fuel, ...		61 16 3	
Electric Energy and Upkeep of Installation, ...		26 11 8	
Petty Expenses, ...		7 18 7	
Sundry Furnishings and Repairs, ...		41 6 9	
Waterproof Aprons, Overalls, Clogs, &c., ...		5 3 11	
Laundry Work, ...		11 16 3	
Stationery, Printing, and Advertising, ...		24 2 6	
Oil, Soap, Cleaning Materials, cleaning Windows, &c., ...		41 8 5	
Milk, ...		1,606 15 4	
Milk Bottles, India-rubber Rings, Teats, Brushes, &c., ...		339 7 11	
Aluminium Stoppers, ...		604 18 11	
Wire Baskets and Repairs to same, ...		37 6 1	
Salt, Carbonic Acid, Sugar, &c., ...		54 4 11	
Van delivering Milk, ...		168 11 6	
Corporation, Water Department—Water Supply and Hire of Meter, ...		7 17 7	
Telephonic Communication—Glasgow Post Office Telephone Service, ...		11 5 5	
			3,632 13 10
BRANCH MILK DEPOT, MAITLAND STREET.			
Wages to Attendant, ...		£25 10 0	
Rent and Assessments, ...		16 1 5	
Painter and Joiner Work, ...		13 10 2	
Furnishings, Linoleum, &c., ...		11 15 7	
Stationery, Petty Expenses, &c., ...		1 8 9	
			68 5 11
			£4,351 16 7

REVENUE.

INFANTS' MILK DEPOT, OSBORNE STREET.			
Sales of Milk direct to the Public, ...		£111 7 11	
Sales of Milk through Private Dairies, ...	£1,310 5 5		
Less Discount allowed, 15 per cent., ...	196 4 0		
		1,114 1 5	
Sale of Broken Glass, Teats, &c., ...		58 3 3	
Distress Committee for Milk supplied at their expense to Poor Persons, ...		21 17 8	
			£1,305 10 3
BRANCH MILK DEPOT, MAITLAND STREET.			
Sales of Milk direct to the Public, ...		£149 15 9	
Sale of Teats, &c., ...		4 17 4	
Distress Committee for Milk supplied at their expense to Poor Persons, ...		1 11 9	
			156 4 10
QUEEN MARGARET SETTLEMENT ASSOCIATION'S PREMISES, ANDERSTON.			
Sales of Milk direct to the Public, ...		£122 10 9	
Sale of Teats, &c., ...		5 12 9	
Distress Committee for Milk supplied at their expense to Poor Persons, ...		7 10 6	
			135 14 0
CHARITY ORGANISATION SOCIETY'S PREMISES, BRIDGETON.			
Sales of Milk direct to the Public, ...		£24 3 6	
Sale of Teats, &c., ...		1 3 5	
			25 6 11
			£1,622 16 0
Balance, ...			2,729 0 7
			£4,351 16 7

In former reports reference was made to the difficulty in obtaining information regarding the antecedent conditions of many of the children obtaining supplies of milk through the several dairies where it was being sold. The need for some restriction in the freedom with which milk was supplied to any applicant became so obvious that the committee approved of a scheme by which only those infants who were certified by their medical adviser, or approved by Dr. Gallagher as requiring artificial feeding, were to be placed on the depot supply.

This method of certifying admission to the use of milk began on 1st July, 1907.

On 30th June there were 43 names on the depot, and 693 on the dairies, in all 736.

But although the number remaining on the dairies at May 31st, 1907, was 702, and at 30th June, 1907, 736, the average daily output of baskets only amounted to 565, and this difference of 171 between the output and the names on the register falls to be explained by the extremely irregular and unsystematic way in which the dairymen kept their books.

Between 1st July and 31st December, 1907, the following numbers were added to, and left the depot or dairies:—

	Admitted.	Dismissed.
July, ...	74	168
August, ...	144	202
September, ...	130	206
October, ...	100	140
November, ...	140	111
December, ...	78	92
	666	919

The admissions were 253 fewer than the dismissals, so that on the assumption that the 736 names on the dairies at 30th June had been correct there ought to have been remaining 483 on the dairies at 31st December, but, on a revision of the dairy books, the names actually enrolled were 401, or 82 fewer than the December statement, which again means that the dairies themselves are still inaccurate in their book-keeping, although the proportion of the inaccuracy has been considerably reduced since the restrictions placed on obtaining the milk in July.

The 666 names or admissions just alluded to, being added subsequently to the introduction of the system of the restriction mentioned, should have been either (1) under certificate of the family medical attendant, or (2) with the approval by Dr. Gallagher.

Many, however, were added by the dairies without either approval, and the following table more accurately states what actually happened. The known admissions or the approved admissions may be stated as follows:—

From applications—	
Certified as fit by doctors, ...	66
Certified by Dr. Gallagher after visitation, ...	133
Refused as beyond boundary, ...	3
	202
Admitted by Dr. Gallagher to—	
Osborne Street Depot, ...	134
Anderston, ...	40
Mile-End, ...	12
Cowcaddens, ...	52
Garngad (say), ...	20
	460

So that something like 206 have been added by the dairy-keepers contrary to instructions.

Of 3,075 children who died during the year, 105 were known to be using depot milk only. The causes of death of these are shown in the following Tables:—

GLASGOW, 1907.—CAUSES OF DEATH AMONG INFANTS FED ON CORPORATION MILK.

TABLE IX.—MALES.

CAUSES OF DEATH.	Age in Weeks.					Age in Months.							Total.
	1	2	3	4	Total.	2	3	4	5	6	6 to 9	9 to 12	
I. Immaturity, ...	...	...	1	...	1	3	1	1	2	1	...	...	9
II. Diseases of Respiratory System,	...	...	...	...	...	...	3	2	...	...	6	...	11
III. Diseases of Digestive System,	...	...	1	...	1	...	2	3	1	3	3	...	13
IV. Diseases of Nervous System,	...	...	...	...	...	1	...	..	1	2	1	1	6
V. Tuberculous Diseases, ...	...	...	...	...	...	...	...	...	...	1	1	...	2
VI. Infectious Diseases, ...	...	...	...	...	...	...	...	...	...	...	2	2	4
VII. Suffocation, ...	...	...	...	...	...	...	...	...	...	...	...	...	...
VIII. All other Causes, ...	...	...	...	...	...	2	1	...	...	...	...	1	4
	...	...	2	...	2	6	7	6	4	7	13	4	49

TABLE X.—FEMALES.

CAUSES OF DEATH.	Age in Weeks.					Age in Months.							Total.
	1	2	3	4	Total.	2	3	4	5	6	6 to 9	9 to 12	
I. Immaturity, ...	...	...	1	...	1	2	3	1	1	1	...	...	9
II. Diseases of Respiratory System,	...	1	...	...	1	...	...	...	1	1	3	4	10
III. Diseases of Digestive System,	...	...	...	...	...	2	1	5	1	1	2	4	16
IV. Diseases of Nervous System,	...	...	...	...	...	...	...	...	...	...	2	1	3
V. Tuberculous Diseases, ...	...	...	...	...	...	...	...	...	...	...	1	2	3
VI. Infectious Diseases, ...	...	...	...	...	...	...	...	...	...	...	4	1	5
VII. Suffocation, ...	...	...	...	...	...	...	...	...	...	...	...	...	...
VIII. All other Causes, ...	...	...	...	...	...	...	...	...	...	...	...	...	...
	...	1	1	...	2	4	4	6	3	3	12	12	46

SECTION II.

INFECTIOUS DISEASES.

During the year 21,193 cases of infectious disease were registered and dealt with by the Department. This represents a rate equal to 26 per 1,000 of the population, which is 2 per 1,000 higher than in 1906. Of the total, 7,761, or 36·6 per cent., were treated in hospital. The varying rates of incidence in the several wards are shown in Table XII., but it must be remembered that these only afford an accurate attack-rate for those diseases which are notifiable under the Infectious Disease (Notification) Act. On the other hand, for measles and whooping-cough, which are here grouped with phthisis and anthrax in the column "All others," the rates given indicate only the cases known and dealt with.

Notwithstanding this, however, it will be observed that these diseases form almost 21 per thousand of the total dealt with, as compared with less than 6 per thousand from all the infectious diseases which are notifiable.

Typhus fever is represented by only a few cases—less than at any former period—and there is a reduction also in diphtheria, while enteric fever and scarlet fever were both somewhat more prevalent. The rate for cerebro-spinal fever was considerably greater.

The composition of the rate is shown in the following Table for the past five years:—

TABLE XI.

GLASGOW.—CASE-RATE PER MILLION OF THE POPULATION FOR CERTAIN ZYMOTICS AND FOR ALL CASES OF INFECTIOUS DISEASES REGISTERED, 1903-07.

YEAR	Typhus Fever.	Enteric Fever.	Continued and Undefined.	Puerperal.	Smallpox.	Scarlet Fever.	Diphtheria and Membranous Croup.	Cerebro-Spinal Fever.	All Others.	TOTAL.
1903,	41	1,207	22	138	373	2,597	926	...	15,776	21,080
1904,	34	800	39	113	1,108	2,003	824	...	15,873	20,794
1905,	67	569	37	137	5	1,235	924	...	22,038	25,013
1906,	12	483	76	148	4	1,721	1,580	255	19,467	23,746
1907,	6	583	36	151	1	2,180	1,510	1,237	20,564	26,268

In the following Table a comparison is established for the several Wards of the relative incidence of notifiable and non-notifiable infectious diseases.

Out of a rate of 26·268 per 1,000, the portion contributed by the non-notifiable diseases is 20·5.

The incidence of both together was greatest in Mile-end, Whitevale, and Kinning Park, in which the attack rate exceeded 40 per 1,000. It was lowest in Blythswood, Park, Pollokshields, and Kelvinside, where the rates were respectively 6, 9, 7, and 6 per 1,000.

The incidence of scarlet fever was general, although by no means uniform.

Enteric fever was, relatively, most prevalent in Blackfriars, Anderston, and Kingston Wards. The attack rate from cerebro-spinal fever exceeded 2 per 1,000 in Calton and Blackfriars.

If reference be made to Table V. in the Appendix, the number of cases occurring and of those removed to hospital in each Ward will be found, while in Table VI. the seasonal distribution of the cases throughout the year is stated.

TABLE XII.

GLASGOW, 1907.—CASE-RATE per Million for CERTAIN ZYMOTICS and for ALL CASES registered in each MUNICIPAL WARD.

MUNICIPAL WARDS.	FEVERS.						Smallpox.	Diphtheria and Membranous Croup.	* All other Causes.	TOTAL.
	Cerebro-Spinal.	Typhus.	Enteric.	Continued and Undefined.	Puerperal.	Scarlet.				
1. Dalmarnock, ...	1,531	...	687	20	349	1,780	...	1,323	22,596	28,266
2. Calton, ...	2,152	...	558	27	106	1,594	...	1,328	29,146	34,911
3. Mile-end, ...	1,715	...	579	150	321	1,114	...	1,264	35,513	40,656
4. Whitevale, ...	1,737	...	719	90	150	1,977	...	1,827	34,171	40,671
5. Dennistoun, ...	929	...	490	26	77	2,787	...	1,729	21,314	27,352
6. Springburn, ...	1,498	...	547	20	121	2,733	...	2,389	21,641	28,949
7. Cowlairs, ...	785	...	720	...	164	3,631	...	1,439	28,688	35,427
8. Townhead, ...	1,537	...	344	26	185	2,835	...	795	25,385	31,107
9. Blackfriars, ...	2,128	...	1,685	133	310	2,172	...	1,906	23,629	31,963
10. Exchange, ...	1,204	...	401	...	...	401	...	...	12,043	14,049
11. Blythswood, ...	825	...	550	...	...	550	...	275	3,850	6,050
12. Broomielaw, ...	1,863	110	767	...	219	2,082	...	1,205	21,041	27,287
13. Anderston, ...	1,903	33	1,247	...	131	2,263	...	2,854	21,847	30,278
14. Sandyford, ...	1,422	...	553	...	39	1,698	...	2,132	20,573	26,417
15. Park, ...	821	...	313	78	39	1,486	...	1,760	4,890	9,387
16. Cowcaddens, ...	1,255	...	491	27	109	1,282	...	764	14,541	18,469
17. Woodside, ...	848	...	619	...	183	2,292	...	802	18,637	23,381
18. Hutchesontown, ...	1,292	...	583	51	253	2,357	...	1,825	19,387	25,748
19. Gorbals, ...	832	...	444	55	83	2,301	...	1,359	15,000	20,074
20. Kingston, ...	1,388	...	1,099	58	173	1,706	29	1,561	27,613	33,627
21. Govanhill, ...	692	...	346	29	173	2,884	...	1,269	15,688	21,031
22. Langside, ...	241	...	145	...	...	2,939	...	1,542	8,503	13,370
23. Pollokshields, ...	216	54	108	...	...	2,483	...	917	3,238	7,016
24. Kelvinside, ...	129	...	388	...	...	1,295	...	1,079	4,402	6,293
25. Maryhill, ...	1,180	48	361	24	169	2,600	...	1,565	15,144	21,091
26. Kinning Park,...	1,646	...	673	...	75	1,646	...	2,170	33,964	40,174
CITY, ...	1,237	6	583	36	151	2,180	1	1,510	20,564	26,268

* Erysipelas, Measles, Whooping-cough, Chickenpox, Phthisis, Beri-Beri, and Java Fever.

NOTE.—The populations on which these rates are based include Institutions and Shipping.

INFECTIOUS DISEASE (NOTIFICATION) ACT, 1889.

The cost per 1,000 of the population for Notification Fees since 1891 is as follows:—

GLASGOW.—AMOUNT PER 1,000 OF POPULATION OF FEES FOR CERTIFICATES UNDER THE INFECTIOUS DISEASE (NOTIFICATION) ACT, 1889, FOR EACH YEAR FROM 1891.

Year.	Amount. £	s.	d.
1891,	1	1	10·4
1892,	1	6	1·2
1893,	1	6	9·2
1894,	1	4	8·7
1895,	1	1	5·0
1896,	0	18	0·1
1897,	0	18	0·1
1898,	1	0	9·0
1899,	1	3	10·0
1900,	1	2	1·0
1901,	1	4	5·9
1902,	0	16	7·4
1903,	0	14	0·5
1904,	0	13	4·2
1905,	0	9	2·6
1906,	0	12	7·3
1907,	0	15	10·9

In order to show the monthly variation in the numbers of notifications received, and the proportion which "public" and "private" cases form in the totals, the following Table is inserted:—

1907.	Private.	Public.	£	s.	d.
January,	482	61	63	6	0
February,	546	54	70	19	0
March,	399	55	52	12	6
April,	405	60	53	12	6
May,	435	61	57	8	6
June,	281	51	37	13	6
July,	256	38	33	18	0
August,	320	61	43	1	0
September,	393	54	51	16	6
October,	463	59	60	16	6
November,	517	66	67	18	6
December,	373	42	48	14	6
	4,870	662	641	17	0
1906,	3,866	464	506	9	0
Increase,	1,004	198	135	8	0

PRINCIPAL INFECTIOUS OR EPIDEMIC DISEASES.

The number of deaths arising from the principal zymotic diseases—smallpox, diphtheria, scarlet fever, typhus, enteric, and undefined fevers, cerebro-spinal fever, measles, whooping-cough, and diarrhœa—in 1907 was 2,662, representing an annual death-rate of 3·300 per 1,000 living, as compared with 2·436 in 1906.

The corresponding rates for several periods were—

1881-90, ...	3·600	per 1,000 living.
1891-1900, ...	3·282	,,
1900, ...	3·013	,,
1901, ...	3·773	,,
1902, ...	2·072	,,
1903, ...	2·507	,,
1904, ...	2·450	,,
1905, ...	2·500	,,
1906, ...	2·436	,,
1907, ...	3·300	,,

The rate here given represents an increase of 864 deaths per million on that recorded in 1906, and has not been equalled in any individual year since 1901. Bearing in mind what has already been said regarding the uncertainty surrounding present estimates of the population, we may compare the corresponding rates during 1906 and 1907, with the object of discovering whence the increase in the present year arises. In diphtheria, scarlet fever, and diarrhœa, the rates for 1907 were lower by 12, 6, and 386 than during 1906, a combined decrease of 404; but on the other hand enteric fever was increased by 12, cerebro-spinal fever by 669, measles by 4, and whooping-cough by 583, together 1,286, and the difference may be stated as equal to 864 per million, representing the amount by which the rate for the present year exceeds that of 1906. The increase is thus largely owing to the death-rate from cerebro-spinal fever, and also in a lesser degree to an increased fatality from whooping-cough.

In the following Table the corresponding rates for several towns are given on the basis of the Registrar-General's tabulation:—

PRINCIPAL ZYMOTIC DISEASES.

	Death-rate per 100,000. 1897-1906.	1907.
Glasgow, ...	**260**	**279**
Edinburgh, ...	199	145
Dundee, ...	199	199
Aberdeen, ...	186	103
London, ...	221	142
Liverpool, ...	341	201
Manchester, ...	303	172
Birmingham, ...	285	178

In comparing these figures it is to be noted that the Registrar-General for England includes smallpox, measles, scarlet fever, diphtheria, whooping-cough, "fever," and diarrhœa; whereas the Registrar-General for Scotland omits diarrhœa from his group, but adds influenza.

EXCESSIVE FATALITY FROM NON-NOTIFIABLE DISEASES.

In Table XIII. the deaths and death-rates of the several Wards are given, and for comparative purposes the corresponding rates for the years 1903-1906.

From all diseases of the principal zymotic class the death-rate was greatest in Dalmarnock and lowest in Kelvinside. It considerably exceeded the City mean in Calton, Mile-end, Whitevale, Springburn, Blackfriars, Broomielaw, and Anderston.

Some significance attaches to the relative distribution of the diseases of this class, and this has been done in a subsequent Table (page 46), in which the relative incidence of the several diseases of the zymotic class in the Wards where the mean rate for the City was exceeded are analysed.

From this comparison we learn that almost two-thirds of the zymotic rate arises from measles, whooping-cough, and diarrhœa; that whooping-cough itself constitutes almost one-half of the total rate yielded by the infectious diseases which are not notifiable; that cerebro-spinal fever stands third in the order of magnitude; while diphtheria, enteric fever, scarlet fever, and typhus fever have rates represented by 157, 114, 56, and 2 per million, respectively.

Whooping-cough may be said to have been excessively fatal in all the Wards, the incidence being greatest in Dalmarnock; measles proved relatively most fatal in Broomielaw, Mile-end, and Whitevale; Kinning Park, Hutchesontown, Townhead, and Cowcaddens had relatively less cerebro-spinal fever; Blackfriars had less diphtheria, but more enteric fever than the others; while all the wards included in the comparison are exempt from typhus fever.

The Table serves also to illustrate that the greater part of the fatality from infectious disease now arises from those which are not notifiable, and the question will soon require to be considered whether the first step against whooping-cough can only be taken by making the disease notifiable.

TABLE XIII.

GLASGOW, 1907.—PRINCIPAL ZYMOTIC DISEASES.—DEATHS AND DEATH-RATES IN THE SEVERAL WARDS, WITH CORRESPONDING RATES FOR 1903-06.

MUNICIPAL WARDS.	Death-rate per Million.				1907.	
	1903.	1904.	1905.	1906.	Deaths.	Death-rate per Million.
1. Dalmarnock, ...	3,873	3,316	4,028	3,440	298	6,011
2. Calton, ...	4,132	3,529	3,171	3,023	199	5,595
3. Mile-end, ...	4,031	3,381	3,580	4,007	235	5,093
4. Whitevale, ...	2,694	2,932	3,041	3,261	148	4,566
5. Dennistoun, ...	1,876	1,752	1,133	1,355	76	1,058
6. Springburn, ...	2,248	3,571	3,303	2,613	196	4,347
7. Cowlairs, ...	2,149	2,802	2,166	2,373	97	3,173
8. Townhead, ...	2,626	1,931	2,394	2,351	133	3,527
9. Blackfriars, ...	2,859	2,667	2,892	2,568	103	4,773
10. Exchange, ...	896	894	945	962	4	1,965
11. Blythswood, ...	1,112	1,435	901	305	1	306
12. Broomielaw, ...	4,558	3,090	3,753	3,705	41	5,480
13. Anderston, ...	2,275	3,534	3,651	2,918	134	4,622
14. Sandyford, ...	2,227	2,351	3,000	2,079	80	3,200
15. Park, ...	842	674	520	925	19	773
16. Cowcaddens, ...	3,929	3,325	2,891	3,812	124	3,499
17. Woodside, ...	2,103	2,064	1,560	2,186	86	1,980
18. Hutchesontown, ...	2,716	3,690	3,606	3,330	141	3,574
19. Gorbals, ...	2,244	1,723	2,050	2,119	103	2,924
20. Kingston, ...	2,647	2,231	2,431	2,527	134	3,950
21. Govanhill, ...	1,865	1,977	2,341	2,206	83	2,394
22. Langside, ...	979	735	500	542	37	904
23. Pollokshields, ...	707	282	448	337	7	378
24. Kelvinside, ...	371	654	580	138	8	357
25. Maryhill, ...	1,622	1,890	2,489	2,460	85	2,125
26. Kinning Park, ...	...	...	...	2,436	56	4,191
— Institutions and Harbour, ...	...	...	...	...	34	...
CITY, ...	2,507	2,450	2,500	2,436	2,662	3,300

GLASGOW, 1907.—ZYMOTIC DEATH-RATE per MILLION in certain WARDS whose RATES EXCEED the MEAN RATE of the whole City.

MUNICIPAL WARDS.	Total Zymotics.	Smallpox.	Diphtheria.	Scarlet Fever.	Typhus Fever.	Enteric Fever.	Undefined Fever.	Cerebro-Spinal Fever.	Measles.	Whooping-cough.	Diarrhœa.	Total of Last Three Columns.
Dalmarnock, -	6,011	...	222	101	...	222	...	1,069	686	2,521	1,190	4,397
Calton, - -	5,595	...	253	56	...	169	...	1,631	928	1,518	1,040	3,486
Broomielaw, -	5,480	...	401	267	...	...	...	1,738	1,069	1,604	401	3,074
Mile-end, -	5,093	...	217	22	...	87	...	1,257	1,148	1,170	1,192	3,510
Blackfriars, -	4,773	...	46	46	...	417	...	1,298	973	1,159	834	2,966
Anderston, -	4,622	...	276	69	...	103	...	1,311	690	1,587	586	2,863
Whitevale, -	4,566	...	185	62	...	93	...	1,388	1,234	833	771	2,838
Springburn, -	4,347	...	288	89	...	44	...	1,331	754	1,198	643	2,595
Kinning Park,	4,191	...	224	...	...	150	...	973	973	1,347	524	2,844
Kingston, -	3,950	...	265	29	...	118	...	1,061	796	1,091	590	2,477
Hutchesontown, -	3,574	...	304	76	...	101	...	837	304	1,648	304	2,256
Townhead, -	3,527	...	80	...	...	53	...	981	424	1,459	530	2,413
Cowcaddens, -	3,499	...	85	85	...	141	...	818	141	1,439	790	2,370
CITY, -	3,300	...	157	56	2	114	...	847	496	1,081	547	2,124

NOTE.—The very large proportion of this rate, which is contributed by Measles, Whooping-cough, and Diarrhœa, will be found by comparing the rate for the diseases shown in the last column with the total Zymotic rate given in the first column.

SMALLPOX.

One case of smallpox was registered during the year, and was removed to hospital, where recovery took place.

The circumstances under which the case occurred were reported to the Committee on Health as follows:—

(Extract from Minute of date 4th March, 1907.)

SMALLPOX.

At the close of the fortnight a case of smallpox was admitted to hospital in the person of a fireman, who had arrived in Manchester on the evening of Wednesday, 20th February, on board a steamer from Alexandria, and had travelled by night train to Glasgow. For the next two days he lived in a lodging-house on the South Side. The history of his illness is as follows:—On Sunday, 17th February, he sickened while at sea, on the sixteenth day after leaving Alexandria, which was the last point of probable contact with infection. During the 17th and 18th he was off work, but resumed his duties as fireman on the latter date, and remained at work until the arrival of the vessel at Manchester. Probably on account of this he escaped detection, because the rash had developed at an early stage, and must have been easily recognisable before the arrival of the vessel in the Mersey.

Altogether 80 persons were ascertained to have been in contact with the patient, and of these 43 were revaccinated at the time.

VACCINATION.

The following statement shows the number and cost of vaccinations and re-vaccinations performed by the officers of the department, or on behalf of the Corporation, during the year 1907:—

	Primary.	Re-vaccinations.
At Office and Hospitals, ...	377	273
In Prisons, ...	—	832
	377	1,105

Cost.

1. Vaccinations of Prisoners, ...	£41 12 0
2. Cost of Lymph, ...	39 0 0
	£80 12 0

Primary Vaccination.

Table XIV. has been compiled from the figures contained in the Registrar-General's supplement for 1907, and gives particulars as to the vaccination of all children born in Glasgow during 1906. For comparison the figures for several preceding years are introduced.

TABLE XIV.

GLASGOW.—PRIMARY VACCINATION during 1906—COMPILED from the 53RD ANNUAL REPORT of the REGISTRAR-GENERAL.

Registration Districts.	Successfully Vaccinated.		Vaccination Postponed.		Insusceptible of Vaccination.		Died before Vaccination.		Statutory Declaration of Conscientious Objection.		Removed from District, or otherwise Unaccounted for.		Total Births for 1906.
	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	
1. Maryhill, ...	1,399	81·0	64	3·7	7	0·4	125	7·2	4	0·3	128	7·4	1,727
2. Shettleston, ...	...	...	...	...	...	...	...	...	...	...	...	...	...
3. Bridgeton, ...	1,643	84·5	2	0·1	2	0·1	218	11·2	1	0·0	80	4·1	1,946
4. Camlachie, ...	1,742	84·1	9	0·4	10	0·5	213	10·3	1	0·0	98	4·7	2,073
5. Dennistoun, ...	2,731	84·8	18	0·6	19	0·6	316	9·8	4	0·1	133	4·1	3,221
6. Calton, ...	913	81·3	2	0·2	6	0·5	137	12·2	...	...	65	5·8	1,123
7. Blackfriars, ...	929	73·1	5	0·4	9	0·7	224	17·6	...	...	104	8·2	1,271
8. St. Rollox, ...	1,621	85·5	7	0·4	8	0·4	206	10·9	5	0·2	50	2·6	1,897
9. Blythswood, ...	374	83·2	1	0·2	1	0·2	45	10·0	1	0·2	28	6·2	450
10. Milton, ...	1,165	81·0	2	0·1	10	0·7	185	12·9	1	0·0	76	5·3	1,439
11. Kelvin, ...	1,250	85·2	7	0·5	12	0·8	141	9·6	6	0·4	51	3·5	1,467
12. Anderston, ...	1,065	82·4	6	0·5	4	0·3	162	12·6	1	0·0	54	4·2	1,292
13. Hutchesontown,	2,076	81·3	6	0·2	9	0·3	257	10·1	12	0·5	193	7·6	2,553
14. Gorbals, ...	1,144	83·7	32	2·3	8	0·6	137	10·0	2	0·2	44	3·2	1,367
15. Tradeston, ...	606	81·0	23	3·1	5	0·7	89	11·9	2	0·3	23	3·0	748
16. Kinning Park, ...	761	81·4	3	0·3	11	1·2	87	9·3	3	0·3	70	7·5	935
17. Plantation, ...	12	92·3	...	...	...	...	...	...	..	...	1	7·7	13
18. Govan, ...	27	77·2	...	...	...	...	4	11·4	...	...	4	11·4	35
19. Partick,... ...	228	91·2	...	...	6	2·4	7	2·8	1	0·4	8	3·2	250
20. Rutherglen, ...	...	...	...	...	...	...	1	...	...	...	...	...	1
21. Cathcart, ...	564	89·7	18	2·9	5	0·8	30	4·7	2	0·3	10	1·6	629
22. Eastwood, ...	108	90·0	1	0·8	1	0·8	7	5·9	...	...	3	2·5	120
CITY, ...	20,358	82·9	206	0·8	133	0·5	2,591	10·6	46	0·2	1,223	5·0	24,557
1902, ...	...	84·2	...	0·8	...	0·9	...	10·6	...	...	...	3·5	24,720
1903, ...	...	84·6	...	0·7	...	0·6	...	10·8	...	...	...	3·3	25,142
1904, ...	...	83·4	...	1·2	...	0·7	...	11·0	...	...	...	3·7	24,751
1905, ...	...	84·5	...	1·3	...	0·6	...	10·0	...	...	...	3·6	24,315

A Table has also been compiled from the annual Returns of the Registrar-General, and is here introduced. It shows the percentage of primary vaccinations to births during each year 1871 to 1906.

The tendency towards a shrinkage in this proportion became perceptible in the later, and particularly in the last year of the period.

GLASGOW, 1871-1906.—VACCINATIONS AND BIRTHS—COMPILED from the REGISTRAR-GENERAL'S ANNUAL SUPPLEMENTS.

Year.	No. of Births.	No. of Vaccinations.	Per cent. Vaccinated.	Year.	No. of Births.	No. of Vaccinations.	Per cent. Vaccinated.
1871	18,857	16,042	85·1	1889	19,500	16,477	84·5
1872	20,150	17,453	86·6	1890	19,281	16,387	85·0
1873	19,491	16,689	85·5	1891	19,846	16,933	85·3
1874	20,051	17,057	85·1	1892	22,819	19,645	86·1
1875	20,802	17,873	85·9	1893	21,409	18,026	84·2
1876	20,952	18,034	86·1	1894	22,644	19,454	85·9
1877	21,097	18,129	85·9	1895	22,809	19,391	85·1
1878	20,621	17,623	85·5	1896	24,032	20,348	84·7
1879	19,702	17,178	87·2	1897	23,879	19,932	83·5
1880	18,889	16,323	86·4	1898	24,263	20,080	82·8
1881	19,076	16,609	87·1	1899	24,247	20,191	83·3
1882	19,687	16,962	86·2	1900	24,358	20,512	84·2
1883	19,867	17,178	86·5	1901	24,202	20,094	83·0
1884	20,552	17,691	86·1	1902	24,722	20,804	84·2
1885	19,847	17,189	86·6	1903	25,142	21,270	84·6
1886	19,856	17,243	86·8	1904	24,751	20,645	83·4
1887	19,327	16,601	85·9	1905	24,315	20,543	84·5
1888	19,310	16,537	85·6	1906	24,557	20,358	82·9

VACCINATION (SCOTLAND) ACT, 1907.

The effect of this Act is likely to produce a population which in time will repeat the old experience of smallpox as a disease of childhood. It came into operation on 28th August, 1907, and has been under the consideration of the Committee on Health on several occasions. The resolutions of the committee, and the results of the operation of the Act up till 31st December, 1907, are contained in the following extracts:—

(*Extract from Letter, Medical Officer of Health to Town-Clerk, 23rd September*, 1907

VACCINATION (SCOTLAND) ACT, 1907.

In this Act children may be exempt from vaccination if within six months of birth the person responsible for the child makes a statutory declaration to the effect required by the Act. Section I. (2) requires that such declaration shall be recorded, and Local Authorities are empowered to obtain from registrars such particulars of these declarations as may be approved by the Local Government Board for Scotland. For this a sum of 2d. is charged, and I wish the approval of the committee to obtaining the information provided by this clause.

We presently obtain in a similar way weekly information regarding births, deaths, and defaulting vaccinations.

(*Extract from Minute of date 27th November*, 1907.)

With reference to minute, of date 23rd ultimo (Print No. 49, page 2763), when there was submitted a circular-letter, of date 24th September last, from the Secretary of the Local Government Board directing attention to the Vaccination (Scotland) Act, 1907, as also a report, of date 23rd September last, on the said statute by the Medical Officer of Health, the committee resumed consideration of said circular-letter, and directed special attention to the provisions of Section 1 (2) of the Act, which enact that "a registrar shall keep such record of statutory declarations as may be prescribed by the Registrar-General, and shall furnish declarations as may be prescribed by the Registrar-General, and shall furnish to any Local Authority executing the Public Health (Scotland) Act, 1897, within his district such periodical returns of statutory declarations as may be required of him and approved by the Local Government Board for Scotland, and for each declaration intimated in any such return he shall be paid by the Local Authority the sum of twopence, and the Local Authority shall provide the forms on which such returns are to be made, and shall pay for their transmission by letter post."

There was also submitted a further circular-letter, of date 22nd current, from the Secretary of the Local Government Board directing attention to the above provisions, and, as the approval of the Board is necessary before the returns referred to can be called for, enclosing for the information of the Local Authority of the City a suggested form of return which might be adopted by the Local Authority or modified according to their requirements. The committee agreed to recommend that the form suggested by the Local Government Board be adopted by the Corporation as Local Authority of the city, and that the Town-Clerk be authorised to make application to them for their formal approval of the form of returns of statutory declarations, and that, on such approval being obtained, it be remitted to the Medical Officer of Health to carry out all necessary provisions under the Act following on such returns being furnished to him.

(*Extract from Minute of date 24th December*, 1907.)

The Town-Clerk submitted a communication, of date 14th current, from the Secretary of the Local Government Board conveying the approval of the Board in terms of Section 1 (2) of the Vaccination (Scotland) Act, 1907, of the return of statutory declarations of conscientious objection under that Act to be used in the city, and inquiring, for the information of the Board, how often the Local Authority propose to obtain the returns from the registrars. He also reported that the Medical Officer of Health having arranged for such returns being made monthly he had advised the Local Government Board accordingly.

(*Extract from Minute of date 12th February*, 1908.)

VACCINATION (SCOTLAND) ACT, 1907.

This Act came into operation on 28th August last, and up till 31st December, 1907, the declarations of conscientious objection to vaccination lodged with the district registrars affected 474 children, whose ages, at the time of declaration, were as follows:—

Age.	Males.	Females.	Total.
– 3 months, ...	31	27	58
– 6 ,, ...	132	114	246
– 9 ,, ...	32	31	63
– 12 ,, ...	11	9	20
1 year and up, ...	45	42	87
	251	223	474

It is significant that only 87 of these children are more than a year old, while 304 are under 6 months. It suggests that we shall have a rapidly increasing number of children susceptible to smallpox, and that the provision of permanent hospital accommodation for the disease must be greater and not less than formerly. In the early seventies, when the population fell considerably short of 500,000, this provision was fixed at 150 beds; now we have a population of more than 800,000, and the likelihood of a yearly addition of susceptible children who had no parallel in the conditions then existing.

Declarations have been made in every Ward of the city save Blythswood and Broomielaw, but they are numerically greatest in Dalmarnock, Mile-end, Dennistoun, Springburn, Cowlairs, Woodside, Hutchesontown, Govanhill, Pollokshields, and Maryhill.

DIPHTHERIA.

The cases of diphtheria registered during the year numbered 1,218, compared with 1,270 in 1906, and the number of deaths registered was 127, compared with 136 in 1906. These figures for 1907 represent an attack-rate of 1,510 per million living, and a death-rate of 157, compared with 1,580 and 169, which were the corresponding rates for 1906. The morbidity-rate (that is, the death-rate per 100 cases) was also slightly lower.

These facts seem to suggest that the increased prevalence of the disease, which began in the autumn of 1905, has now to some extent spent itself, an impression which is supported by a survey of the figures for the first half of 1908.

For several periods the death-rate for diphtheria in Glasgow has been:—

1881-90,	·280	per 1,000 living.
1891-1900,	·231	,,
1900,	·165	,,
1901,	·151	,,
1902,	·135	,,
1903,	·132	,,
1904,	·116	,,
1905,	·136	,,
1906,	·169	,,
1907,	·157	,,

Compared with several other towns during the ten years 1897-1906 and 1907, the death-rate per 100,000 is as follows:—

	1897-1906.	1907.
Glasgow,	**15**	**16**
Edinburgh,	18	10
Dundee,	16	18
Aberdeen,	13	12
Paisley,	12	47
Greenock,	21	17
London,	28	16
Liverpool,	25	15
Manchester,	18	16
Birmingham,	22	18

Before leaving the information for the City as a whole, it may be observed that the increased activity or prevalence of the disease during the past two years has not been accompanied by any considerable evidence of increase in the virulence of the organism or of malignity of attack. In 1905 the attack-rate per million of the population was 924, and this rose in 1906 to 1,580, and in 1907 to 1,510. But while the case-fatality in 1905 was 14·7 per cent., it fell in 1906 to 10·7, and in 1907 to 10·4. The very considerable increase in the attack-rate in both years, taken together with the sudden decline in the case-fatality, would thus seem to indicate that a very considerable proportion of the cases registered belong to the class which by reason of their mildness would have escaped observation but for a persistent search which was made in invaded households for the organism in the throats of the apparently unaffected members of those families.* The correctness of this interpretation is supported by an examination of Table XX., which shows the death-rate of home and hospital cases during several years. In both groups a considerable decrease in the fatality-rate is shown for the years 1906 and 1907, but the fall is greater in the home cases than in those treated in hospital, and in 1907 the fatality-rate of the home cases is lower than in those removed to hospital, which is contrary to the experience of all the preceding years since the introduction of serum treatment. The decrease in the fatality-rate of both groups of cases during the last four years is as follows:—*home* cases fatality-rate in 1904-5, 19·5 and 17·9, as compared with 13·4 and 9·2 in 1906-7; *hospital* cases fatality-rate in 1904-5, 11·7 and 13·9, as compared with 10·3 and 10·6 in 1906-7.

* See "Diphtheria Contacts," page 56.

TABLE XV.

DIPHTHERIA and Membranous Croup.

In the following Table the number of cases and deaths, with the rate for each and the case-fatality per cent., are stated for a series of years:—

Year.	Cases.			Deaths.			Case-mortality per cent.
	Number.	Rate per Million.	Per Cent. treated in Hospital.	Number.	Rate per Million.	Per Cent. occurring in Hospital.	
1886-90	...	...	...	...	466	...	...
1891	465	822	16·1	131	232	23·7	28·2
1892	575	861	14·1	195	292	15·9	33·9
1893	828	1,228	19·0	246	365	25·6	29·7
1894	967	1,414	26·1	290	424	30·0	30·0
1895	654	944	28·4	137	198	19·0	21·0
1896	601	854	31·6	116	165	30·2	19·3
1897	462	647	32·9	127	178	30·7	27·5
1898	433	592	59·6	113	154	47·8	26·0
1899	465	622	52·3	109	146	31·2	23·5
1900	540	715	59·4	125	165	44·0	23·1
1901	563	739	57·2	115	151	44·4	20·4
1902	617	794	60·1	105	135	61·9	17·0
1903	724	926	71·1	103	132	68·9	14·3
1904	647	824	69·9	91	116	57·1	14·1
1905	726	924	80·0	107	136	75·7	14·7
1906	1,270	1,580	86·5	136	169	83·1	10·7
1907	1,218	1,510	85·6	127	157	87·4	10·4

The distribution of the disease during the year may be followed on Table XVI.

During 1906 the attack-rate exceeded 2 per thousand in Dalmarnock, Springburn, Cowlairs, Anderston, Sandyford, Hutchesontown, and Govanhill; whereas during 1907 it only reached a similar level in Springburn, Anderston, Sandyford, and Kinning Park. There was, however, a tendency towards greater uniformity in distribution in the Eastern Wards—Dalmarnock, Calton, Mile-end, Whitevale, and Dennistoun, and again in the Southern Wards, especially in Gorbals, Hutchesontown, Govanhill, and Langside. It was most prevalent in Springburn and Anderston, and most fatal in Broomielaw, where, however, the numbers are small.

TABLE XVI.

GLASGOW, 1907.—DIPHTHERIA and MEMBRANOUS CROUP.—CASES and CASE-RATES and DEATHS and DEATH-RATES in each MUNICIPAL WARD, with corresponding Death-rates for 1903-06.

MUNICIPAL WARDS.	Death-rates per Million.				1907.			
	1903.	1904.	1905.	1906.	Cases.	Case-rate per Million.	Deaths.	Death-rate per Million.
1. Dalmarnock. ...	157	118	162	320	66	1,323	11	222
2. Calton, ...	128	158	108	83	50	1,328	9	253
3. Mile-end, ...	139	69	185	179	59	1,264	10	217
4. Whitevale, ...	148	60	152	30	61	1,827	6	185
5. Dennistoun, ...	154	88	85	...	67	1,729	3	81
6. Springburn, ...	97	142	119	324	118	2,389	13	288
7. Cowlairs, ...	235	132	162	192	44	1,439	4	131
8. Townhead, ...	75	76	129	78	30	795	3	80
9. Blackfriars, ...	87	...	90	46	43	1,906	2	46
10. Exchange, ...	...	...	...	...	...	...	...	...
11. Blythswood, ...	...	...	...	...	1	275	...	...
12. Broomielaw, ...	120	124	129	...	11	1,205	3	401
13. Anderston, ...	102	240	338	208	87	2,854	8	276
14. Sandyford, ...	113	154	195	400	54	2,132	1	40
15. Park,...	80	...	40	121	45	1,760	1	41
16. Cowcaddens, ...	225	236	80	192	28	764	3	85
17. Woodside,... ...	131	155	90	92	35	802	3	69
18. Hutchesontown, ...	119	121	222	351	72	1,825	12	304
19. Gorbals, ...	137	109	166	251	49	1,359	11	312
20. Kingston,... ...	115	114	231	116	54	1,561	9	265
21. Govanhill,... ...	148	59	30	324	44	1,269	6	173
22. Langside, ...	135	184	83	52	64	1,542	4	98
23. Pollokshields, ...	...	56	56	...	17	917	...	...
24. Kelvinside, ...	106	50	48	...	25	1,079	1	45
25. Maryhill, ...	165	186	231	226	65	1,565	1	25
26. Kinning Park, ...	...	...	...	295	29	2,170	3	224
CITY, ...	132	116	136	169	1,218	1,510	127	157

Seasonal Prevalence.—With regard to the seasonal prevalence of the disease, some information is afforded by the Table XVIII. When taken over a series of years there is a fairly constant increase in prevalence beginning in September and continuing till the following February, while the spring and summer months are periods of diminishing prevalence. During periods of increasing prevalence the maximum incidence is still in the winter months, but in spring and summer the disease is less uniform. During 1907 the disease was relatively more prevalent in April and May than in March, and the numbers registered in August were almost twice as great as those occurring in July.

TABLE XVIII.

GLASGOW.—DIPHTHERIA and MEMBRANOUS CROUP.—NUMBER OF CASES REGISTERED and ANNUAL CASE-RATE per 100,000 LIVING for each MONTH for the PERIODS 1890-1900, 1901-1906, and 1907.

MONTH.	CASES.			ANNUAL CASE-RATE.		
	1890-1900.	1901-06.	1907.	1890-1900.	1901-06.	1907.
January, ...	652	413	145	103	104	215
February, ...	611	359	111	108	96	164
March, ...	586	391	81	93	98	120
April, ...	461	338	88	75	87	131
May, ...	444	313	84	70	78	125
June, ...	377	271	62	62	69	92
July, ...	300	257	44	47	65	65
August, ...	478	315	84	76	79	125
September, ...	608	387	104	100	99	154
October, ...	711	518	150	113	130	223
November, ...	698	505	151	114	131	225
December, ...	649	480	114	103	120	170
Year, ...	6,575	4,547	1,218	89	96	151

Relation of Croup to Diphtheria.—The gradual shrinkage of croup as a cause of death, and its inclusion among true cases of diphtheria, is illustrated in the following Table XIX., which shows the deaths and death-rates from diphtheria and croup separately and together for the period of twelve years. By referring to former Reports the decrease over a longer period may be followed:—

TABLE XIX.

GLASGOW.—DEATHS and DEATH-RATES *per Million* from DIPHTHERIA and CROUP from 1895 to 1907.*

Year.	Deaths.			Death-rate per Million.		
	Diphtheria.	Croup.	Diphtheria and Croup.	Diphtheria.	Croup.	Diphtheria and Croup.
1895	112	73	185	161	105	266
1896	83	54	137	118	76	194
1897	97	48	145	136	67	203
1898	103	29	132	142	40	182
1899	106	17	123	145	23	168
1900	130	19	149	175	25	200
1901	110	13	123	144	17	161
1902	106	21	127	137	27	164
1903	105	13	118	133	17	150
1904	95	9	104	119	11	130
1905	110	11	121	136	14	150
1906	147	9	156	176	11	187
1907	131	6	137	155	7	162

* Registrar-General's Annual Reports.

Age and Sex Distribution.—In former Reports the excessive fatality of diphtheria in infants has been pointed out, and the following Table repeats the illustration:—

GLASGOW, 1907.—DIPHTHERIA and MEMBRANOUS CROUP.—AGE and SEX DISTRIBUTION of CASES and DEATHS, with CASE-MORTALITY.

Age.	Cases.		Deaths.		Case-mortality per cent.	
	Male.	Female.	Male.	Female.	Male.	Female.
Under 1	21	13	9	4	42·9	30·8
1	58	55	12	15	20·7	27·3
2	55	56	10	9	18·2	16·7
3	63	64	12	12	19·5	18·8
4	55	67	9	6	16·4	9·0
5	172	188	13	12	7·6	6·4
10	54	69	1	2	1·9	2·9
15	29	33	...	...	...	...
20	22	50	1	...	4·5	...
25	19	45	...	...	...	...
35	8	13	...	...	...	...
45	1	6	...	...	...	...
55	...	1	...	...	...	...
65	...	1	...	...	...	...
All Ages,	557	661	67	60	12·3	9·8
	1,218		127		10·4	

The variation in the case-fatality of home and hospital cases has already been referred to, and in the following Table the results over a series of years are shown:—

TABLE XX.

GLASGOW.—DIPHTHERIA and MEMBRANOUS CROUP.

YEAR	TREATED AT HOME.			TREATED IN HOSPITAL.		
	Cases.	Deaths.	Case-mortality per cent.	Cases.	Deaths.	Case-mortality per cent.
1891	390	100	25·6	75	31	41·3
1892	494	183	37·0	81	12	14·8
1893	671	183	27·3	157	63	40·1
1894	715	203	28·4	252	87	34·5
1895	468	111	23·7	186	26	13·9
1896	411	81	19·7	190	35	18·4
1897	310	88	28·4	152	39	25·6
1898	175	59	33·7	258	54	20·9
1899	222	75	33·8	243	34	14·0
1900	219	70	32·0	321	55	17·1
1901	241	64	26·5	322	51	15·8
1902	246	40	16·3	371	65	17·5
1903	209	32	15·3	515	71	13·8
1904	195	38	19·5	452	53	11·7
1905	145	26	17·9	581	81	13·9
1906	172	23	13·4	1,098	113	10·3
1907	175	16	9·2	1,043	111	10·6

DIPHTHERIA CONTACTS.

PROPORTION OF PERSONS WITH THE ORGANISM IN VIRULENT FORM, BUT PRESENTING NO CLINICAL SYMPTOMS OF THE DISEASE.

Reference has already been made to the practice of obtaining swabs from the apparently unaffected members of households or Institutions where more than one case of the disease was notified. This resulted in the discovery of 121 persons (equal to 9·5 per cent.) who, at the time of examination, presented no clinical symptoms of the disease, but in whose throats the organism of diphtheria in a virulent form was present. The details are as follows:—

(1) *Proportion in Infected Families.*—In 214 families, representing 777 persons, 341 of whom were under ten years of age, the organism was recovered in 12 per cent. of those under ten, and in 8·7 per cent. of those over ten. The proportion of apparently unaffected persons in infected households in whose throats the organism was present may thus be stated at 10 per cent.

(2) *Proportion in Invaded Schools or other Institutions.*—The throats of 484 children in schools and other Institutions where cases of diphtheria had occurred were similarly examined. 312 of these were under ten years of age, and 10·9 per cent. yielded a positive result; while of 172 over ten years, only 4·7 per cent. were positive. Over all, the number of positive results was equal to 8·7 per cent.

ENTERIC FEVER.

470 cases of enteric fever were registered during 1907, of which 434, or 92·3 per cent., were treated in hospital. The number of deaths from this disease was 92, representing a death-rate of 0·114 per 1,000 living. The case-rate for the year was 583 per million living, compared with 483 in 1906, and the case-fatality-rate was 19·6 per cent. The number of cases occurring was thus greater than in 1906, while the fatality-rate was somewhat less. The excessive fatality which accompanied the lessened prevalence of the disease in 1906 is worthy of note, as indicating a high degree of virulence under conditions adverse to its wide prevalence.

1881-90,	... ...	·230 per 1,000.
1891-1900,	... ...	·215 ,,
1901,	... ...	·275 ,,
1902,	... ...	·142 ,,
1903,	... ...	·182 ,,
1904,	... ...	·107 ,,
1905,	... ...	·067 ,,
1906,	... ...	·102 ,,
1907,	... ...	·114 ,,

The following Table gives the attack-rate and death-rate per million and the case-mortality for each year since 1891, together with the proportion of cases removed to hospital:—

TABLE XXI.

GLASGOW.—ENTERIC FEVER, 1891-1907.

Year.	Cases.			Deaths.			Case-mortality per cent.
	Number.	Rate per Million.	Per cent. treated in Hospital.	Number.	Rate per Million.	Per cent. occurring in Hospital.	
1891	784	1,386	59·8	123	218	69·9	15·7
1892	590	884	58·3	101	151	67·3	17·1
1893	703	1,043	60·9	120	178	68·3	17·1
1894	810	1,184	72·2	151	221	76·2	18·6
1895	797	1,150	74·5	122	176	73·0	15·3
1896	691	982	71·1	145	206	72·4	21·0
1897	905	1,265	74·6	174	243	78·8	19·2
1898	1,212	1,657	86·6	228	312	86·0	18·8
1899	1,080	1,445	89·4	178	238	84·3	18·4
1900	1,013	1,340	85·1	158	209	85·4	15·6
1901	1,257	1,650	85·1	210	275	80·1	16·7
1902	698	899	90·7	110	142	88·2	15·8
1903	944	1,207	92·2	142	182	91·5	15·1
1904	628	800	91·6	84	107	89·3	13·4
1905	447	569	90·8	53	67	84·9	11·9
1906	388	483	92·5	82	102	87·8	21·1
1907	470	583	92·3	92	114	88·0	19·6

For comparison with other towns the following particulars are given:—

DEATH-RATE PER 100,000 FROM ENTERIC FEVER IN CERTAIN LARGE TOWNS OF SCOTLAND AND ENGLAND FOR SEVERAL PERIODS.*

	1897-1906.	1907.
Glasgow, ...	**19**	**12**
Edinburgh, ...	9	3
Dundee, ...	10	3
Aberdeen, ...	6	5
Paisley, ...	26	8
Greenock, ...	24	11
London, ...	11	4
Liverpool, ...	22	13
Manchester, ...	15	5
Birmingham, ...	17	9

* Registrar General's Annual Report.

It will here be observed that during the past year the death-rate from enteric fever was higher in Glasgow than in any other town in Scotland, while among the English cities quoted it is only exceeded by that of Liverpool.

The Ward distribution of the cases is shown in the following Table. Relatively to population, the disease was most prevalent in Blackfriars, Anderston, and Kingston.

TABLE XXII.

GLASGOW, 1907.—ENTERIC FEVER, CASES AND CASE-RATES, AND DEATHS AND DEATH-RATES, IN EACH MUNICIPAL WARD FOR THE PAST FIVE YEARS.

MUNICIPAL WARDS.	Death-rates per Million.				Cases. 1907.		Deaths.	
	1903.	1904.	1905.	1906.	Number.	Rate per Million.	Number.	Rate per Million.
1. Dalmarnock, ...	256	59	162	180	34	687	11	222
2. Calton, ...	282	79	81	139	21	558	6	169
3. Mile-end, ...	394	93	46	157	27	579	4	87
4. Whitevale, ...	296	121	91	91	24	719	3	93
5. Dennistoun, ...	154	204	85	138	19	490	3	81
6. Springburn, ...	121	118	71	116	27	547	2	44
7. Cowlairs, ...	134	66	65	64	22	720	8	262
8. Townhead, ...	175	76	154	105	13	344	2	53
9. Blackfriars, ...	260	133	45	46	38	1,685	9	417
10. Exchange, ...	448	...	...	...	1	401	1	491
11. Blythswood, ...	...	...	...	...	2	550	...	...
12. Broomielaw, ...	120	...	129	397	7	767	...	...
13. Anderston, ...	271	172	34	35	38	1,247	3	103
14. Sandyford, ...	75	77	39	80	14	553	2	80
15. Park, ...	80	79	...	201	8	313	2	81
16. Cowcaddens, ...	450	157	80	82	18	491	5	141
17. Woodside, ...	66	200	...	69	27	619	4	92
18. Hutchesontown, ...	238	241	123	200	23	583	4	101
19. Gorbals, ...	164	55	55	56	16	444	3	85
20. Kingston, ...	86	86	116	58	38	1,099	4	118
21. Govanhill, ...	89	30	30	29	12	346	1	29
22. Langside, ...	67	...	28	...	6	145	1	24
23. Pollokshields, ...	118	...	...	169	2	108	1	54
24. Kelvinside, ...	53	50	...	46	9	388	1	45
25. Maryhill, ...	27	160	26	50	15	361	3	75
26. Kinning Park, ...	...	...	...	74	9	673	2	150
— Institutions & Harbour,	...	...	...	...	...	...	7	...
CITY, ...	182	107	67	102	470	583	92	114

Death-rate in "Hospital" and "Home" Cases Compared.

The following Table is again introduced to continue the contrast in fatality between cases treated at home and in hospital. Since 1901 the hospital death-rate has been continuously below that of the home cases. The case mortality for 1907 of those treated at home was 30·6 per cent. against 18·7 per cent. of those treated in hospital:—

TABLE XXIII.

Glasgow.—ENTERIC Fever.

Year.	Treated at Home.			Treated in Hospital.		
	Cases.	Deaths.	Case-mortality per cent.	Cases.	Deaths.	Case-mortality per cent.
1891	315	37	11·8	469	86	18·3
1892	246	33	13·4	344	68	19·8
1893	275	38	13·8	428	82	19·2
1894	225	36	16·0	585	115	19·7
1895	203	33	16·3	594	89	15·0
1896	200	40	20·0	491	105	21·4
1897	230	37	16·1	675	137	20·3
1898	162	32	19·8	1,050	196	18·7
1899	114	28	24·6	966	150	15·5
1900	151	23	15·2	862	135	15·7
1901	187	42	22·5	1,070	168	15·7
1902	65	13	20·0	633	97	15·3
1903	73	12	16·2	871	130	14·9
1904	53	14	26·4	575	70	12·2
1905	41	8	19·5	406	45	11·1
1906	29	10	34·5	359	72	20·1
1907	36	11	30·6	434	81	18·7

Outbreaks Associated with Infected Milk Supplies.

In two instances groups of cases were associated with infected milk supplies. The first of these was of a local character, and occurred early in the year. The following description of the facts is taken from the report submitted to the Committee on Health:—

(Extract from Minute of date 18th March, 1907.)

ENTERIC FEVER.—SPRINGBURN.

From 16th February onwards a series of thirteen cases of enteric fever occurred in the Springburn District, including one beyond the municipal boundary.

Their probable cause and relationship is interesting, as illustrating the existence of a small stream of infected milk in a volume otherwise free from suspicion.

The first case of the series sickened on 28th January; five others on 30th January, 6th, 10th, and 12th February, and 6th March; while six more sickened on 4th, 15th, and 16th February, there being two on each of these dates. In no family was there more than one sickening, and the case which sickened outside the municipality dates from 3rd February.

Two circumstances at once attached suspicion to one portion of the milk supply. In Ward VII., in which all the cases save four occurred, there were only four other cases registered from the beginning of the year, and two of these occurred in one family. Ward VI. had three cases obtaining milk from the infected supply, and six other cases in which the milk supply was obtained from four different dairies.

A further peculiarity of the distribution was that the supply which ultimately came to be suspected was driven direct to Glasgow to three dairies in one ownership, and all the cases save one occurred in the dairy which formed the middle one of the group.

Most striking of all, however, was the occurrence of enteric fever in one member of the purveyor's family; and it was afterwards discovered that the domestic milk supply of this family was obtained from the suspected source.

A visit to the farm in company with the officers of the rural Local Authority revealed no existing disease, and no objection could be taken to the structure and condition of the premises; but it was learned that a servant had been in the employment of the milk producer during the first fortnight of the year, and had suffered from an illness which had confined her to bed for part of that time. This girl, who had been engaged as the milker, was subsequently traced, and a sample of her blood being examined, it responded to a Widal test in a dilution of 1-50 in half an hour.

The farm in question had a gravitation water supply, and this circumstance, together with the existence of a sewerage system, would seem to explain the intermittent character of the infection which reached the milk.

On discovery of the reaction in the blood of the milker, disinfection of the farm premises was carried out, and no further cases have been recorded.

Flemington Outbreak.

Although the epidemic phase of this outbreak did not display itself until early in 1908, the complete report is here introduced, as several spontaneous cases had occurred during the preceding December. The outbreak is noteworthy from an administrative standpoint, because it formed one of the early illustrations of a virulent epidemic disease associated with the recognition of a "carrier" case, and it served further to bring prominently before the public mind the defects in existing legislation, and the consequent danger to milk supplies, from the absence of any provision for compulsorily notifying disease of any kind directly it occurs in the person of a milk-worker.

REPORT ON OUTBREAK OF ENTERIC FEVER IN GLASGOW ASSOCIATED WITH THE RECOGNITION OF A CARRIER CASE.

(1) Report by Medical Officer of Health.

This outbreak extended over a period which began early in December, 1907, and continued into the third week of January, 1908.

In notes appended to the reports submitted to the Committee on Health for the fortnights ending 4th and 18th January, the main features of the distribution of the disease, as disclosed by the notifications received, were described. These notes necessarily lacked the concreteness of a continuous narrative, from the circumstance that much desirable information was only in course of being collected, and some, which was already in our possession, failed to explain the ascertained distribution of the disease.

Indeed, much of the earlier information as to the channels of distribution of the several portions of the milk supply had to be revised in the light of subsequent developments of the outbreak, and in one important particular it had to be entirely amended.

This was especially the case with regard to the source of some of the milk distributed prior to 29th November by Cart D. of the accompanying diagram.

Now that the outbreak is over, a more complete review of the whole circumstances is possible.

The Cases as Notified.

The columns at the bottom of the appended diagram* show these as received up till 21st January. The notifications received after that date added two primary cases, sickening on 16th and one on 19th January, and several others who had sickened prior to 13th January, or were secondary to cases in already invaded households. The latest sickening among the Partick consumers was on 10th January.

The first notification was received on 17th December, two others followed on 18th and 19th, and again on the 23rd and 27th two more were received. At this point an interval of six days occurred, but on 3rd January a series began which was maintained practically unbroken until the outbreak ceased.

The interval is important. It separates the notification of five cases irregularly distributed over eleven days from a series of others which present the true characters of a milk-borne epidemic, in the rapid increase in the numbers notified daily and in the numbers sickening simultaneously.

The significance of this interval will be better appreciated when considered in the light of the dates of sickening of the cases notified before and after it occurred.

The Dates of Sickening.

These are shown in the diagram in a series of columns arranged immediately over the chart of notifications. They include all the cases sickening in Glasgow and Partick, but not the thirteen which sickened after leaving Glasgow. The Partick cases are distinguished by shading from those occurring in Glasgow.

The five Glasgow cases notified during December are shown as sickening between the 8th and 14th of the month. One case had already occurred among the Partick consumers on 5th December, and another sickened on the same day as the first two Glasgow cases. In the early part of December the sicknesses are infrequent and irregular, and it is only after the close of the week ending 21st that they begin to be of daily occurrence. Indeed, the mass of infection represented by the sicknesses which occurred after this date and reached their maximum daily number towards the middle of the fortnight ending 11th January is in striking contrast with the irregular distribution of those sickening early in December.

It suggests two distinct waves of infection, and subsequent enquiry has shown not only that this would appear to have occurred, but that the source of each is fairly distinguishable.

The Number of Families supplied.

All these cases were being supplied by milk from Flemington Farm, which during December was distributing about 260 gallons of milk and cream daily. None of this milk was produced at the farm, and 40 gallons of the total were delivered to Knightswood Hospital and the district of Temple direct from one of the sources of supply without passing through Flemington Farm.

The milk thus received at the farm amounted to about 220 gallons. Of this quantity about 193 gallons were distributed by three carts to customers in Kelvinside, Hillhead, and Dowanhill, and by a carrier from the farm to houses in the immediate neighbourhood, while 17 gallons, of which 1 was cream, were sold to a dairy in Partick, and 10 gallons to the dining-room attached to the Hydepark Locomotive Works at Springburn.

The carts, which are distinguished in the diagram by the initials of the drivers, supplied between 400 and 500 families, 128 being supplied by Cart D., 118 by Cart M'G., and about 200 by Cart M'A. But in addition to these 446 families, it is known that each cart had customers who paid for milk as they received it, so that no record of their number was kept.

The quantity of milk delivered to individual households varied from 1 to 12 pints, and this variation in the quantity consumed is reflected in the number of houses in which multiple cases occurred.

* The diagram includes all the cases notified as occurring in Glasgow and Partick.

The Number of Persons attacked.

Excluding four cases which were secondary to others occurring at an earlier date in a corresponding number of households, 92 cases were registered as occurring in 79 households of consumers in Glasgow, there being 10 households in which multiple primary infections, 23 in number, occurred.

Among the Partick consumers Dr. Brown tells me that 21 cases occurred, and I have information regarding 13 others, who only sickened after leaving Glasgow.

In 8 of these 126 cases the attack proved fatal.

The number of consumers of this milk in the 500 households receiving it is not known, but the number of inmates therein may be put at not less than 2,500, and on this basis the attack-rate lies between 4 and 5 per cent., while the case fatality-rate has been equal to 5·5 per cent.

The Sources of the Milk Supply.

The milk distributed from Flemington Farm was received from five others, and the quantities from each were as follows:—

K. (Paisley), - -	70 gallons.	A. (Balfron), - -	70 gallons.
S. (Anniesland), -	60 „	G. (Beith), - -	20 „
	Parkhouse, - -	40 gallons.	

A sixth farm had ceased sending milk on 5th December. As the milk from Balfron and Beith arrived too late for the morning's delivery of the day of arrival it was sterilised. The milk of the three remaining farms, K., S., and Parkhouse, was not sterilised before the morning delivery, and whether any of it was ultimately so treated depended on the daily fluctuation in the demand. The channels by which the milk from these several sources reached the consumers will emerge in considering the order in which the several deliveries became implicated.

The Incidence of Attacks on the several Deliveries from Flemington.

All the cases notified between 17th December and 6th January obtained their milk from Cart D. Our information at this time was that the morning milk of this cart had been obtained from the Anniesland farm prior to 29th November, and from the Paisley farm thereafter. The first sickening, however, occurred in Partick on the sixth, and three others, including two in Glasgow, on the ninth day after this change had taken place, and as the duration of the incubation period of the disease is, in the majority of cases, about fourteen days, it was provisionally regarded as unlikely that the Paisley farm milk was the source of infection. This opinion was ultimately established by a report from the Medical Officer of Renfrewshire that no illness was present there.

The Anniesland farm milk, at the beginning of the enquiry, was being distributed partly in the district of Temple and partly in Hillhead and neighbourhood.

The portion delivered in Temple was sent direct from the Anniesland farm, whereas that which was delivered in Hillhead was taken, in the first place, to Flemington Farm, and thereafter sent out in carts other than Cart D.

In neither of these sections of its distribution was there evidence of infection.

But when it became apparent early in January that sicknesses were also occurring among the customers of the other carts the information first given was corrected, and we were told that the portion of the Anniesland farm milk distributed by Cart D. prior to 29th November was frequently supplemented by milk from Parkhouse. This is more fully described hereafter.

It was possible, of course, that the portion of the Anniesland milk distributed by Cart D. prior to 29th November had become exposed to contamination only after reaching Flemington Farm, but the early enquiries definitely excluded from suspicion both the family and resident employés at Flemington Farm, as well as the driver of the cart and the boys who accompanied it as carriers.

On 6th and 7th January, however, two sickenings were notified among the customers of Cart M'G., on 9th January one was notified on Cart M'A., and on the 11th January two were notified on the service of the boy carrier from the farm, and one on the Hydepark portion of the supply.

And if, instead of the dates of notification, we take those of sickening as shown on the diagram, it will be seen that, while cases began to occur among the customers of Cart D. as early as 5th and 8th December, none occurred among the customers of the other delivery services until the 19th, 23rd, 25th, and 30th December respectively.

It thus became important to discover whether any antecedent change had occurred in the distribution from Flemington Farm which would explain the extension of infection from Cart D. to the other deliveries, which the notifications received between 6th and 11th January disclosed.

For this purpose it is necessary to revert to the information first obtained regarding the farm from which Cart D. obtained the milk for its morning delivery.

As already stated, this was said to have been from the Anniesland farm prior to 29th November, and this in a sense expressed the general practice. But when revised, in view of the attacks occurring among the customers of the other carts, it was ascertained that the Anniesland milk fell short of the quantity required for Cart D.'s morning delivery about three times out of seven, and was on these occasions supplemented by milk from Parkhouse Farm in quantities varying from 8 to 16 gallons out of a total of about 40 gallons obtained from this source.

Moreover, as it was the object of the purveyor to supply as much non-sterilised milk as was available for the delivery of Cart D., the remaining quantity of Parkhouse milk was, by preference, reserved for the mid-day delivery of this particular cart, until the introduction of Paisley milk on November 29th set free Parkhouse milk for distribution also by the other carts in their morning deliveries.

Indeed, until after November 29th, the other carts, in these morning deliveries, mostly distributed sterilised milk from the other farms.

On the hypothesis, therefore, that the Parkhouse milk was the vehicle of infection, the limitation of the attacks to the customers of Cart D. at the beginning of the outbreak and the ultimate implication of all the delivering channels would have reasonable explanation.

The Action which followed Notification.

When it was found that a second case of enteric fever had occurred among the Glasgow customers of Cart D., and that this cart also delivered milk in Partick, enquiry was made at the Medical Officer there, when it was ascertained that two Partick consumers had sickened on 5th and 8th December respectively.

A visit to the farm at Flemington elicited much of the information already related, and leaving aside many incidental circumstances which required investigation, but proved ultimately to have no bearing on the cause of the outbreak, the position of the question on the afternoon of 19th December was as follows:—

(1) Five cases had occurred among the customers of Cart D.

(2) The milk delivered by this cart at the probable date of infection of these patients was said to have been obtained from the Anniesland farm, which, however, presented no feature which would explain the infection, and was, indeed, distributing milk elsewhere without causing illness.

(3) The other channels of distribution from Flemington were, so far as then known, free from infection.

(4) It was stated that an inmate of Parkhouse Farm was ill of pneumonia, but that the milk from this farm was not being delivered to the infected families.

There remained the possibility that an explanation of the infection so definitely limited to Cart D. might be found in the houses of some of the carriers attached to this cart, and, pending their visitation, all the information thus collected was sent to the officers of the Local Authorities of the districts in which the contributory farms were situated, as being the most direct way of getting quickly at possible sources of contamination there. This was communicated to some by telephone on the evening of 19th December, and to others on the following day. Meanwhile the farmer undertook to sterilise the balance of the milk not then being so treated.

All the farms save Parkhouse were thereafter reported free from infection, and the

steps which led to the recognition of the disease there will best be conveyed in the following extract from Dr. Wilson's report:—

"The circumstances under which the outbreak came under my notice are of such importance that they will be somewhat fully described. On the 20th December last information was received by telephone that some five cases of enteric fever had occurred in the city and in Partick, associated with a particular city milk supply; that one of the sources of this milk supply was Parkhouse Dairy Farm, Possilpark, tenanted by Robert Gilmour. Although the information then elicited was to the effect that Gilmour's milk was not distributed to the families affected, enquiries were at once made by the Assistant Medical Officer, Dr. Hislop.

"On the 21st December he visited the farm, and found one of the inmates (Janet Gilmour) had been confined to bed from 10th December, and was attended by a medical practitioner, who was at once sought for. Not being found, Dr. Hislop left a note explaining the object of his visit, along with an outfit for taking a blood specimen. A reply letter, received on the 23rd, explained that the patient was first seen on the 12th December, when the symptoms were those of influenza; on the 13th the symptoms were similar; on the 14th the temperature had almost fallen to normal; and on the 16th and 18th was practically normal. The outfit left by Dr. Hislop for taking specimens of blood had not been used by the medical practitioner, as he did not consider that was necessary. As the symptoms described in the letter did not exclude typhoid fever, we wired the medical practitioner to send a specimen of blood from the patient. On the 24th December this was obtained, with the usual clinical information, which stated that the patient now had pneumonia on right side. On examination the blood specimen gave a good 'positive' result. Dr. Hislop then had a consultation with the medical practitioner, who left the case in his hands. He then went to the farm, and had the patient removed to Lightburn Hospital that evening. Since admission to hospital the patient has shown the clinical symptoms of pneumonia, and but for the 'positive' blood test the illness could hardly be diagnosed as typhoid fever.

"It has long been known and taught that typhoid fever occurs in forms which, without bacteriological aids, are most difficult to diagnose. The foregoing narrative illustrates the difficulty in the recognition of infectious disease. * * *

"The usual precautions were taken in the matter of disinfection. The city authorities were at once informed, and several interviews and joint-inspections have taken place since then."

Relation of the Parkhouse Illness to the Outbreak in Glasgow.

We have now to consider the relationship of this case at Parkhouse to the outbreak in Glasgow, and particularly to the two waves of infection which have been suggested.

The patient at Parkhouse remained unrecognised as suffering from any infectious disease from 7th to 24th December, and it is reasonable to associate her illness with the true epidemic incidence in Glasgow, which culminated towards the middle of the fortnight ending 11th January. But it will not explain those prior to 14th December, and would only explain those sickening on 19th-20th December by assuming the coincidence of an unusually early accession of infectivity in the Parkhouse patient and an unusually short period of incubation in the four cases then sickening. But with regard to attacks which developed after the week ending 21st December there is no such difficulty, and the illness at the farm may be regarded as sufficient to explain those occurring among the consumers after this date.

But the Parkhouse patient is apparently one of the earlier group of sicknesses which began on 5th December, and cannot, therefore, have been the source of infection of the other members of this group.

Coincident but independent sources of infection for herself and the others might, of course, be suggested, but it is more important to consider whether evidence exists to support the suggestion that she sickened because she was herself a consumer of milk distributed from Flemington Farm.

That she was in this sense an occasional consumer seems likely, from the circumstance that it was part of her brother's morning work, on his return journey from Flemington, after delivering his milk there, to take about 10 gallons to the Hydepark Locomotive Works Cooking Depot, and any occasional surplus not required at the depot was taken on to Parkhouse by him, and there consumed.

If, then, the Parkhouse illness could be ascribed to this returning stream, the larger quantity delivered at Hydepark Works would be likely also to have produced somewhat similar results. And while it is true that cases did ultimately develop among the consumers at Hydepark, the first sickness there began only on 30th December, or fully three weeks later than the Parkhouse illness. In other words, the Hydepark cases belong to the later epidemic wave, and not to that which began on 5th December.

And, as matter of fact, it was only after unsterilised milk from Parkhouse began to be occasionally delivered to Hydepark that cases developed among the consumers there, and this date can be definitely fixed as not earlier than 5th December, and may have been some days later.

The Position of the Parkhouse Illness among the First Group of Cases.

Although occurring contemporaneously with the early sickenings among the Partick and Glasgow customers of Flemington Farm, it may be suggested that the patient at Parkhouse was infected from a different source. This seems scarcely tenable, in view of the fact that the others were on a common milk supply, that this was occasionally at least obtained from Parkhouse Farm, and that the farmer's family there used their own milk. Infecting material at the farm gaining access to this milk before it was despatched to Flemington would explain both the Parkhouse case and the others. But of the source of this the evidence was not immediately forthcoming.

Question of a "Carrier" Case as accounting for the First Group.

The relation between the excreta of enteric fever patients and the spread of the disease has long been recognised, and the discovery that the urine might also transmit it was added in time.

It has only quite recently been shown that in a limited proportion of persons recovered from the disease the bacillus may maintain a prolonged existence—in most cases apparently in connection with some disorder of the gall-bladder—and, being voided by the bowel, become capable from time to time of transmiting the disease to others.

In the present outbreak the recognition of such a case in the person of a milker at Parkhouse, *prior to the occurrence of the first group of cases in Glasgow*, is entirely due to the energy with which Dr. Buchanan applied himself to an investigation of the bacteriological aspects of the outbreak, and the report by him, which is appended hereto, is deserving of careful perusal.

In the circumstances which he describes, the interrupted sequence of the early cases is explained, while the secondary or epidemic wave is seen to arise because one of the cases arising from this chronic carrier was member of a family supplying portion of the milk which Flemington Farm distributed.

The Application of Existing Legislation to the Circumstances described.

Prevention of Infection.

(1) *Dairies, Cowsheds, and Milkshops Order, 1885.* Article 9 of this Order is as follows:—

> "It shall not be lawful for any person following the trade of cowkeeper or dairyman or purveyor of milk, or being the occupier of a milk store or milk shop—
>
> > "(*a*) To allow any person suffering from a dangerous infectious disorder, or having recently been in contact with a person so suffering, to milk cows or to handle vessels used for containing milk for sale, or in any way to take part or assist in the conduct of the trade or business of the cowkeeper or dairyman, purveyor of milk, or occupier of a milk store or milk shop, so far as regards the production, distribution, or storage of milk; or

"(*b*) If himself so suffering, or having recently been in contact, as aforesaid, to milk cows, or handle vessels used for containing milk for sale, or in any way to take part in the conduct of his trade or business, as far as regards the production, distribution, or storage of milk,

until in each case all danger therefrom of the communication of infection to the milk or of its contamination has ceased."

If it be held that this article implies that a dairyman must take steps to inform himself of the nature of every illness affecting members of his household or dairy staff, it has never been so applied.

And in the present case it would seem to be inapplicable, for the dairyman at Parkhouse did not know, and the medical attendant did not suspect, that the illness there was enteric fever.

Power to stop Infected Milk Supplies.

(1) *Glasgow Police (Amendment) Act, 1890, Section 18.*

(2) *Public Health (Scotland) Act, 1897, Section 60.*

The object of both sets of clauses is to prohibit the sale of infected milk, or of milk which is likely to become infected, owing to the existence of some condition which makes this probable, but they differ in the methods by which this may be accomplished.

They can only come into operation when evidence already exists that milk has become contaminated or that disease is likely to be spread by it.

These requirements can only be satisfied by the occurrence of cases among the consumers, or the discovery that disease exists on dairy premises, and is likely to spread therefrom.

Glasgow Police (Amendment) Act, 1890, Section 18, proceeds on the assumption—

(1) That milk is being brought within the city from any farm, dairy, or place beyond it in which any person is suffering from infectious disease; or

(2) That infectious disease is being spread, or is likely to be spread, by the sale of milk from any farm or dairy within or beyond the city, and that the milk thereof is being sold at the risk of communicating disease; and provides in either case that—

(*a*) The Medical Officer shall certify to the Procurator-Fiscal;

(*b*) Who shall then apply to a Magistrate or the Sheriff for an order to prohibit the sale of the milk so brought, from and after due intimation of such order; and

(*c*) That this prohibition shall continue until the person affected has been removed, or shall have recovered from such disease, and until the premises and bedding have been disinfected, and the Medical Officer certifies that the premises are free from infection and *in a proper sanitary condition.*

The provision which is here italicised reflects the condition of county sanitary administration at the time the Act was drafted.

The clause was intended to meet a condition of things which the formation of County Councils and the appointment of County and District Medical Officers superseded, and this change in administrative methods was expressed in the corresponding clauses of the Public Health Act of 1897.

Indeed, the procedure as outlined in the Glasgow clause was never followed after the Act was passed, because it was found more expeditious to communicate direct with the County Medical Officers, and through them, or in co-operation with them, to get the source of infection dealt with when it could be discovered.

Moreover, the provision that the sale of milk shall not be renewed until the Medical Officer of the City can certify that the premises are *in a proper sanitary condition*, if applied to dairy premises beyond the city boundaries, is also contrary to the spirit of administration, which regards each Local Authority as responsible for the structural condition of its own dairies and cowsheds.

Public Health (Scotland) Act, 1897, Section 60—

Sub-section (1) deals with cases where the dairy from which the suspected milk comes is within the district where the disease is occurring, while Sub-section (2) deals with those cases where the dairy is situated in the district of another Local Authority.

Under Sub-section (1) the Medical Officer is to inspect the dairy and report to his own Local Authority, while under Sub-section (2) he must forthwith intimate the facts within his knowledge to the Local Authority of the district in which the dairy from which the milk is obtained is situated. This latter authority shall thereafter have the dairy examined by their own officers, and shall finally meet to consider whether an order prohibiting the sale should be made.

Here again the common sense of administrative method has found it to be more expeditious to go at once to the executive officers of the Local Authorities concerned, and this course was followed in the present instance. It will be apparent, however, that both clauses proceed on the assumption that evidence exists—that is, that disease is being spread, or is likely to be spread. Whatever preventive action they can have is confined merely to limiting the results, because no argument for prohibiting a milk supply could be based on the general allegation that milk is a ready carrier of disease in the absence of some concrete illustration of it. It must be supported by some evidence that consumers are being attacked, or are likely to be attacked, because some probable source of infection threatens the milk stream, and for the discovery of such there is at present no machinery until the effects display themselves in illnesses among the consumers.

In the present outbreak Flemington Farm may be said, in a sense, to come within the meaning of both sub-sections of Section 60.

It supplied milk in Partick as well as in Glasgow, but of itself it produced none, and was, indeed, only the distributor of milk received from five farms, all outside the area of its own Local Authority. With regard to these, therefore, it was in the position contemplated in Sub-section (2), and all the information which the first day's inquiry elicited was communicated to the officers of various Local Authorities—to some by telephone the same evening, to others by letter or telephone on the following day.

But in relation to Sub-section (1), Flemington was also in the position of a dairy distributing the milk of five contributory farms, and having cases of illness within its own district, associated with a limited portion of its delivery.

On the evening of 19th December the officers of the Local Authority knew this, but their information also was that the milk said to have been distributed by the implicated cart at the probable date of infection of the cases then known to have occurred was obtained from a farm, which was ascertained to have no illness on the premises or amongst its workers, and was indeed also supplying milk to another district free from disease. On the other hand, illness, said to be pneumonia, was reported at another farm whose milk at the time was said to be distributed by carts, whose customers were not being attacked.

Any action, therefore, under Sub-section (1) on the information then available—the element of time being left aside—must have been directed against all the five farms indiscriminately, and for which no argument could have been advanced, or have selected the wrong one.

As has been stated, the action which was taken offered the most direct way of getting quickly at the source of contamination.

It is the necessity of being compelled to wait for evidence of disease which constitutes the defect of these clauses. They were not devised to protect milk from contamination, but only to prohibit its continued distribution when evidence is already forthcoming that it has become, or is in danger of becoming, contaminated

It is the absence of any provision compelling a dairyman with disease on his premises to intimate the fact to the Local Authority of his own district, and to leave with them the responsibility of deciding whether he may safely continue his business, which seems to me to be the defect prominently established by the present outbreak.

Appended are two tables showing the age and sex incidence of attack, and the numbers sickening on each distributing service in Glasgow

Age and Sex Incidence.

Age Periods.	Males.	Females.
0-5	2	3
5-10	3	1
10-15	3	2
15-20	5 (1)	5
20-25	5 (1)	21 (1)
25-35	10 (6)	20
35-45	5	2
45-55	—	3
55-65	—	2
	33	59

The figures in brackets indicate the cases in connection with Hydepark Dining Room.

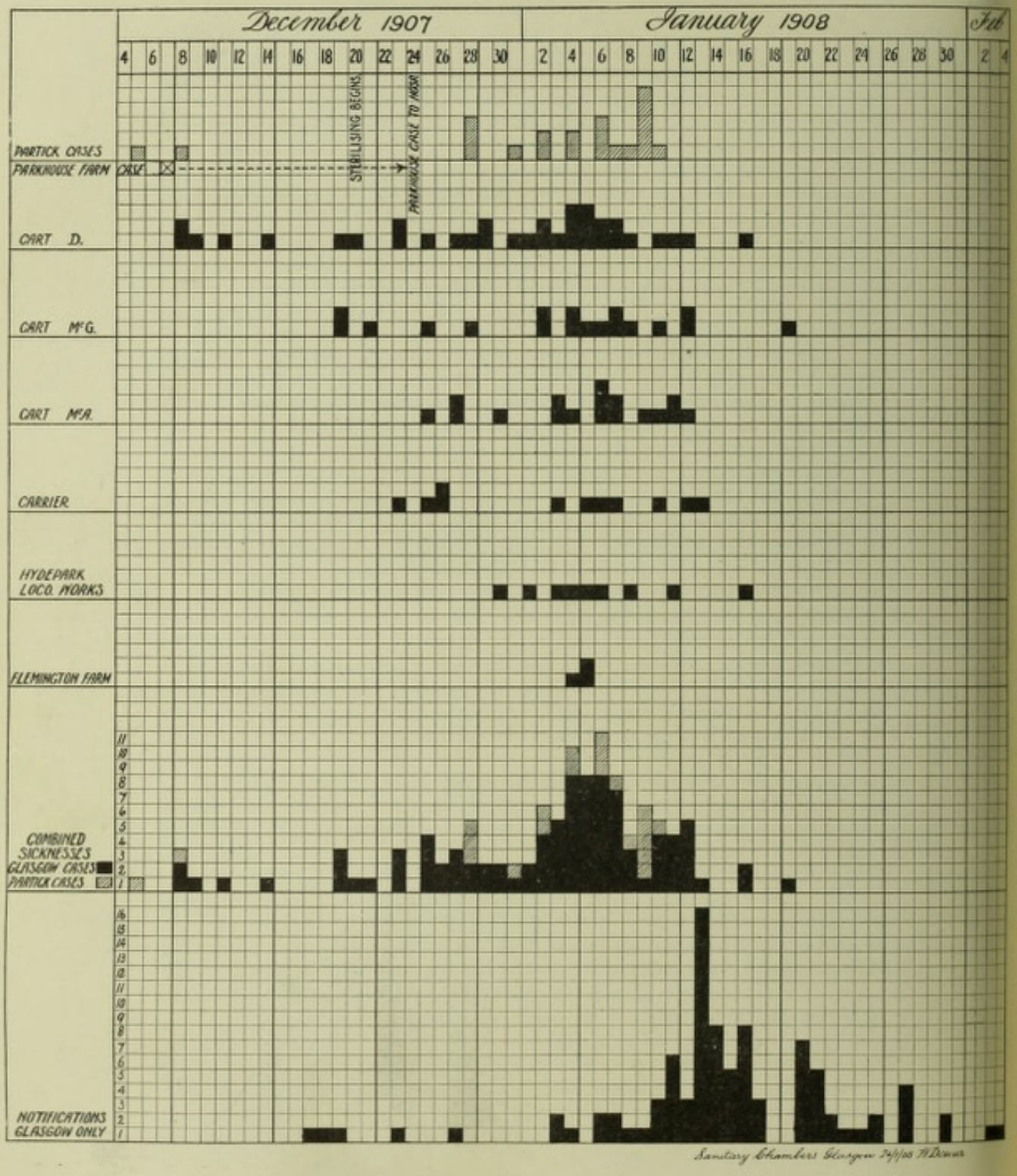
Numbers Sickening on each Distributing Service in Glasgow.

D.'s cart, ...	33 cases.
M'A.'s cart, ...	17 ,,
M'G.'s cart, ...	18 ,,
Carrier from Flemington Farm, ...	12 ,,
Hydepark Dining Room, ...	9 ,,
Flemington Farm, ...	3 ,,
	92 cases.

A. K. CHALMERS.

GLASGOW. ENTERIC FEVER.

DATES OF SICKNESSES IN SEVERAL SERVICES.



(2) On the Bacteriological Aspects of the Outbreak.

In connection with the epidemic of enteric fever in Kelvinside, bacteriological enquiries were undertaken with the view of discovering the source of infection, and I have now to report the result of the investigation as applied to Parkhouse Farm. Two lines of investigation were followed—(1) the examination of the farm premises and (2) the examination of the milkers.

(1) *The Examination of the Farm Premises.*—In association with the Medical Officer of Health for Lanarkshire, the farm was visited, and sixteen samples were taken from drains, water-tubs, milk dishes, and the immediate surroundings of the steading. The material of each sample afforded some probability of containing the bacillus of enteric fever (bacillus typhosus), as a derivative from the patient who had been in the farm-house from the 7th to the 24th December. Various methods of culture favourable for the isolation of the bacillus typhosus were employed, but in every instance the results were *negative*.

(2) *The Examination of the Milkers.*—This was undertaken with the view of determining whether anyone of the milkers might possibly be an unsuspected carrier of infection, especially as the circumstances attending the outbreak indicated the existence of some source of infection quite independent of, and antecedent to, the patient at the farm. The source of infection, wherever it might be located, was clearly responsible for the first eight cases at least of the epidemic, and amongst these early cases the patient at the farm must be included.

On making enquiries at the farm, attention was attracted to a milker, a young man, who had suffered from an obscure illness consistent with enteric fever about three years ago, and who had some possible association, on more than one occasion during 1907, with enteric fever outbreaks. It was found, however, that any suspicion attaching to this milker was soon set aside by the bacteriological tests, which entirely failed to substantiate it.

Subsequently it was discovered by Dr. Wilson in the course of his investigations at the farm that another milker, an elderly woman, had a history of previous associations with enteric fever which attached suspicion to her with still more probability as a source of the infection which had contaminated the milk.

This milker suffered from enteric fever, along with most of her family, sixteen years ago, and has now and again since that time been associated more or less closely with outbreaks of illness which proved to be enteric fever. She was taken into Lightburn Hospital for a few days in order that reliable specimens of the dejecta and urine might be obtained for bacteriological examination. Dr. Wilson very kindly afforded every facility for a thorough investigation by supplying as many specimens as were required for the bacteriological tests. These tests have resulted in the discovery of the bacillus of enteric fever in the dejecta, and in establishing the existence of a source of infection which, doubtless, directly accounted for the early cases of the outbreak, and indirectly gave rise to the epidemic wave. The bacillus did not appear in great number in the dejecta, a rough estimation computing it at 5,000 per cubic centimetre. Her blood gave a positive Widal reaction with the laboratory strain of bacillus typhosus.

It may be observed that bacteriological research has revealed the fact that persons passing through an attack of enteric fever, as a rule, give off the infection (the bacillus typhosus) by the intestine, and frequently also by the urine, during some stage of the illness. The bacillus may appear in the stools as early as the first day of illness, although the largest percentage of cases yield it in the second and third weeks of the disease. It may continue to be shed throughout convalescence in a certain proportion of patients while in a small residuum of cases, probably about two per cent., the germ takes up a lodgment in the body, and continues to be excreted for months or years, or, it may be, throughout life. These chronic typhoid carriers are a discovery mainly of the last two years. They have been found at periods ranging from ten weeks to forty-two years after the attack of the fever. Moreover, several instances are recorded of persons acting as carriers of the infection in this way, although they never had any clinical manifestation of the disease or had no recollection themselves of being ill. It is to be remembered, however, that enteric fever is often very slight or obscure in its manifestations, and has sometimes been regarded as influenza, pneumonia, bronchitis, rheumatism, meningitis, or neurasthenia. Amongst chronic typhoid carriers, women form by far the largest

proportion (about seventy-five per cent.). The bacillus in those exceptional carrier cases finds a lodgment in the gall-bladder, from which it passes to the intestine, to be voided with the intestinal dejecta.

This persistence of the bacillus typhosus in certain persons for so many years after an attack of enteric fever is a matter of great importance from a public health point of view, for such persons, acting as unsuspecting and unsuspected carriers of infection, communicate the disease to others.

R. M. BUCHANAN.

The following two groups of cases occurring in December afford illustration of the dangers attendant on unrecognised cases of enteric fever:—

(1) A woman, whose child suffered from the disease in a mild form, stayed for a short time in two different houses, and in each of these households the infection from the child spread to three members. The number of cases of enteric fever, therefore, attributable to this one case is six, and the dates of sickening were as follows:—

Name.	Date.	Name.	Date.
J. L., ...	30th October.	M. S., ...	11th November.
B. L., ...	1st November.	W. S., ...	21st ,,
Baby L., ...	23rd ,,	Mrs. S., ...	22nd ,,

(2) On the occurrence of two cases (members of one family) in the Maryhill District, with an interval of only one week between dates of sickening, suspicion arose as to the existence of a common source of infection. Later it was ascertained that a man, previously resident at this address, had been ill in bed supposed to be suffering from shock, the result of a pit explosion, but by bacteriological examination of his blood it was found that he had been suffering from enteric fever.

CEREBRO-SPINAL FEVER.

This disease was made notifiable for the first time on 10th August, 1906, and was renewed for another year in 1907. The Corporation in 1908 adopted a resolution to have it added permanently to the list of those included within the Infectious Disease (Notification) Act.

In the analysis contained in last year's report of the age and house distribution of the disease, advantage was taken to include such information as was available from the cases occurring during the first six months of 1907, by which time indeed what may be called the epidemic phase of the disease had almost ended, the number of cases registered during the period January 1st to June 30th being 802, against 196 for the period July 1st to December 31st.

Ward Distribution.—In the following Table XXIV. the cases and case-rate, together with the deaths and death-rate, are stated for each Municipal Ward. From these figures it will be seen that while the disease was relatively more prevalent in Calton, Blackfriars, Anderston, and Broomielaw, the death-rate in the Eastern Wards generally, and in Blackfriars, together with Broomielaw and Anderston in the Western District of the City, were considerably above the mean for the City.

TABLE XXIV.

GLASGOW, 1907.—CEREBRO-SPINAL FEVER.—CASES AND CASE-RATES, with DEATHS and DEATH-RATES in each MUNICIPAL WARD, with corresponding DEATH-RATES for 1906.

MUNICIPAL WARDS.	Death-rate per Million.	CASES.		DEATHS.	
	1906.	Number.	Rate per Million.	Number.	Rate per Million.
1. Dalmarnock, ...	229	77	1,531	53	1,069
2. Calton, ...	361	81	2,152	58	1,631
3. Mile-end, ...	649	80	1,715	58	1,257
4. Whitevale, ...	366	58	1,737	45	1,388
5. Dennistoun, ...	138	36	929	22	596
6. Springburn, ...	370	74	1,498	60	1,331
7. Cowlairs, ...	96	24	785	18	589
8. Townhead, ...	325	58	1,537	37	981
9. Blackfriars, ...	367	48	2,128	28	1,298
10. Exchange, ...	...	3	1,204	3	1,474
11. Blythswood, ...	...	3	825	1	306
12. Broomielaw, ...	...	17	1,863	13	1,738
13. Anderston, ...	35	58	1,903	38	1,311
14. Sandyford, ...	80	36	1,422	19	760
15. Park, ...	40	21	821	6	244
16. Cowcaddens, ...	82	46	1,255	29	818
17. Woodside, ...	92	37	848	28	645
18. Hutchesontown, ...	125	51	1,292	33	837
19. Gorbals, ...	56	30	832	18	511
20. Kingston, ...	203	48	1,388	36	1,061
21. Govanhill, ...	88	24	692	18	519
22. Langside, ...	26	10	241	5	122
23. Pollokshields, ...	...	4	216	1	54
24. Kelvinside, ...	...	3	129	2	89
25. Maryhill, ...	126	49	1,180	33	825
26. Kinning Park, ...	...	22	1,646	13	973
— Institutions and Harbour, ...	...	...	...	8	...
CITY, ...	178	998	1,237	683	847

In the following Tables a series of analyses has been made in order to elucidate several features of the outbreak in addition to those dealt with in the report for last year:—

I.—Age Distribution of Cases.

In this Table the cases are analysed with regard to age and sex. The first striking feature is that 802 of the total 998 occurred in the first six months of the year. It also shows that almost 72 per cent. of the cases were under ten years of age, the greatest incidence being in infants under one. The proportions here given roughly correspond with those indicated in the report of last year, which showed a percentage varying between 70 per cent. and 76 per cent.

CEREBRO-SPINAL Fever.—Table showing the Number of Cases at different Ages during the Year 1907, and the Percentage of Cases at these Ages.

Age Groups.	1st Jan. to 30th June.			1st July to 31st Dec.			Totals.			Percentage of Cases intimated at Different Ages.
	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.	
Under 12 months, -	51	52	103	26	18	44	77	70	147	14·7
1—5 years, -	170	168	338	40	34	74	210	202	412	41·3
6—10 „ -	62	66	128	13	18	31	75	84	159	15·9
11—15 „ -	39	44	83	7	6	13	46	50	96	9·6
16—20 „ -	33	15	48	5	4	9	38	19	57	5·7
21—30 „ -	29	19	48	5	3	8	34	22	56	5·6
31—40 „ -	18	12	30	6	1	7	24	13	37	3·7
41—50 „ -	10	7	17	5	3	8	15	10	25	2·5
Over 50 years, - -	5	2	7	...	2	2	5	4	9	0·9
Totals, - -	417	385	802	107	89	196	524	474	998	...
Percentages, -	51·9	48·1	100·	54·6	45·4	100·	52·5	47·5	100·	...

II.—Age when Disease is most Fatal.

The following Table shows the cases analysed with reference to the same age distribution as in the former Table. The disease must be regarded as exceptionally fatal at all ages, there being no period where the rate falls under 50 per cent. of those attacked. For all ages in both sexes it exceeds 68 per cent. It would appear that the disease is relatively more fatal to male infants than to female, death having occurred in fully 80 per cent. of male children under one year, as against 72·8 in females.

CEREBRO-SPINAL Fever.—Table showing the Number of Deaths and the Percentage of Deaths to Cases Intimated at different Ages During the Year 1907.

Age Groups.	Males.		Females.		Totals.	
	Deaths.	Percentage of deaths to Intimations.	Deaths.	Percentage of Deaths to Intimations.	Deaths.	Percentage of Deaths to Intimations.
Under 12 months, -	62	80·5	51	72·8	113	76·9
1—5 years, -	150	71·4	148	73·3	298	72·3
6—10 „ -	49	65·3	54	64·3	103	64·8
11—15 „ -	24	52·2	34	68·0	58	60·4
16—20 „ -	21	55·3	11	59·3	32	56·2
21—30 „ -	19	55·9	18	81·8	37	66·1
31—40 „ -	14	58·3	8	61·5	22	59·5
41—50 „ -	10	66·6	6	60·0	16	64·0
Over 50 years, -	2	40·0	4	100·0	6	66·6
	351	67·0	334	70·5	685	68·6

III.—Date of Attack at which Death Occurs.

So far as may be inferred from the analysis of 595 deaths, the following statement may be made as to the average duration of illness of fatal cases. Of the total just named, 118 occurred on the first day of the disease, and a decreasing number is shown on each subsequent day during the first week. Indeed, the suggestion is that with every day which passes in this disease something is gained which makes for recovery.

CEREBRO-SPINAL FEVER.—TABLE SHOWING THE DURATION OF ILLNESS OF PATIENTS AT VARIOUS AGES WHO DIED FROM AN ATTACK OF CEREBRO-SPINAL FEVER.

Duration of Illness.	Deaths at Age.									Total Deaths.
	Under 12 Months.	1—5 Years	6—10 Years.	11—15 Years.	16—20 Years.	21—30 Years.	31—40 Years.	41—50 Years.	Over 50 Years.	
1 day, - - -	13	67	20	13	4	1	...	...	...	118
2 days, - -	7	33	14	7	4	5	3	1	...	74
3 „ - -	3	22	8	9	...	3	1	1	...	47
4 „ - -	3	26	6	2	6	3	2	...	...	48
5 „ - -	2	16	5	1	3	1	4	...	...	32
6 „ - -	2	10	3	3	1	2	1	...	2	24
7 „ - -	3	5	3	...	1	1	3	2	...	18
1—2 weeks, - -	15	27	6	5	5	3	3	7	1	72
2—3 „ -	3	18	5	7	4	3	1	...	...	41
3—4 „ -	9	9	...	2	...	1	1	...	...	22
Over 4 weeks, - -	21	42	17	2	4	8	3	2	...	99
Totals, - - -	81	275	87	51	32	31	22	13	3	595
Percentage deaths at several age-periods to total deaths, - -	13·6	46·3	14·7	8·6	5·2	5·2	3·7	2·2	0·5	100·0

IV.—DURATION OF ILLNESS.

The duration of illness is shown in an analysis of the period of illness of 140 cases which recovered, and in that connection attention may be drawn to the conclusions arrived at by Drs. Currie and M'Gregor as the result of employing sera of separate origins. Here a definite advantage seems to accrue to cases which survived the first ten days, provided they have had the advantage of some serum treatment.

CEREBRO-SPINAL FEVER.—TABLE SHOWING THE DURATION OF ILLNESS OF PATIENTS AT VARIOUS AGES WHO RECOVERED FROM AN ATTACK OF CEREBRO-SPINAL FEVER.

Duration of Illness.	Recoveries.									Total Recoveries
	Under 12 Months.	1—5 Years.	6—10 Years.	11—15 Years.	16—20 Years.	21—30 Years.	31—40 Years.	41—50 Years.	Over 50 Years.	
Under 1 month - -	1	...	...	2	...	1	...	...	...	4
1—2 months, -	3	9	8	4	5	5	1	3	1	39
2—3 „ -	5	16	15	5	8	6	1	...	...	56
3—4 „ -	2	5	3	1	1	1	1	...	...	14
4—5 „ -	4	10	3	...	...	2	...	...	...	19
5—6 „ -	2	3	1	...	...	...	1	...	...	7
Over 6 months, - -	...	1	...	...	...	...	...	...	...	1
Totals, - - -	17	44	30	12	14	15	4	3	1	140

SERUM TREATMENT OF CEREBRO-SPINAL FEVER.

The value of the several sera in the clinical treatment of the disease has been discussed in a paper* by Doctors Currie and M'Gregor, resident assistant physicians at Belvidere Fever Hospital, from which the following extract giving their conclusions is taken:—

An examination of our cases of cerebro-spinal fever during the period covered by this report, while leading in general to a negative conclusion, has nevertheless revealed one result in favour of serum treatment. It is true that, on the clinical side, we have not seen any obvious or constant train of events following the injection of serum; and, on the statistical side, we are unable to report that total case mortality was reduced, or fatal issues delayed, or favourable illnesses curtailed, or even that, after administration of serum, there was an increase in the number of patients who survived the first ten days. But when serum-treated survivors of the first ten days are compared with untreated survivors in respect of case mortality, it is found that the treated cases recovered in greater number; and the difference between the respective percentages is sufficient to carry the implications that serum-treated cases which survived the first ten days of illness had a better chance of life. This result, as we think, is significant; it suggests that the treatment in these cases, though failing to arrest the disease out of hand, was yet able to hamper its progress, aiding in this way the natural defences of the body, and hindering in all likelihood the formation of exudates which would stand in the way of recovery.

We have already stated that the high general fatality among our treated cases, and the absence of demonstrable benefit from early administration, are to be ascribed, at least in some measure, to the severity of the acute phase during the time when the disease was most prevalent in Glasgow. But the part played by the site of injection and by the quality of the sera used may also be borne in mind.

As regards the site of injection, our cases, with some exceptions, had serum at least on one occasion into the spinal theca after the withdrawal of cerebro-spinal fluid. Our frequently repeated injections, however, were subcutaneous for the most part, and our massive injections were necessarily so. Our results do not favour the combined method. More successful records have been obtained by exclusively thecal injections. On general grounds, the thecal site seems better suited than the subcutaneous for the application of a bactericidal remedy to a local bacterial injection; and it is of interest to note in this connection that M'Kenzie and Martin have shown that the cerebro-spinal fluid of cerebro-spinal fever cases did not contain substances which were bactericidal to meningococcus in vitro, even when the blood serum of the same patients had markedly bactericidal properties.

As regards the quality of the sera used, it may be that the most recent sera have a higher specific value than those accessible to us during the period under notice. One of these recent sera, that of Flexner, is now in use here. The results of its administration are not embodied in this report. They will be recorded in due course.

We may conclude these remarks with a comment on early administration of serum as applied in acute and chronic cases respectively.

It is stated by authors that early administration is the essential condition of success in serum treatment, yet it is evident that our earliest treated cases had the highest mortality. These acute cases, however, proving fatal shortly after admission and coming to section, were found to show general meningitis, hæmorrhagic patches, copious exudation, and the like. Their disease had run a rapid and virulent course. They were admitted, one within 24 hours, some within 48 hours, and some within 72 hours from onset, but their chances of recovery, as the issue proved, were already compromised. With attacks which may be beyond control in a few hours from the first appearance of symptoms, timely serum treatment is difficult to attain. These cases, though early within reach of such treatment, were presumably not early enough.

Chronic cases, on the other hand, which survived the acute toxæmia, because the subjects of profound pathological changes, hydrocephalus for example, led to death in our experience long after the stage of acute infection, and after a study of the cerebro-

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* See *Lancet*, October 10, 1908.

spinal fluid had shown that the greater part of the exudate had disappeared. *Post-mortem* examination disclosed either complete resolution of exudate or organised exudate at the base of the brain. In such cases death may be said to have been due to a complication rather than to the actual infective process. The issue and duration of the phase would appear to have been determined by the quantity and site of the exudate, and by its fate, that is to say, by the question of its resolution or organisation.

Gross lesions such as these are a menace in themselves, apart from bacterial activity; and it is not to be expected that an anti-microbic serum can influence their course to a useful extent once they have become established. The remedy is prophylactic. Serum must be given sufficiently early to prevent their occurrence. This view is in agreement with our finding that serum-treated survivors of the first ten days of illness had a better prospect of recovery than untreated cases.

TYPHUS FEVER.

5 cases of typhus fever were registered in 1907, and 2 deaths occurred. All the cases were removed to hospital. The case-rate was 6 and the death-rate 2 per million living.

The death-rate for the several periods is as follows:—

1881-90,	·040	per 1,000 living.
1891-1900,	·016	,,
1900,	·023	,,
1901,	·013	,,
1902,	·012	,,
1903,	·008	,,
1904,	·006	,,
1905,	·018	,,
1906,	·002	,,
1907,	·002	,,

Compared with other large towns, the death-rate in the ten years, 1897-1906, and in 1907, per 100,000 living, was as follows:—

	1897-1906.	1907.
Glasgow,	**1·2**	—
Edinburgh,	0·8	—
Dundee,	1·6	—
Aberdeen,	1·1	—
Paisley,	0·7	—
Greenock,	0·9	4

Of the five cases registered during the year, one occurred in May, two in July, and two in October.

The first case was that of a *chef* from a cross-Atlantic steamer which left New York on the 1st May, and arrived in Glasgow on the 13th. The patient sickened on the 9th, so that his infection would appear to have taken place in New York.

The first of the July cases was a man 40 years of age, who sickened on 24th June and was removed to hospital on 1st July; while a woman, 64 years, sickened on 10th July, and was removed to hospital on the 18th. There was no relationship between these cases, as each belonged to widely separated districts of the City. The October cases were a youth of 19 years and a man 48 years. The former sickened on 21st September, and was removed to hospital on the 29th. He had been in contact with a brother who was being treated for pneumonia, and who was convalescent at the time the case came under notice. The second case occurred in a public Institution in the North-Western District, to which the man had been removed two days previously, but there was no history of contact with any previous illness. As a precaution against the spread of infection, the other inmates of the Ward were detained until after the expiry of the usual incubation period.

TABLE XXV.

GLASGOW, 1907.—TYPHUS FEVER.—CASES and CASE-RATES and DEATHS and DEATH-RATES in each MUNICIPAL WARD, with corresponding rates for 1903-06.

MUNICIPAL WARDS.	Death-rate per Million.				Cases. 1907.		Deaths.	
	1903.	1904.	1905.	1906.	No.	Rate per Million.	No.	Rate per Million.
1. Dalmarnock, ...	...	...	101	...	...	...	...	...
2. Calton, ...	51	26	27	...	...	...	...	...
3. Mile-end, ...	...	23	46	22	...	...	...	...
4. Whitevale, ...	...	...	...	...	...	...	...	...
5. Dennistoun, ...	...	...	28	...	...	...	...	...
6. Springburn, ...	24	...	24	...	...	...	...	...
7. Cowlairs, ...	...	33	...	...	...	...	...	...
8. Townhead, ...	...	...	...	...	...	...	...	...
9. Blackfriars, ...	...	44	...	...	...	...	...	...
10. Exchange, ...	...	...	...	...	...	...	...	...
11. Blythswood, ...	...	...	...	...	...	...	...	...
12. Broomielaw, ...	...	...	...	...	1	110	...	...
13. Anderston, ...	...	...	34	...	1	33	...	...
14. Sandyford, ...	...	...	...	...	...	...	...	...
15. Park, ...	...	...	...	...	...	...	...	...
16. Cowcaddens, ...	...	...	...	...	...	...	...	...
17. Woodside, ...	...	...	...	...	...	...	...	...
18. Hutchesontown, ...	24	...	...	...	...	...	...	...
19. Gorbals, ...	27	27	...	...	...	...	...	...
20. Kingston, ...	...	...	87	...	...	...	...	...
21. Govanhill, ...	...	...	...	...	...	...	...	...
22. Langside, ...	34	...	...	...	...	...	...	...
23. Pollokshields, ...	...	...	...	...	1	54	...	...
24. Kelvinside, ...	...	...	...	...	...	...	...	...
25. Maryhill, ...	...	...	...	25	2	48	1	25
26. Kinning Park, ...	...	...	...	...	...	...	...	...
— Institutions and Harbour, ...	...	...	...	...	...	...	1	...
CITY, ...	8	6	18	2	5	6	2	2

SCARLET FEVER.

The number of cases of scarlet fever notified during 1907 was 1,759, of which 1,566, or 89·3 per cent., were treated in hospital. The deaths numbered 45, representing a death-rate of 56 per million living, and a case-fatality rate of 2·6 per cent. The case-rate for the City was 2,180 per million living.

The decrease in the death-rate from the disease since 1881 is as follows:—

Average of 10 years,	1881-90,	·490 per 1,000 living.
„ 10 „	1891-1900,	·295 „
	1900,	·278 „
	1901,	·172 „
	1902,	·145 „
	1903,	·105 „
	1904,	·088 „
	1905,	·045 „
	1906,	·062 „
	1907,	·056 „

Compared with other large towns the death-rate for several periods has been as follows:—

	Death-rate per 100,000. 1897-1906.	1907.
Glasgow,	**16**	**5**
Edinburgh,	15	7
Dundee,	9	7
Aberdeen,	11	3
Paisley,	20	9
Greenock,	29	10
London,	11	14
Liverpool,	28	18
Manchester,	17	16
Birmingham,	20	17

The number of cases registered, with the proportion treated in hospital, the proportion of deaths occurring there, and the case-mortality for each year since 1891, are stated in the following Table:—

TABLE XXVI.—SCARLET FEVER.

Year.	Cases.			Deaths.			
	Number.	Rate per Million.	Per cent. treated in Hospital	Number.	Rate per Million.	Per cent. occurring in Hospital.	Case-mortality. per cent.
1891	3,045	5,383	62·8	201	355	69·2	6·6
1892	4,844	7,257	62·7	301	451	63·5	6·2
1893	4,027	5,973	70·9	267	396	68·9	6·6
1894	3,930	5,701	73·7	210	307	70·0	5·3
1895	3,502	5,051	75·5	184	265	76·6	5·3
1896	2,728	3,879	78·9	143	203	82·5	5·2
1897	2,955	4,130	75·5	130	182	77·7	4·4
1898	3,620	4,947	82·3	190	260	76·3	5·2
1899	4,728	6,327	83·8	205	274	71·7	4·3
1900	4,162	5,508	85·7	210	278	77·6	5·0
1901	3,317	4,355	84·3	131	172	80·1	3·9
1902	2,509	3,229	85·3	113	145	77·9	4·5
1903	2,031	2,597	85·3	82	105	79·2	4·0
1904	1,573	2,003	83·2	69	88	85·5	4·4
1905	970	1,235	87·1	35	45	97·1	3·6
1906	1,382	1,721	87·8	50	62	84·0	3·6
1907	1,759	2,180	89·0	45	56	97·8	2·6

Although the disease was more prevalent than in any year since 1903, the case-mortality is the lowest yet recorded.

In the following Table the Ward incidence of the cases and deaths are shown, with corresponding death-rates for 1903-06:—

TABLE XXVII.

GLASGOW, 1907.—SCARLET FEVER.—CASES AND CASE-RATES, WITH DEATHS AND DEATH-RATES IN EACH MUNICIPAL WARD, ALSO DEATH-RATES FOR 1903-06.

MUNICIPAL WARDS.	Death-rate per Million.				Cases. 1907.		Deaths.	
	1903.	1904.	1905.	1906.	Number.	Rate per Million.	Number.	Rate per Million.
1. Dalmarnock, ...	59	59	61	140	89	1,780	5	101
2. Calton, ...	51	53	190	55	60	1,594	2	56
3. Mile-end, ...	116	139	69	22	52	1,114	1	22
4. Whitevale, ...	237	60	91	213	66	1,977	2	62
5. Dennistoun, ...	308	88	...	83	108	2,787	3	81
6. Springburn, ...	73	118	48	46	135	2,733	4	89
7. Cowlairs, ...	67	165	...	...	111	3,631	4	131
8. Townhead, ...	50	51	...	105	107	2,835	...	...
9. Blackfriars, ...	87	133	45	92	49	2,172	1	46
10. Exchange, ...	...	...	...	...	1	401	...	...
11. Blythswood, ...	...	...	...	...	2	550	...	...
12. Broomielaw, ...	120	...	...	...	19	2,082	2	267
13. Anderston, ...	136	172	...	...	69	2,263	2	69
14. Sandyford, ...	38	39	78	40	43	1,698	...	...
15. Park, ...	80	79	80	40	38	1,486	1	41
16. Cowcaddens, ...	...	52	...	...	47	1,282	3	85
17. Woodside, ...	131	133	...	23	100	2,292	4	92
18. Hutchesontown, ...	119	48	99	50	93	2,357	3	76
19. Gorbals, ...	192	164	...	28	83	2,301	4	114
20. Kingston, ...	86	114	87	29	59	1,706	1	29
21. Govanhill, ...	296	118	...	118	100	2,884	...	...
22. Langside, ...	67	61	28	52	122	2,939	2	49
23. Pollokshields, ...	118	...	56	...	46	2,483	...	...
24. Kelvinside, ...	...	101	...	...	30	1,295	...	...
25. Maryhill, ...	55	27	26	201	108	2,600	1	25
26. Kinning Park, ...	...	...	...	...	22	1,646	...	...
— Institutions and Harbour,	...	...	...	...	...	...	...	...
CITY, ...	105	88	45	62	1,759	2,180	45	56

In relation to population, the disease was most prevalent in Cowlairs Ward, but it also considerably exceeded the mean for the City in Dennistoun, Springburn, and Townhead, and also in Govanhill, Langside, and Maryhill.

GLASGOW.—SCARLET FEVER.

YEAR.	TREATED AT HOME.			TREATED IN HOSPITAL.		
	Cases.	Deaths.	Case-mortality per cent.	Cases.	Deaths.	Case-mortality per cent.
1891	1,133	62	5·5	1,912	139	7·3
1892	1,807	110	6·1	3,037	191	6·3
1893	1,172	83	7·1	2,855	184	6·4
1894	1,034	63	6·1	2,896	147	5·1
1895	858	43	5·0	2,644	141	5·3
1896	576	25	4·3	2,152	118	5·5
1897	724	29	4·0	2,231	101	4·5
1898	640	45	7·0	2,980	145	4·9
1899	764	58	7·6	3,964	147	3·7
1900	594	47	7·9	3,568	163	4·6
1901	522	26	5·0	2,795	105	3·8
1902	369	25	6·8	2,140	88	4·1
1903	297	17	5·7	1,734	65	3·8
1904	265	13	4·9	1,308	56	4·3
1905	125	1	0·8	845	34	4·0
1906	168	8	4·8	1,214	42	3·5
1907	193	1	0·5	1,566	44	2·8

Again, as in 1905, only one death occurred among 193 cases treated at home, compared with 44 deaths occurring among 1,566 cases removed to Hospital, which suggests that in the majority of cases displaying severity of attack removal to Hospital is readily accepted.

RETURN CASES.

51 cases occurred in 41 families subsequent to the return of earlier cases from hospital. This represents a rate of 3·8 per cent. on the dismissals. The average residence in hospital of the earlier cases was 66 days, an increase of 11 on last year. The maximum was 116, and the minimum 42 days.

The following shows the distribution of the cases throughout the three weeks subsequent to dismissal of the first case :—

GLASGOW, 1907.—RETURN CASES.—DAYS ELAPSING BETWEEN RETURN OF EARLIER AND SICKENING OF SUBSEQUENT CASES.

FIRST WEEK.		SECOND WEEK.		THIRD WEEK.	
Days Elapsing.	No. Cases.	Days Elapsing.	No. Cases.	Days Elapsing.	No. Cases.
1	4	8	5	15	...
2	3	9	6	16	2
3	5	10	2	17	...
4	...	11	4	18	2
5	2	12	1	19	1
6	4	13	...	20	3
7	4	14	1	21 and over	2
	22		19		10

GLASGOW, 1907.—SCARLET FEVER.—SECONDARY CASES occurring in HOUSEHOLDS after DISINFECTION.

FIRST WEEK.		SECOND WEEK.		THIRD WEEK.	
Days Elapsing.	No. of Cases.	Days Elapsing.	No. of Cases.	Days Elapsing.	No. of Cases.
1	11	8	4	15	2
2	7	9	3	16	...
3	4	10	5	17	...
4	1	11	3	18	1
5	5	12	...	19	...
6	3	13	1	20	...
7	3	14	3	21	3
	34		19		6

EFFECT OF SCHOOL HOLIDAYS ON THE OCCURRENCE OF CASES.

A Table has been introduced here, in which the number of cases occurring during the school holidays is compared with a corresponding number of days immediately preceding and following. The increase among the children of school age subsequent to the reopening of the schools in August is marked :—

GLASGOW, 1907.—SCARLET FEVER.—CASES NOTIFIED between May 23rd and Oct. 1st 1907, ARRANGED to SHOW the INFLUENCE of SCHOOL HOLIDAYS on CASE-INCIDENCE.

PERIODS.	Cases Notified.						Increase or Decrease.						TOTAL.
	Age, 0—3.		Age, 3—13.		Age, 13 and up.		Age, 0—3.		Age, 3—13.		Age, 13 and up.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1st. { May 23 to July 5,	4	7	52	72	10	18	...	...	...	...	...	...	163
2nd. { July 6 to Aug. 18,	5	8	40	53	9	12	+1	+1	−12	−19	−1	−6	127
								+2		−31		−7	
3rd. { Aug. 19 to Oct. 1,	16	9	79	77	17	16	+11	+1	+39	+24	+8	+4	214
								+12		+63		+12	
	25	24	171	202	36	46							
	49		373		82								504

MEASLES.

9,998 cases were registered in 1907, as compared with 10,402 in 1906, and 400 deaths occurred, representing a death-rate of 0·496 per 1,000 of the estimated population living. 39·5 per cent. of the total deaths occurred in hospital, and 92·0 per cent. of the fatal attacks were in children under 5 years of age.

For several periods the death-rate has been as follows:—

1881-90, ...	·680	per 1,000 living.
1891-1900, ...	·784	,,
1900, ...	·610	,,
1901, ...	·655	,,
1902, ...	·342	,,
1903, ...	·442	,,
1904, ...	·418	,,
1905, ...	·701	,,
1906, ...	·492	,,
1907, ...	·496	,,

The following Table shows the death-rate per 100,000 for several large towns for the ten years 1897-1906, and for 1907:—

	1897-1906.	1907.
Glasgow, ...	**60**	**47**
Edinburgh, ...	44	22
Dundee, ...	41	85
Aberdeen, ...	41	20
Paisley, ...	41	11
Greenock, ...	50	52
London, ...	47	38
Liverpool, ...	51	39
Manchester, ...	69	36
Birmingham, ...	43	57

It will be observed that among Scotch towns the death-rate for the disease in Dundee was considerably greater than in Glasgow, and that in Greenock it was also somewhat higher. Among the English towns quoted, the rate for Birmingham exceeds that of Glasgow.

The total deaths, the number occurring in hospital, and their proportion to the total deaths, for several years, are as follows:—

TABLE XXVIII.

MEASLES.

Year.	Deaths.		Death-rate per Million.	Percentage of Total Deaths occurring in Hospital.
	Total Number.	Number occurring in Hospital.		
1895	329	46	475	14·0
1896	819	126	1,164	15·4
1897	586	73	819	12·5
1898	539	89	737	16·5
1899	544	95	828	17·5
1900	461	81	610	17·6
1901	499	89	655	17·8
1902	266	33	342	12·4
1903	346	73	442	21·1
1904	328	54	418	16·5
1905	551	159	701	28·9
1906	395	108	492	27·3
1907	400	158	496	39·5

In Table XXIX. the number of deaths and the death-rate in each ward for 1907 is stated, together with the corresponding rates for 1903-06.

TABLE XXIX.

GLASGOW, 1907.—MEASLES.—DEATHS AND DEATH-RATES IN EACH MUNICIPAL WARD, WITH CORRESPONDING RATES FOR 1903-06.

MUNICIPAL WARDS.	Death-rate per Million.				1907.	
	1903.	1904.	1905.	1906.	Deaths.	Death-rate per Million.
1. Dalmarnock, ...	610	178	1,093	480	34	686
2. Calton, ...	821	342	1,057	527	33	928
3. Mile-end, ...	788	440	1,294	649	53	1,148
4. Whitevale, ...	533	363	730	457	40	1,234
5. Dennistoun, ...	246	88	340	221	12	325
6. Springburn, ...	484	1,324	808	601	34	754
7. Cowlairs, ...	101	791	646	834	13	425
8. Townhead, ...	625	407	618	470	16	424
9. Blackfriars, ...	520	178	904	321	21	973
10. Exchange, ...	...	447	...	481	...	...
11. Blythswood, ...	278	...	300	...	...	...
12. Broomielaw, ...	720	494	906	1,323	8	1,069
13. Anderston, ...	102	446	777	486	20	690
14. Sandyford, ...	302	501	818	360	13	520
15. Park, ...	80	159	160	201	...	...
16. Cowcaddens, ...	776	733	428	1,317	5	141
17. Woodside, ...	394	399	452	414	12	276
18. Hutchesontown, ...	477	555	1,260	902	12	304
19. Gorbals, ...	547	164	693	362	12	341
20. Kingston, ...	662	315	926	610	27	796
21. Govanhill, ...	237	295	711	353	8	231
22. Langside, ...	67	184	...	52	...	...
23. Pollokshields, ...	235	...	56	56	...	...
24. Kelvinside, ...	...	101	48	46	2	89
25. Maryhill, ...	165	373	667	351	11	275
26. Kinning Park, ...	...	...	...	148	13	973
— Institutions and Harbour, ...	...	...	...	...	1	...
CITY, ...	442	418	701	492	400	496

Measles in Relation to School Closure.

(*Extract from Minute of date 24th December*, 1907.)

MEASLES.

2,018 cases of measles have been registered during the fortnight as compared with 1,372 in the preceding one, and the deaths therefrom number 75 as compared with 67. In both cases these exceed the record of any similar period in recent years, and the number of deaths occurring suggests that the biennial wave of measles which is passing over the city at the present moment is of more than usual intensity, as well as more generally distributed.

In view of these circumstances, I have written the Clerks of School Boards and managers of private schools in Glasgow in the following terms:—

"In view of the near approach of the Christmas school holidays, I should like you to invite the attention of your Board to the distribution of measles within the municipal area at the present time.

"In almost every ward where there are schools some of them are affected by the disease, and of 110 of which I have a record, 60 have been invaded, and 33 have had their infant departments closed during the past autumn.

"Notwithstanding this the prevalence of the disease continues, and the occurrence of the holidays suggests the opportunity for making a more widespread effort to break the continuity of infection in the schools already invaded.

"If your Board, therefore, are of opinion that the educational interests of the unaffected children, and particularly of those who have already passed through the disease, will not appreciably suffer, I would suggest, in the interests of the remaining susceptible children in all the schools, and of the younger children who are not in attendance, that the holidays be extended to a period of three weeks from Monday next. I make the suggestion with less hesitation, because I know that in many of the schools the attendance in the upper standards is already becoming affected by the withdrawal of elder children consequent on the presence of the disease in younger members of these families.

"During the interval indicated I would suggest that every class-room where cases have occurred should be sprayed, cleaned, and aired (where this has not been done already), and if the efforts of the Board are seconded, as I feel sure they will be, by parents placing a wise restriction on freedom of intercourse with infected families, there will be some reasonable ground for expecting that the subsequent interruption to education will be much less than it has been in recent weeks.

"I am sending a duplicate of this letter to the Clerks of the other Boards and to school managers, and will forward you a certificate to the effect indicated if the Board approve of the line of action suggested."

I have since been informed that the School Boards of Glasgow, Govan, Cathcart, and Springburn are acting on the suggestion herein contained.

In order to overtake the increased volume of work caused by the outbreak, temporary additions have been made both to the inspecting and disinfecting staff as authorised at last meeting.

(*Extract from Minute of date 8th January*, 1908.)

MEASLES.

During the present fortnight, 1,288 cases of measles and 78 deaths were registered, as compared with 2,018 cases and 75 deaths in the preceding fortnight.

There is an increased prevalence in portions of Sandyford and Park Wards, on the north side of the river, and in Hutchesontown, Kingston, and Govanhill, on the south side, but in the other portions of the city there are indications of a decrease.

The numbers in hospital are greater than at any former period, and it seems probable that a larger portion of cases are being removed thereto, although this can only be an inference, as the total number of cases occurring is never known.

The development of the epidemic subsequent to the above notes falls properly within the year 1908, and the whole outbreak will be reviewed in the report for that year.

WHOOPING-COUGH.

The deaths from whooping-cough during 1907 numbered 872, which is equal to a death-rate of 1·081 per 1,000 living. This is greater than in any year since 1901, as will be seen from the following statement of the death-rate from the disease for several periods:—

1881-90,	...	1·150 per 1,000 living.
1891-1900,	...	·879 ,,
1900,	...	·933 ,,
1901,	...	1·116 ,,
1902,	...	·600 ,,
1903,	...	·772 ,,
1904,	...	·731 ,,
1905,	...	·791 ,,
1906,	...	·498 ,,
1907,	...	1·081 ,,

In comparison with other large towns, the rate per 100,000 for the ten years 1897-1906 and 1907 was as follows:—

	1897-1906.	1907.
Glasgow,	**82**	**106**
Edinburgh,	48	48
Dundee,	50	55
Aberdeen,	46	48
Paisley,	58	65
Greenock,	57	69
London,	37	38
Liverpool,	49	43
Manchester,	43	49
Birmingham,	45	34

The total deaths, deaths occurring in hospital, and the proportion these form to the total deaths for each year since 1895, are shown in the following Table:—

TABLE XXX.

WHOOPING-COUGH.

Year.	Deaths.		Death-rate per Million.	Percentage of Deaths occurring in Hospital.
	Total Number.	Number occurring in Hospital.		
1895	614	48	886	7·8
1896	643	68	914	10·6
1897	842	80	1,177	9·5
1898	703	86	961	12·2
1899	323	23	432	7·1
1900	694	67	918	9·7
1901	850	72	1,116	8·5
1902	466	59	600	12·7
1903	604	71	772	11·7
1904	574	96	731	16·7
1905	621	100	791	16·1
1906	400	94	498	23·5
1907	872	231	1,081	26·5

It will be observed in the comparison established with other towns that during 1907 whooping-cough was almost uniformly more fatal in towns in Scotland than in England, and that even in a decennial comparison the rates in Aberdeen and Edinburgh only are lower than the highest rate of the English towns quoted. An accurate comparison of these rates should have regard, however, to the proportion of children in these populations at the most vulnerable ages—that is to the number of children under 5 years. The persistently high death-rate from the disease, despite improved environment, takes it out of the class of those diseases which are influenced to any great extent in their prevalence by sanitary conditions, and suggests that the first effective step towards reduction lies in increased facilities for isolation. Unlike measles, it has a long infective period, and when one family in a tenement is affected it frequently occurs that other households are invaded in succession. To obviate or reduce this risk removal to hospital is frequently necessary, and the increasing proportion of deaths occurring in hospital, shown in Table XXX., is an indication of the effort to give effect to this. But the first requisite towards an effective use of the means of isolation lies in making the disease notifiable, which would rapidly reveal the extent of the isolation required.

The Ward distribution of the disease is shown in the following Table:—

TABLE XXXI.

GLASGOW, 1907.—WHOOPING-COUGH.—DEATHS AND DEATH-RATES in each MUNICIPAL WARD, with Corresponding Rates for 1903-06.

MUNICIPAL WARDS.	Death-rate per Million.				1907.	
	1903.	1904.	1905.	1906.	Deaths.	Death-rate per Million.
1. Dalmarnock, ...	1,121	869	1,316	580	125	2,521
2. Calton, ...	1,130	1,080	759	444	54	1,518
3. Mile-end, ...	1,112	1,019	924	784	54	1,170
4. Whitevale, ...	681	816	1,247	732	27	833
5. Dennistoun, ...	646	730	340	194	23	623
6. Springburn, ...	508	1,111	1,354	185	54	1,198
7. Cowlairs, ...	1,041	659	776	192	37	1,210
8. Townhead, ...	975	457	798	313	55	1,459
9. Blackfriars, ...	606	845	1,040	550	25	1,159
10. Exchange, ...	...	...	945	...	...	...
11. Blythswood, ...	278	574	...	...	...	...
12. Broomielaw, ...	1,319	989	1,424	265	12	1,604
13. Anderston, ...	713	926	913	799	46	1,587
14. Sandyford, ...	680	771	1,052	240	34	1,360
15. Park, ...	160	119	120	161	6	244
16. Cowcaddens, ...	1,577	890	1,125	1,152	51	1,439
17. Woodside, ...	832	599	543	1,013	24	553
18. Hutchesontown, ...	905	1,785	1,210	851	65	1,648
19. Gorbals, ...	602	629	665	418	42	1,192
20. Kingston, ...	690	830	492	465	37	1,091
21. Govanhill, ...	651	679	918	706	40	1,154
22. Langside, ...	304	31	194	77	19	464
23. Pollokshields, ...	59	...	112	56	3	162
24. Kelvinside, ...	...	151	242	46	...	...
25. Maryhill, ...	659	266	744	577	17	425
26. Kinning Park, ...	...	...	...	886	18	1,347
— Institutions and Harbour, ...	...	...	...	...	4	...
CITY, ...	772	731	791	498	872	1,081

In Exchange, Blythswood, and Kelvinside Wards alone no deaths occurred from the disease, and in seven only of the other Wards was the rate much below the mean for the City.

DIARRHŒAL DISEASES.

The deaths registered as due to diarrhœal diseases in 1907 numbered 441, representing a death-rate of 547 per million living. This is much lower than any rate hitherto recorded, and is largely owing to the great reduction in the number of deaths under five years, but particularly under one year, occurring in the second and third quarters of the year.

For several periods this rate has been—

1881-90, ...	·700	per 1,000 living.
1891-1900, ...	·843	„
1900, ...	·744	„
1901, ...	1·130	„
1902, ...	·642	„
1903, ...	·834	„
1904, ...	·898	„
1905, ...	·741	„
1906, ...	·933	„
1907, ...	·547	„

In the report for 1900 attention was drawn to the inclusion of several forms of gastro-intestinal catarrh among the diarrhœal diseases—an addition which, to a large extent, affects the value of decennial comparisons.

On the basis of the Registrar-General's returns, the death-rate of Glasgow may be compared with several other towns:—

	Death-rate per 100,000.* 1897-1906.	1907.
Glasgow, ...	**49**	**20**
Edinburgh, ...	34	12
Dundee, ...	76	47
Aberdeen, ...	40	18
Paisley, ...	57	21
Greenock, ...	63	24
London, ...	84	32
Liverpool, ...	163	73
Manchester, ...	139	50
Birmingham, ...	137	43

* Compiled from Registrar-General's Annual Report.

Age-Incidence of Diarrhœal Deaths.

The tendency of the disease towards increased prevalence in the third quarter of the year and its special incidence at ages 1-5 at this period is illustrated by the figures in the first of the subjoined Tables, while the special influence of a maintained high level of mean temperature during the summer months is illustrated by the excessive fatality during August. The average range of temperature during July seems largely to affect the prevalence of the disease in the following month.

TABLE XXXII.

Glasgow, 1907.—AGE-INCIDENCE of Diarrhœal Deaths.

1907.	Under 1 year.	1-5.	5-15.	15-20.	20-25.	25-60.	60 years and upwards.
1st Quarter, ...	51	18	5	1	1	6	6
2nd „ ...	46	16	2	...	...	8	7
3rd „ ...	91	25	3	...	1	2	4
4th „ ...	98	34	4	1	...	6	5
Totals, ...	286	93	14	2	2	22	22

The relation between the mean temperature during June to September and the autumnal prevalence of the disease may be shown thus—

	1902.		1903.		1904.		1905.		1906.		1907.	
	Mean Temp. in Shade.	Deaths under 1 year.	Mean Temp. in Shade.	Deaths under 1 year.	Mean Temp. in Shade.	Deaths under 1 year.	Mean Temp. in Shade.	Deaths under 1 year.	Mean Temp. in Shade.	Deaths under 1 year.	Mean Temp. in shade.	Deaths under 1 year.
June, -	53°·5	12	54°·6	31	54°·7	22	56°·9	17	57°·0	26	51°·2	17
July, -	54°·9	26	56°·2	41	57°·0	25	59°·3	31	56°·5	33	56°·1	15
August, -	54°·3	23	54°·6	97	56°·3	131	55°·8	101	57°·9	73	54°·2	28
September,	53°·5	42	52°·8	73	53°·2	91	52°·7	52	54°·4	140	54°·1	48

TABLE XXXIII.

GLASGOW, 1907.—DIARRHŒAL DISEASES.—DEATHS AND DEATH-RATES IN EACH MUNICIPAL WARD, with Corresponding Rates for 1903-06.

MUNICIPAL WARD.	Death-rate per Million.				1907.	
	1903.	1904.	1905.	1906.	Deaths.	Death-rate per Million.
1. Dalmarnock, ...	1,612	1,698	1,133	1,520	59	1,190
2. Calton, ...	1,669	1,686	949	1,414	37	1,040
3. Mile-end, ...	1,413	1,413	1,016	1,545	55	1,192
4. Whitevale, ...	770	1,390	730	1,372	25	771
5. Dennistoun, ...	369	555	255	581	10	271
6. Springburn, ...	943	686	879	971	29	643
7. Cowlairs, ...	571	890	517	995	13	425
8. Townhead, ...	675	813	695	1,045	20	530
9. Blackfriars, ...	1,299	1,245	768	1,146	18	834
10. Exchange, ...	448	...	...	481	...	...
11. Blythswood, ...	556	861	601	305	...	...
12. Broomielaw, ...	1,919	1,360	1,165	1,720	3	401
13. Anderston, ...	950	1,476	1,555	1,355	17	586
14. Sandyford, ...	944	694	818	879	11	440
15. Park, ...	361	238	120	161	3	122
16. Cowcaddens, ...	901	1,204	1,178	987	28	790
17. Woodside, ...	504	577	475	483	11	253
18. Hutchesontown, ...	762	844	667	851	12	304
19. Gorbals, ...	547	492	471	948	13	369
20. Kingston, ...	978	715	492	1,046	20	590
21. Govanhill, ...	444	708	658	588	10	288
22. Langside, ...	304	276	167	283	6	147
23. Pollokshields, ...	176	226	168	56	2	108
24. Kelvinside, ...	212	201	242	...	2	89
25. Maryhill, ...	550	878	795	904	18	450
26. Kinning Park, ...	...	...	...	1,033	7	524
— Institutions and Harbour,	...	...	...	...	12	...
CITY, ...	834	898	741	933	441	547

TUBERCULOUS DISEASES.

Phthisis.

In 1907 the number of deaths registered as due to phthisis was 1,260, representing a death-rate of 1·562 per 1,000 living.

For several periods the death-rate has been as follows:—

1881-90, ...	2·680 per 1,000 living.
1891-1900, ...	2·015 ,,
1900, ...	1·876 ,,
1901, ...	1·764 ,,
1902, ...	1·672 ,,
1903, ...	1·611 ,,
1904, ...	1·644 ,,
1905, ...	1·437 ,,
1906, ...	1·513 ,,
1907, ...	1·562 ,,

In several towns in Scotland the rate for the ten years, 1897-1906, and for 1907, has been—

Phthisis Death-rate per 100,000 in certain Scotch Towns for the Ten Years, 1897-1906, and for 1907.

	1897-1906.	1907.		1897-1906.	1907.
Glasgow, ...	**181**	**156**	Aberdeen, ...	150	111
Edinburgh, ...	166	125	Paisley, ...	158	136
Dundee, ...	188	177	Greenock, ...	166	155

The reduction which has taken place in the phthisis death-rate in Glasgow during the whole period of registration is shown in the following Table:—

Death-rate from Phthisis in the several Quinquennia since the beginning of Registration.

Years.	Death-rate per Million.	Years.	Death-rate per Million.
1855-9, ...	3,742	1890-4, ...	2,315
1860-4, ...	4,094	1895-9, ...	2,014
1865-9, ...	3,972	1900-4, ...	1,712
1870-4, ...	3,908	1905, ...	1,437
1875-9, ...	3,644	1906, ...	1,513
1880-4, ...	3,140	1907, ...	1,562
1885-9, ...	2,601		

Ward Distribution of the Disease.

In the following Table the deaths and death-rate for each Ward is shown for 1907, together with corresponding rates for 1903-06. In relation to population the disease has been most prevalent during the last five years in Calton, Blackfriars, and Cowcaddens, slightly less prevalent in Mile-end and Broomielaw, and only slightly exceeding the mean for the City in Whitevale and Kingston.

TABLE XXXIV.

GLASGOW, 1907.—PHTHISIS.—DEATHS and DEATH-RATES in each MUNICIPAL WARD, with Corresponding Rates for 1903-06.

MUNICIPAL WARDS.	Death-rates per Million.				1907.	
	1903.	1904.	1905.	1906.	Deaths.	Death-rate per Million.
1. Dalmarnock, ...	1,357	1,500	1,214	1,360	69	1,392
2. Calton, ...	2,156	2,054	1,790	1,941	77	2,165
3. Mile-end, ...	1,992	1,714	1,686	1,187	79	1,712
4. Whitevale, ...	1,865	1,269	1,642	1,555	44	1,357
5. Dennistoun, ...	984	934	1,161	940	33	894
6. Springburn, ...	1,499	1,797	1,283	1,849	60	1,331
7. Cowlairs, ...	1,141	1,022	1,131	1,059	43	1,407
8. Townhead, ...	1,350	1,677	1,107	1,307	48	1,273
9. Blackfriars, ...	2,296	2,356	1,944	1,558	48	2,225
10. Exchange, ...	1,792	1,340	945	1,443	5	2,457
11. Blythswood, ...	2,225	1,722	...	305	...	...
12. Broomielaw, ...	2,639	1,360	1,491	1,588	17	2,272
13. Anderston, ...	1,460	1,613	1,048	1,598	35	1,207
14. Sandyford, ...	1,057	1,118	1,441	1,399	38	1,520
15. Park, ...	721	555	680	684	15	609
16. Cowcaddens, ...	1,652	1,676	1,473	1,893	72	2,032
17. Woodside, ...	1,073	1,243	995	1,197	62	1,427
18. Hutchesontown, ...	1,715	1,905	1,358	1,427	58	1,470
19. Gorbals, ...	1,998	1,559	1,137	1,199	54	1,533
20. Kingston, ...	2,014	1,688	1,360	1,337	59	1,739
21. Govanhill, ...	1,154	1,446	1,126	1,148	31	894
22. Langside, ...	709	612	583	619	18	440
23. Pollokshields, ...	353	451	336	563	12	648
24. Kelvinside, ...	530	101	387	275	6	267
25. Maryhill, ...	1,017	1,118	1,026	1,280	55	1,375
26. Kinning Park, ...	...	...	...	1,550	16	1,197
— Institutions and Harbour, ...	...	...	...	...	206	...
CITY, ...	1,611	1,644	1,437	1,513	1,260	1,562

OTHER FORMS OF TUBERCULOUS DISEASE.

The following Table contains the deaths and death-rates of the several forms of tuberculous diseases taken from the Registrar-General's classification:—

TABLE XXXV.

GLASGOW.—TUBERCULOUS DISEASES.—DEATHS and DEATH-RATES per MILLION for the FOURTEEN YEARS, 1894-1907.

YEAR.	DEATHS.					DEATH-RATE PER MILLION.				
	Tubercular Meningitis.	Other Forms of Tuberculosis.	Tuberculous Diseases (Not Phthisis).	Phthisis.	All Tuberculous Diseases.	Tubercular Meningitis.	Other Forms of Tuberculosis.	Other Tuberculous Diseases (Not Phthisis).	Phthisis.	All Tuberculous Diseases.
1894	229	354	583	1,560	2,143	333	515	848	2,271	3,119
1895	229	398	627	1,584	2,211	329	572	901	2,276	3,177
1896	246	327	573	1,342	1,915	349	464	813	1,903	2,716
1897	266	341	607	1,434	2,041	372	477	849	2,006	2,855
1898	260	341	601	1,415	2,016	359	471	830	1,953	2,783
1899	240	406	646	1,454	2,100	327	553	880	1,981	2,861
1900	252	387	639	1,478	2,117	339	520	859	1,987	2,846
1901	238	458	696	1,392	2,088	311	599	910	1,821	2,731
1902	241	393	634	1,356	1,990	311	507	818	1,748	2,566
1903	235	424	659	1,342	2,001	299	539	838	1,705	2,543
1904	258	451	709	1,378	2,087	323	565	888	1,726	2,614
1905	245	409	654	1,233	1,887	302	505	807	1,522	2,329
1906	307	405	712	1,295	2,007	367	485	852	1,550	2,402
1907	390	446	836	1,314	2,150	460	526	986	1,550	2,536

In the period here included there has been no substantial reduction of the death-rate from the forms of tuberculous diseases which are not phthisis. The more recent views advanced to explain the origin of adolescent phthisis would attribute it in the majority of cases to infection derived from the ingesta in early life. To this view the decreasing death-rate from adult phthisis, coincident with the maintenance of the rate from the other forms of tuberculous disease, lends no support. Looked at over a longer period, however, it may be shown that since this present classification of other tuberculous diseases was introduced by the Registrar-General in 1883, a decrease in the death-rate, amounting to 9·5 per cent., has occurred.

GLASGOW, 1883-1907.—DEATH-RATES PER MILLION FROM TUBERCULOUS DISEASES IN SEVERAL PERIODS, 1883-1907.

	Average Annual Death-rate.					Per cent. decrease in 25 years.
	1883-88.	1889-94.	1895-1900.	1901-1906.	1907.	
I. Phthisis, ...	2,849	2,319	2,018	1,679	1,550	45·6
II. Tubercular Meningitis,	405	387	346	319	460	
III. Other forms of Tuberculosis, ...	685 } 1,090	497 } 884	510 } 856	533 } 852	526 } 986	9·5
All Tuberculous Diseases,	3,939	3,203	2,874	2,531	2,536	36

INCIDENCE OF PHTHISIS AND OTHER TUBERCULOUS DISEASES IN THE SEVERAL WARDS.

Were the factors which determine the incidence of both groups of tuberculous disease similar in their character, we should expect to find that the incidence of fatal phthisis—age distribution being left aside—would be greatest in those Wards where the other tuberculous diseases are most prevalent. This does not occur, however. We have already seen that on the basis of five years' death-rates, which are now available for all the Wards, fatal phthisis is continuously in excess of the mean for the City in Calton, Blackfriars, and Cowcaddens; that it exceeds the mean in four years of the five in Mile-end and Broomielaw; that in three years of the five it is above the mean in Whitevale and Kingston. But when we turn to the rates which express the fatal incidence of the other forms of tuberculous disease, we find that the rate is constantly in excess of the mean in Dalmarnock, Mile-end, Whitevale, and Anderston; that it exceeds the mean in four years in Calton, Springburn, Cowlairs, and Townhead; while in Cowcaddens and Kingston it exceeds the mean in three only out of the five years reviewed. Of the three Wards, Calton, Blackfriars, and Cowcaddens, which present a continuous excess of phthisis, none have a continuous excess of the other forms of tubercle, and Blackfriars had an excess of the other forms only in two years out of the five. But when we compare the incidence of phthisis with the general death-rate we get nearer the social significance of the disease in its fatal stages. It prevails most where the general death-rate is highest, and the suggestion is that the economic drain which the disease entails compels a constant movement of the affected families towards houses of smaller size in districts where the general conditions of sanitary and social well-being are at their worst.

In the following Table the Wards in the left-hand column are arranged in the order of their general death-rates over five years. Beginning with the highest, the order reads—Broomielaw, Calton, Cowcaddens, Blackfriars, and all of them, save Broomielaw, have a continuous excess of phthisis, but none of them a continuous excess of the other tuberculous diseases. Descending the scale of general death-rates still further, we have Mile-end, Dalmarnock, Hutchesontown, and Whitevale, and three of these Wards again (Mile-end, Dalmarnock, and Whitevale) are those presenting the greatest incidence of tuberculous diseases other than phthisis.

In view of the relationship between milk and abdominal phthisis, it is a suggestion of the above comparison that the children in the poorest districts of the City are insufficiently fed with milk.

Relation between Phthisis and other Tuberculous Diseases and the General Death-rate.

Ward Death-rates. All Causes. Average of 5 years.	Wards with Continuous Excess of	
	Phthisis.	Other Tuberculous Diseases.
Broomielaw.	Calton.	Dalmarnock.
Calton.	Blackfriars.	Mile End.
Cowcaddens.	Cowcaddens.	Whitevale.
Blackfriars.		Anderston.
Mile End.		
Dalmarnock.		
Hutchesontown.		
Whitevale.		

The deaths and death-rates from disease of the tuberculous class, other than phthisis, for the several Wards are shown in the following Table, with corresponding rates for 1903-06:—

TABLE XXXVI.

GLASGOW, 1907.—TUBERCULOUS DISEASES other than PHTHISIS.—DEATHS AND DEATH-RATES IN EACH MUNICIPAL WARD, WITH CORRESPONDING RATES FOR 1903-06.

MUNICIPAL WARDS.	Death-rates per Million.				1907.	
	1903.	1904.	1905.	1906.	Deaths.	Death-rate per Million.
1. Dalmarnock, ...	1,475	1,382	1,619	1,440	67	1,351
2. Calton, ...	1,540	1,501	1,437	1,109	46	1,293
3. Mile-end, ...	1,598	1,853	1,178	1,478	73	1,582
4. Whitevale, ...	1,658	1,481	1,430	1,555	40	1,234
5. Dennistoun, ...	1,261	1,080	849	968	32	867
6. Springburn, ...	1,523	1,348	784	1,802	50	1,109
7. Cowlairs, ...	1,041	1,220	1,261	1,476	44	1,439
8. Townhead, ...	1,426	1,575	1,261	1,228	45	1,194
9. Blackfriars, ...	1,213	800	994	1,192	31	1,548
10. Exchange, ...	448	1,340	945	...	2	983
11. Blythswood, ...	556	574	901	...	3	919
12. Broomielaw, ...	1,199	618	647	926	10	1,337
13. Anderston, ...	1,426	1,373	1,183	1,424	33	1,138
14. Sandyford, ...	831	887	935	1,478	31	1,240
15. Park, ...	281	357	360	362	9	366
16. Cowcaddens, ...	1,401	1,571	1,312	1,042	36	1,016
17. Woodside, ...	986	1,198	724	667	24	553
18. Hutchesontown, ...	1,525	1,543	1,235	1,377	38	963
19. Gorbals, ...	876	903	1,275	1,059	28	795
20. Kingston, ...	892	1,516	1,041	1,192	39	1,150
21. Govanhill, ...	1,095	915	1,303	1,118	30	865
22. Langside, ...	405	551	361	567	25	610
23. Pollokshields, ...	530	395	504	169	3	162
24. Kelvinside, ...	265	...	436	184	5	223
25. Maryhill, ...	989	1,145	872	926	40	1,000
26. Kinning Park, ...	...	...	...	1,771	14	1,047
— Institutions and Harbour, ...	...	...	...	...	34	...
CITY, ...	1,196	1,209	1,073	1,135	832	1,031

ADMINISTRATIVE TREATMENT OF PHTHISIS.

In previous reports I have outlined the administrative action taken by the Corporation in connection with cases of this disease. They include—

(1) a limited system of unpaid voluntary notification, restricted to Poor Law and general dispensaries;

(2) the issue of equipment for transmission of sputum for bacteriological examination;

(3) washing and disinfection of clothing and premises where necessary during the currency of known cases, and after death in all cases where it is required;

(4) the sanitary supervision at home of such cases as are known, including instructions as to the disposal of sputum, and the desirability of separate bed accommodation where possible;

(5) the co-operation of members of the Health Committee with the local branch of the National Association for Prevention of Consumption, which

(*a*) organises in winter a course of public lectures on the disease;

(*b*) conducts, in co-operation with the Public Health Department, a Tuberculosis Dispensary in apartments in the Sanitary Chambers, Cochrane Street; and

(*c*) a sanatorium for selected cases at Bellefield, Lanark, in which the accommodation is at present being extended from 30 beds to 50.

This same association, through a ladies' committee, undertakes the "after-care" supervision of patients in and near Glasgow after discharge from the sanatorium. As a further development of the work undertaken by the Corporation, tentative experiment was made during the year in removing to Baird Street Reception-house certain patients in an advanced stage of the disease, whose home surroundings were unsuitable for reasonable isolation.

NOTIFICATION.

The system above indicated has not to any appreciable extent resulted in disclosing the distribution of current phthisis. The cases thus notified during the year only numbered 276, of whom 39 only were not in receipt of some form of parochial relief. The age and source of information of these cases is given in the following Table:—

TABLE XXXVII.

GLASGOW, 1907.—PULMONARY PHTHISIS.—CASES NOTIFIED (1) as ADMITTED to PARISH HOSPITALS or in RECEIPT of OUTDOOR RELIEF; or (2) as ATTENDING the DISPENSARIES of the ROYAL and WESTERN INFIRMARIES and the ROYAL HOSPITAL FOR SICK CHILDREN.

AGE.	Eastern District Hospital.		Western District Hospital.		Stobhill Hospital.		Barnhill Poor-house.		Gartloch Asylum.		Outdoor Relief.		Royal Infirmary.		Western Infirmary.		Sick Children's Hospital.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
– 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
– 15	...	...	...	...	2	2	...	...	...	...	...	...	2	1	...	1	5	3	9	7
– 20	...	...	...	...	1	4	1	...	...	...	...	...	...	3	...	...	...	1	2	8
– 25	1	...	...	...	5	5	6	1	...	...	1	...	3	1	...	...	...	...	16	7
– 30	2	...	...	...	5	5	8	...	...	...	...	...	1	3	...	...	...	...	16	8
– 35	1	2	2	1	4	3	2	1	...	...	1	...	1	4	...	...	...	...	11	11
– 40	1	1	...	...	2	5	4	1	1	...	...	...	1	2	...	...	...	...	9	9
– 45	...	...	...	...	3	4	14	...	...	...	...	...	1	...	...	...	...	...	18	4
– 50	...	...	1	1	7	3	6	1	...	...	...	...	2	2	...	...	...	...	16	7
– 55	1	...	...	...	2	2	2	...	...	...	...	1	...	...	...	...	...	...	5	3
– 60	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	3	...
+ 60	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...
Not stated,	7	1	3	...	31	18	36	7	...	...	...	...	1	...	...	...	...	...	78	26
	13	4	6	2	65	51	81	11	1	...	2	1	12	16	...	1	5	5	185	91
	17		8		116		92		1		3		28		1		10		276	

BELLEFIELD SANATORIUM.—AFTER-HISTORY OF PATIENTS TREATED.

The after-history of 172 Glasgow patients treated at Bellefield Sanatorium, Lanark, and discharged prior to Midsummer, 1908, is shown in the following table:—

	Length of Time since Dismissed.						Total.
	–3 Months.	–6 Months.	–12 Months.	–2 Years.	–3 Years.	–4 Years.	
At work, - -	5	8	14	15	5	2	49
Not at work, -	7	7	2	7	3	1	27
Dead, - -	...	1	10	18	12	4	45
Gone to country,	3	3	7	14	6	1	34
Abroad, - -	1	...	2	1	3	1	8
No information,	1	3	1	3	1	...	9
TOTAL, - -	17	22	36	58	30	9	172

Washings and Disinfections in Cases of Phthisis.—During the year 678 washings and 155 disinfections of apartments were done for current cases, while 558 washings and 563 disinfections were carried out after death.

Tuberculosis Dispensary.—243 cases attended the dispensary in the twelve months (April, 1907, to March, 1908,) in the proportion of 68 per cent. from Glasgow and 32 per cent. from districts beyond.

55 of these were selected for treatment in Bellefield Sanatorium, 2 were admitted to Stobhill (Poor Law) Hospital, and 108 were supervised at home.

12 per cent. of the patients were from one-apartment houses, 59 per cent. from two-apartment houses, and 17 per cent. from three-apartment houses.

The new cases in each of the twelve months, and certain other details, are given in the following Table:—

PHTHISICAL CASES ATTENDING DISPENSARY AT SANITARY CHAMBERS, FROM APRIL, 1907, TO MARCH, 1908, INCLUSIVE.

Months.	Applicants.			By whom sent.					How Glasgow Cases disposed of.					Housing of Glasgow Cases.					
	Glasgow.	Beyond.	Total.	Secretary.	Infirmaries	Own Doctor.	Own Account.	C. O. S.	Belleheld.	Stobhill.	Lanfine.	Died.	At Home.	1 apt.	2 apts.	3 apts.	4 apts.	Institutions.	Models.
1907.																			
April,	18	11	29	13	7	8	1	...	7	...	...	2	11	2	8	7	...	1	...
May,	18	3	21	11	3	3	3	1	3	...	...	...	15	1	12	4	1	...	...
June,	11	3	14	5	...	3	4	2	3	1	...	1	7	1	7	...	2	1	...
July,	11	2	13	7	...	5	1	...	4	...	...	1	7	1	6	2	...	2	...
August,							(Hol	iday	Per	iod.)									
September,	21	4	25	13	...	6	6	...	9	...	...	...	12	2	13	3	2	1	...
October,	23	13	36	14	6	11	5	...	11	...	...	...	12	2	18	2	1	...	...
November,	12	3	15	4	2	5	4	...	5	1	...	1	6	1	6	1	4	...	...
December,	13	11	24	11	7	3	3	...	2	...	...	...	11	3	7	2	1	...	...
1908.																			
January,	12	9	21	10	...	6	5	...	4	...	...	3	8	4	5	2	1	...	...
February,	15	9	24	9	4	8	3	...	4	...	...	...	11	3	5	6	1	...	...
March,	11	10	21	13	4	3	1	...	3	...	...	...	8	...	10	..	1	...	...
	165	78	243	110	33	61	36	3	55	2	...	8	108	20	97	29	14	5	...
Proportion of total cases from each source,	68°/₀	32°/₀	100	...	...	...	...	...	33°/₀	2°/₀	...	...	65°/₀	12°/₀	59°/₀	17°/₀	9°/₀	3°/₀	...

FAMILY HISTORY OF DISPENSARY PATIENTS IN RELATION TO PHTHISIS.

Enquiry was made as to the previous or concurrent existence in the family or relatives of these patients. In 178 cases no history of other like illness could be obtained, but it is obvious that this cannot be regarded as always meaning that such did not exist.

Cases in Patients' Families.—(*a*) Parents. In seven cases the father of the patient was similarly affected, or had died of the disease. In 13 cases a similar maternal history existed. In 4 both parents suffered.

(*b*) *Brothers and Sisters.* 21 patients had brothers similarly affected, 9 had sisters, and 6 had both brothers and sisters.

(*c*) In one case patient's wife also suffered, and in 5 there were affected children in the family.

(*d*) *Other Relatives.* 5 patients had uncles and one an aunt suffering from phthisis. In one case a grandparent had been affected.

FAMILY HISTORY OF PHTHISIS OF APPLICANTS FOR BELLEFIELD SANATORIUM FROM APRIL, 1907, TO MARCH, 1908, INCLUSIVE.

Father.	Mother.	Both.	Brothers.	Sisters.	Both.	Uncles.	Aunts.	Both.	Wife.	Children.	Grand-parents.	No History.
7	13	4	21	9	6	5	1	...	1	5	1	178

Occupations.—These are shown in the following Table, together with the proportions occurring among indoor and outdoor trades, there being 75 per cent. of the former and 25 per cent. of the latter:—

OCCUPATION OF APPLICANTS.

Tradesmen, ...	83	–	34%
Labourers, ...	65	–	27%
Clerks, Warehousemen, &c., ...	55	–	23%
Shopkeepers, ...	8	243 –	3%
Travellers, Hawkers, Policemen, Car Conductors, &c.,	25	–	10%
Soldiers, Sailors, Ship Stewards, ...	7	–	3%
Indoor Workers, ...	181	=	75%
Outdoor Workers, ...	62	=	25%
	243		

ISOLATION OF SELECTED CASES IN BAIRD STREET RECEPTION HOUSE.

The object of this tentative effort was to provide for the isolation of certain patients, mostly bed-ridden, who were housed under conditions which prevented any reasonable effort being made to obtain suitable sleeping accommodation or control of the sputum.

The exclusion from relief by the Poor Law Authorities of all who are the dependents of able-bodied bread-winners led to the selection of suitable cases for Baird Street being made from among the wives and children of families not entitled to parochial relief.

Information regarding such cases was obtained through one or other of the following agencies:—

(1) The officers of the School Board and Parish Council;

(2) the various nursing organisations; and

(3) the Inspectors of the Department.

The cases were in the first instance visited by one of the medical staff, and those in the worst surroundings selected. From March to November, when admissions were stopped, 27 in all were admitted. Two of the nursing staff of Belvidere Hospital were transferred for duty at the Reception-house, and, with the assistance of the Matron, this provision was found sufficient for the purpose.

Certain details of the cases are shown in the following Table:—

LIST OF PATIENTS SUFFERING FROM PHTHISIS ADMITTED TO BAIRD STREET RECEPTION HOUSE.

No.	By whom Notified	Name.	Age.	Address.	Size of House.		Inmates.			Occupation.	Date of—		Result.	Remarks.
					1.	2.	Ad.	Ch.	Tl.		Admission.	Dismissal.		
1	Royal Infirmary, -	Mrs. F.,	37	43 Duke Street,	...	1	3	3	6	Domestic,	25/3	...	Died 12/4	3 months in bed. and no attendance.
2	School Board, -	M. M'G.,	9	8 Murray Street,	...	1	3	2	5	School.	2/4	18/5	...	Much improved.
3	Epidemic Inspector,	Mrs. B.,	40	31 Wellcroft Place,	1	..	2	...	2	Widow,	3/4	27/5	...	Admitted for educative purposes.
4	Parish, - - -	L. S.,	22	15 Ladywell,	...	1	..	...	...	Bottle labeller,	4/4	...	...	A lodger; still in hospital.
5	School Board, -	A. S.,	9	246 Craig Street, K.P.,	...	1	4	3	7	School,	9/4	12/7	...	To Biggart home
6	Epidemic Inspector,	K. L.,	19	80 Stirling Road,	...	1	...	...	...	Dairymaid,	9/4	26/12	...	Has heart disease; stays with sister.
7	Do. do.,	Mrs. W.,	25	65 Water Street, P.-D.,	1	...	2	1	3	Domestic,	10/4	13/4	...	Refused to stay.
8	Parish, - - -	L. W.,	20	154 Eglinton Street,	...	1	4	...	4	Machinist,	11/4	27/4	...	Do.
9	School Board, -	L. M.,	$3\frac{10}{12}$	210 Moncur Street,	1	...	3	5	8	...	27/4	18/5	...	Bronchial pneumonia.
10	Do., -	D. C.,	7	7 Maryland Buildings,	1	...	...	...	...	Schoolboy.	6/5	5/6	...	Much improved.
11	Epidemic Inspector.	Mrs. W.,	43	32 Smith Street, K.-P.,	1	...	2	2	4	Domestic,	11/5	24/6	...	Refused to stay.
12	Parish, - - -	Mrs. H.,	26	210 Garscube Road,	1	...	2	2	4	do.,	11/5	...	Died 29/6	...
13	Do., - - -	Mrs. L.,	33	10 Lily Street,	1	...	2	4	6	do,	22/5	...	Died 28/6	...
14	Do., - - -	Mrs. D.,	31	18 Errol Street,	1	...	2	3	5	do.,	11/6	...	Died 30/6	...
15	Do., - - -	Mrs. B.,	39	5 Schipka Pass,	Lodging-house		...	...	...	Hawker,	19/6	9/7	...	Refused to stay—lost.
16	Quarrier, - -	E. M'G.,	23	28 Steel Street,	...	1	2	1	3	Domestic,	1/7	9/7	...	Refused to stay.
17	Parish, - - -	Mrs. R.,	30	262 Dobbie's Loan,	1	...	2	4	6	do.,	2/7	...	Died 5/8	...
18	Do., - - -	Mrs. M'F.,	27	279 Garscube Road,	1	...	2	2	4	do.,	2/7	...	Died 21/7	...
19	Do., - - -	Mrs. S.,	34	903 Great Eastern Road,	1	...	4	6	10	do.,	3/7	3/10	...	...
20	Quarrier, - -	B. M'N.,	25	13 James Morrison St.,	...	...	...	...	...	Servant,	25/6	...	Died 15/7	From Canada.
21	Parish, - - -	R. C.,	$3\frac{5}{12}$	No fixed abode,	...	...	...	...	...	...	12/7	7/10	...	Improved.
22	School Board, -	M. C.,	7	49 Richard Street,	1	...	2	1	3	...	22/7	14/12	...	Refused to stay; died 8 days after.
23	Do., -	M. F.,	7	35 do.,	1	...	2	2	4	...	1/7	7/9	...	Much improved.
24	Do., -	K. F.,	12	46½ Rose Street,	1	..	3	1	4	School,	25/9	16/11	...	Refused to stay.
25	Royal Infirmary, -	Mrs. B.,	33	Royal Infirmary,	...	...	...	...	...	Domestic,	12/9	12/11	...	Do.
26	St. Elizabeth Nursing Home,	Mrs. H.,	24	92 Thistle Street, S.S.,	1	...	2	2	4	do.,	7/11	...	Died 23/11	...
27		T. H.,	26	do. do.,	1	...	2	2	4	...	...	...	...	Husband of above.

Result of Treatment.

From the foregoing Table it will be seen that 8 of the 27 patients admitted died in the Reception-house. With one exception these were women between the ages of 26 and 37 years, and mothers of young families. The other death was that of a girl who had developed phthisis in Canada, and had been sent home to die. When she arrived in Glasgow she was removed to a Home in James Morrison Street, but was subsequently admitted in a dying state to Baird Street.

After admission, many of the patients appeared to be unhappy because of the separation from their friends, and the desire was frequently expressed by them that they should be allowed to go home to die.

Although the total number of patients dealt with in the present experiment was small, the proportion of those in whom the desire to return to their friends became urgent was considerable—8 out of 24—and conveys one lesson, which, indeed, was anticipated. In removal to hospital for most of the infectious diseases usually treated there the chances are at least eight to one that the patient will return well. In advanced phthisis there is no such possibility. The desire to return home to die among friends, therefore, becomes urgent in the patient, and finds ready response among his relatives. It rapidly overcomes the fear of infection, and must be reckoned with in any proposal to adopt segregation of advanced cases on a large scale. Some provision for these cases is required, but its use will, I believe, be limited, and as a factor in prevention it must, I think, for the reason stated, be almost negligible. Compulsory segregation for preventive purposes, when accompanied by reasonable expectation of return to the home circle, is a rational and defensible procedure, but compulsory segregation, when the prospect is of final separation, does violence to all human feeling, and will ultimately find few advocates. This much, I think, is one of the lessons of our short experience in Baird Street.

The eight patients who after a short residence desired to go home were dismissed, and after dismissal were kept under observation. Of these six have since died, one has been lost sight of (she originally came from a female lodging-house), and the other is still ill at home. Seven patients were dismissed much improved, after various lengths of residence.

The nature of the relationship of the patients to other members of their families were as follows:—

No.	Name.	Others in House.
1.	Mrs. F., ...	Husband and four children.
2.	M. M'G., ...	Father, mother, and six children.
3.	Mrs. B., ...	Mother.
4.	E. S., ...	In lodgings.
5.	A. S., ...	Child out of large poor family.
6.	K. L., ...	Orphan, lived with married sister.
7.	Mrs. W., ...	Husband and one child; very poor.
8.	E. W., ...	Widowed mother.
9.	L. M., ...	Child out of large family.
10.	D. C., ...	Father, mother, and large family.
11.	Mrs. W., ...	Husband and two children, in lodgings.
12.	Mrs. H., ...	Husband and two children.
13.	Mrs. L., ...	Husband and four children.
14.	Mrs. D., ...	Husband and three children.
15.	Mrs. B., ...	Female lodging-house.
16.	Mrs. M'G., ...	Husband and one child.
17.	Mrs. R., ...	Husband and three children, living in farmed-out house.
18.	Mrs. M'F., ...	Husband and two children.

No.	Name.	Others in House.
19.	Mrs. S., ...	Father, mother, and eight children.
20.	B. M'N., ...	Orphan.
21.	R. C., ...	Father, homeless.
22.	M. C., ...	Widowed mother.
23.	M. F., ...	Father, mother, and four children.
24.	K. F., ...	Father, mother, and two children.
25.	Mrs. B.	From Royal Infirmary.
26.	Mrs. H., ...	Husband and two children.
27.	Mr. H., ...	Husband of above.

TUBERCLE IN MILK SUPPLY.

During the latter half of the year the effort was renewed to obtain information regarding the presence of tubercular milk in the supplies forwarded to the City. The experience of the period between 1901-1906 produced two items of information.

Where disease of the udder existed, or clinical evidence suggesting disease was present, it was found that, of 62 samples taken direct from the teats of cows within the City, 12 proved "positive," which is equal to almost 20 per cent. of the whole; whereas of 33 samples taken from affected animals outside the City, 3 were found to be "positive," or the equivalent of 9 per cent.

On the present occasion it was decided that the samples to be taken should consist wholly of cream, so that the total yield of the farm might be wholly represented therein, and these were taken, under antiseptic precautions, as the butts arrived at the railway station. In all, between the months of August and December, 191 samples were so taken. Each sample usually means the cream of a single farm, but in some instances where the quantity of cream was large the samples might be taken from one or two butts. In all these cases an inoculation test was performed, and the results were as follows:—

In 28 cases the inquiry miscarried owing to the death of the animal before tubercular lesions had time to develop, and of the remaining 163 the results were "positive" in 7 cases and doubtful in 2. In all nine farms were visited by the Veterinary Surgeon's staff, and the herd inspected for the animal assumed to be yielding the infected milk.

In four of the cases originally "positive" the affected animal was discovered at the first visit. In the two doubtful cases the final results were "negative," in one case originally "positive" the first results of the inspection were "negative," but on a second visit a "positive" sample was obtained, while in two cases originally "positive" the visit failed to disclose any animal then yielding tuberculous milk. In these latter the explanation might either have been that some of the herd had been changed between the taking of the cream samples at the station and the visit, or, what is equally probable, that the cream obtained at the station had derived its tubercle from ærial infection through the dust of the byre.

It is somewhat satisfactory to note, therefore, that of the affected byres one was in Lanarkshire, 7 in Ayrshire, and one in Renfrewshire.

DISEASES OF ORGANS OF RESPIRATION.

The Registrar-General in 1901 withdrew pneumonia from this group of diseases, and constituted it a separate entry among general diseases. This is in consonance with the view now prevailing that pneumonia is a systemic infection, with a limited range of infectivity.

In 1906 the Local Government Board adopted the Registrar-General's arrangement, and it was introduced into these reports for the first time last year.

In order, however, to obtain a figure for diseases of respiration comparable with those of former years pneumonia must be added to those now remaining under the original classification.

With this explanation, the deaths from respiratory diseases, including croup, number 1,352, and the rate 1,676 per million. From pneumonia alone, 1,560 deaths occurred, representing a death-rate of 1,934. Together the deaths from both causes number 2,912, and represent a death-rate of 3,610 per million living, compared with 3,427 for 1906.

The death-rate from respiratory diseases for several periods per thousand of the population living has been :—

1881-90,	...	...	5·870	1905, ...	3·569
1891-1900,	...	...	4·993	1906—Pneumonia, 1·657	
1900,	...	...	4·979	Other Diseases	3·427
1901,	...	...	4·335	of Respiration, 1·770	
1902,	...	...	4·836	1907—Pneumonia, 1·934	
1903,	...	...	3·927	Other Diseases	3·610
1904,	...	...	4·036	of Respiration, 1·676	

The death-rates in the several Wards from diseases of the respiratory organs alone (*i.e.*, excluding pneumonia) is shown in the following Table, which contains, for convenience of reference, a column showing the combined death-rate from diseases of respiration and from pneumonia for 1907.

TABLE XXXVIII.

GLASGOW, 1907.—RESPIRATORY DISEASES (including CROUP).—DEATHS and DEATH-RATES in each MUNICIPAL WARD, with Corresponding Rates for 1903-06.

MUNICIPAL WARDS.	Death-rate per Million.				1907.			
					Excluding Pneumonia.		Total, Including Pneumonia.	
	1903.	1904.	1905.	1906.	Deaths.	Death-rate per Million.	Deaths.	Death-rate per Million.
1. Dalmarnock, ...	4,463	4,698	3,602	3,720	103	2,077	228	4,598
2. Calton, ...	4,646	5,663	4,365	4,437	89	2,502	176	4,948
3. Mile-end, ...	4,424	4,331	4,389	3,895	99	2,145	205	4,442
4. Whitevale, ...	3,907	4,533	3,772	3,324	65	2,005	127	3,917
5. Dennistoun, ...	2,338	1,986	1,925	2,074	28	759	65	1,761
6. Springburn, ...	4,183	3,996	3,706	3,535	72	1,597	174	3,860
7. Cowlairs, ...	3,224	3,626	3,652	2,855	41	1,341	86	2,813
8. Townhead, ...	3,676	4,243	4,478	3,764	66	1,751	135	3,581
9. Blackfriars, ...	5,544	5,956	5,269	5,134	46	2,132	108	5,006
10. Exchange, ...	4,032	2,681	3,779	1,443	3	1,474	7	3,440
11. Blythswood, ...	2,781	2,869	1,202	1,525	2	613	5	1,532
12. Broomielaw, ...	5,997	4,326	4,530	4,368	22	2,940	48	6,415
13. Anderston, ...	3,803	3,466	3,650	3,473	47	1,621	104	3,587
14. Sandyford, ...	3,058	3,585	3,857	3,117	54	2,159	91	3,639
15. Park, ...	2,445	1,784	1,119	1,769	26	1,056	44	1,787
16. Cowcaddens, ...	5,931	6,415	6,427	4,773	80	2,258	154	4,346
17. Woodside, ...	3,001	3,262	3,189	3,567	61	1,404	139	3,200
18. Hutchesontown,	5,099	5,740	4,124	4,933	65	1,648	173	4,386
19. Gorbals, ...	4,762	4,540	4,213	3,401	54	1,533	152	4,315
20. Kingston, ...	3,740	3,547	3,935	3,401	54	1,592	100	2,948
21. Govanhill, ...	2,723	3,246	2,577	2,736	42	1,211	99	2,855
22. Langside, ...	1,519	1,378	1,333	1,109	28	683	57	1,391
23. Pollokshields,	1,119	677	953	1,013	22	1,187	35	1,889
24. Kelvinside, ...	955	1,156	678	1,285	10	446	18	802
25. Maryhill, ...	3,958	4,073	3,028	2,837	34	850	115	2,875
26. Kinning Park,	...	...	...	3,690	18	1,346	46	3,441
— Institutions and Harbour, ...	...	...	...	...	121	...	221	...
CITY, ...	3,927	4,036	3,569	3,427	1,352	1,676	2,912	3,610

The rate from all diseases of the respiratory class, including pneumonia, was highest during 1907 in Broomielaw and Blackfriars, and in these Wards, together with Dalmarnock, Calton, Mile-end, Cowcaddens, and Hutchesontown, it is continuously in excess of the mean for the City.

Pneumonia.—The deaths and death-rates obtaining in each Ward from this disease are shown in the following Table:—

TABLE XXXIX.

GLASGOW, 1907.—PNEUMONIA.—DEATHS and DEATH-RATES in each MUNICIPAL WARD, with CORRESPONDING RATES for 1906.

MUNICIPAL WARDS.	Death-rate per Million.	1907.	
	1906.	Deaths.	Death-rate per Million.
1. Dalmarnock, ...	1,900	125	2,521
2. Calton, ...	1,719	87	2,446
3. Mile end, ...	1,701	106	2,297
4. Whitevale, ...	1,464	62	1,912
5. Dennistoun	996	37	1,002
6. Springburn, ...	1,802	102	2,263
7. Cowlairs, ...	1,155	45	1,472
8. Townhead, ...	1,699	69	1,830
9. Blackfriars, ...	2,704	62	2,874
10. Exchange, ...	962	4	1,966
11. Blythswood, ...	610	3	919
12. Broomielaw, ...	2,912	26	3,475
13. Anderston, ...	1,528	57	1,966
14. Sandyford, ...	1,439	37	1,480
15. Park, ...	804	18	731
16. Cowcaddens, ...	2,277	74	2,088
17. Woodside, ...	1,588	78	1,796
18. Hutchesontown, ...	3,105	108	2,738
19. Gorbals, ...	2,007	98	2,782
20. Kingston, ...	1,221	46	1,356
21. Govanhill, ...	1,589	57	1,644
22. Langside, ...	619	29	708
23. Pollokshields, ...	281	13	702
24. Kelvinside, ...	459	8	356
25. Maryhill, ...	1,707	81	2,025
26. Kinning Park, ...	1,328	28	2,095
— Institutions and Harbour, ...	...	100	...
CITY, ...	1,657	1,560	1,934

TABLE XL.

GLASGOW.—PNEUMONIA.—DEATHS AND DEATH-RATES PER MILLION IN SEVERAL QUINQUENNIAL PERIODS, 1855-1907. Compiled from the Detailed Annual Reports of the Registrar-General, except 1906 and 1907, which are taken from the Annual Summary.

PERIOD.	Population.	No. of Deaths.		Total.	Average Death-rate per Million.	
		Male.	Female.			
1856-1860, ...	...	...	...	...	1,576	
1861-1865, ...	...	...	...	...	1,370	
1866-1870, ...	...	...	...	...	1,312	
1871-1875, ...	...	...	...	...	1,536	
1876-1880, ...	...	...	...	...	1,409	
1881-1885, ...	...	...	...	...	1,949	
1886-1890, ...	...	...	...	...	1,724	
1891-1895, ...	...	...	...	...	2,056	
1896-1900, ...	...	...	...	...	2,029	
1901, ...	764,467	898	626	1,524	1,994	
1902, ...	775,601	1,125	723	1,848	2,383	
1903, ...	786,897	970	708	1,678	2,132	2,180
1904, ...	798,357	969	837	1,806	2,262	
1905, ...	809,986	979	746	1,725	2,130	
1906, ...	835,625	...	...	1,635	1,957	
1907, ...	847,584	...	...	1,778	2,098	

NOTE.—For the annual numbers and rates before 1901 see Medical Officer's Annual Report for 1906, page 127.

PUERPERAL FEVER.—ERYSIPELAS.

TABLE XLI.

Year.	Puerperal Fever.				Erysipelas.	
	No of Cases Notified.	Case-rate per 1,000 Births.	Case-mortality per Cent.	Death-rate per Million Living.	Death-rate per Million Living.	
1891	80	4·0	75·0	105	115	
1892	63	2·8	68·3	64	84	
1893	73	3·1	63·1	68	75	
1894	64	2·8	54·7	51	83	
1895	74	3·2	59·5	63	69	
		3·2	64·1	70		85
1896	105	4·4	53·3	79	55	
1897	62	2·6	54·8	48	49	
1898	71	2·9	53·5	52	40	
1899	83	3·4	72·3	82	45	
1900	78	3·2	74·3	78	32	
		3·3	61·4	68		44
1901	71	2·9	83·1	71	60	
1902	90	3·6	55·5	51	51	
1903	108	4·3	63·9	53	44	
1904	89	3·6	66·3	53	53	
1905	108	4·5	55·5	74	33	
		3·8	64·8	60		48
1906	119	4·8	48·7	69	62	
1907	122	5·1	48·2	70	44	

The Rates quoted above are based on data obtained from the Registrar-General's Reports.

It would appear from the foregoing that in relation to the number of births occurring annually the attack-rate of puerperal fever has increased during the last sixteen years from 3·2 per thousand births to 3·8. This may be due only to more complete notification of the cases occurring, but it is suggestive that the increase has been associated in the last decade with an increased death-rate from erysipelas.

From this point of view it is important to consider the nature of the attendance on those women in whom puerperal fever developed, and in the following table the cases are grouped to show this:—

GLASGOW, 1907.—PUERPERAL FEVER.—NATURE OF ATTENDANCE DURING PARTURITION.

	Total Cases Notified.	Medically Attended.	Midwife.	Both.
January, ...	9	3	3	3
February, ...	12	4	7	1
March, ...	9	3	5	1
April, ...	12	3	1	8
May, ...	10	3	5	2
June, ...	16	7	6	3
July, ...	9	1	5	3
August, ...	9	2	1	6
September, ...	10	3	4	3
October, ...	10	4	3	3
November, ...	8	3	5	...
December, ...	8	4	2	2
	122	40	47	35

The full significance of the figures given could only appear were it possible to state the cases occurring in each group in relation to the cases similarly attended, but this number is not meanwhile known. It is deserving of recognition, however, that quite two-thirds of the cases of puerperal fever notified during 1907 occurred in women who during parturition had either no medical attendant (47), or this was obtained only at an advanced stage at the request of the mid-wife previously in charge of the case (35).

The need for placing under supervision all practising mid-wives in England has already been recognised in the Mid-Wives Act of 1902, and the following memorandum submitted to the Local Government Board contains some illustrations of the need for similar supervision here:—

MEMORANDUM ON THE NEED FOR PLACING THE PRACTICE OF MIDWIVES UNDER SUPERVISION.

The suggestion that the Midwives Act, 1902, or the principle which it expresses, should be applied to Scotland arose first, I think, in connection with recent effort on the part of Local Authorities to reduce the rate of infant mortality.*

From this it may follow that the views which may be taken of the suggestion will differ with the character of the population in different areas, and that, on the whole, the value of its provisions will be more keenly appreciated in densely populated centres than in rural districts.

* Proceedings of the National Conference on Infantile Mortality, held in London in June, 1906.—Resolution:—"That, in the opinion of this Conference, the Midwives Act, 1902, should be extended to Scotland and Ireland."

It may be recalled that, while the English Act was still under discussion as a Bill in Parliament, considerable opposition was offered to its principle, on the ground that it would legalise a low grade practitioner of medicine, and it was suggested, as an alternative, that by reorganising existing agencies every woman in child-bed should be able to procure the attendance of a qualified practitioner, whose fee should be paid, where necessary, by the Poor Law Authorities.

These incidents are here referred to because they outline the arguments of many opponents whose knowledge of the subject-matter of the Bill would ensure careful consideration of any opinion they expressed.

But they fail to gain one's acquiescence, I think, chiefly because sufficient allowance does not seem to have been made for existing customs. Midwives are an established part of our social economy. No Bill for their abolition would, I imagine, gain a respectful hearing, and the alternative suggested implies a recasting of one part of our Poor Law Administration. Besides, it has not been shown that midwifery, practised by women, is invariably or necessarily bad. It is the existence of the illiterate, untrained, and uncontrolled midwife which constitutes a danger, and it is her suppression which the English Act aims at.

The following observations are, therefore, made with this object rather than as suggesting an administrative measure against which it may be possible to urge certain economic and other disadvantages.

They will probably gain something in clearness also if put on the form of answers to two questions—

(1) To what extent does practice by midwives prevail in this district? and

(2) What evidence is there that they have training requisite to the emergencies which may arise?

I am at the present moment able only to answer the first of these questions from a comparatively limited area of inquiry, but since March, 1906, a continuous record has been kept of the nature of the attendance on each birth occurring in a portion of the Cowcaddens Ward of Glasgow, and, from a knowledge of local circumstances, I think the proportions referable to the births in this Ward will be fairly repeated in some other portions of the City, as, for example, Stobcross, Finnieston, Calton, and Gorbals.*

The facts thus elicited are these—

Of a total number of 941 births till 31st December, 1906, the nature of the attendance was as follows:—

		Per cent.
Medical Practitioners, ...	209	21·0
Maternity Hospital (Outdoor Nurses), ...	43	4·6
Scotia Street Training School for Nurses, ...	193	20·5
Dundas Street Training School for Nurses, ...	51	3·4
Woman, ...	409	42·4
Poorhouse, ...	9	0·9
Not found, ...	12	1·3
Not visited, ...	15	1·6

It would thus appear that of the total number of births occurring in this district during the nine months, 21 per cent. only were attended by medical practitioners, and 31 per cent. by nurses attached to one or other of the training schools,† while 42 per cent. were attended by what the Maternity Hospital are in the habit of calling the "handy woman" of the district. The best complexion which these facts bear is, I think, to assume that 21 per cent. were attended by medical practitioners, and 31 per cent. in addition were attended by nurses acting under medical direction. There remains, however, 42 per cent. of the births where the attendance was by women whose training and fitness may be indicated in answering the second of the queries already stated.

* I am informed by Practitioners in Maryhill and Partick that there is a rapidly growing preference for Midwives in certain parts of these places, but I have no information as to the cause of this.

† My impression is that the training obtained in these schools is not uniform. In some cases the training school nurses were changed frequently if not daily. Some were in a hurry and did not wash the child, others recommended breast milk as an eye-wash for ophthalmia.

In a subsequent group of 579 births in the same area the qualifications of the women who were not nurses from training schools were separately classified, and the attendance on 519 of the total (in 60 cases the question not being asked) was as follows:—

		Per cent.
Medical Practitioner, ...	103	19·8
Maternity Hospital (Outdoor Nurses), ...	18	3·5
Scotia Street Training School, ...	128	24·7
Dundas Street Training School, ...	19	3·7
Certified Midwives (6 in number), ...	182	35·1
Woman, ...	34	6·5
No information, ...	35	6·7
	519	100·0

The Training and Customs of Midwives presently Practising.

This portion of the enquiry was directed with the object of discovering what proportion of women practising midwifery in Glasgow held certificates of proficiency from a training school or hospital, and, whether certified or not, what their practices were. It is impossible to say how many women practise midwifery in Glasgow, but the information embodied in the grouping which follows was obtained at interviews with 134 out of about 146, whose names and addresses could be ascertained. It may facilitate a comparison of their customs to group them according to whether they are or are not certified. The number certified was 88, and uncertified 46.

Certified Midwives.

Training Schools.—The number holding certificates and the schools granting them are as follows:—

Dundas Street Training School, Glasgow, ...	54
Maternity Hospital, Glasgow, ...	18
Scotia Street Training School, Glasgow, ...	4
Maternity Hospital, Edinburgh, ...	3
Central Midwives' Board, London, ...	4
Maternity Hospital, Dublin, ...	1
No information, ...	4
	88

An effort was made to express the general fitness of these women for the work they undertake by a reference to their customs.

Use of Equipment.—21 carried in their pockets whatever instruments, such as syringes, or catheters, or disinfectants, they deemed necessary, and 11 who had bags misused some of the material which they carried therein. For example, although 59 carried a Higginson's syringe, 22 confessed to using this alternately for rectal and uterine purposes, frequently for the same patient, and always without any effort to disinfect, save by external rubbing.

Use of Thermometer.—22 carried no thermometer, and were quite unable to satisfy enquiry that they could appreciate the advent of conditions requiring medical assistance.

Uncertified Midwives.

Of these there were 46.

Length of Time in Practice.—This varied from a few months to 40 years. Several in this grouping alleged that they only attend when a practitioner is present or is visiting the case, but this could not be verified, and is not supported by the ascertained facts in Cowcaddens.

Use of Equipment.—40 here also carried in their pockets whatever material they thought necessary. Of those who carried certain equipment in a bag, some were unacquainted with their use. 14 used a Higginson's syringe for the double purpose already alluded to, and none of them indicated any appreciation of the relation of infection to puerperal illness.

None of them seemed to have any clearer appreciation of the conditions under which medical advice might be required, either during or after labour, than is patent to the apprehension of any woman with an experience of family life.

Use of Thermometer.—One carried a thermometer, with the use of which she was unacquainted, and some did not recognise a thermometer when shown it.

Taking them as a whole, the uncertified woman was less tidy in her appearance than the certified one.

General.

It may be suggested that the foregoing facts have reference rather to the relation of the midwife to the occurrence of puerperal fever than to any direct influence which they may exercise on the child. It emerged, however, during these interviews, that some of these women believe that certain devices may be adopted to prolong labour with the object of producing still-birth; and Dr. Smellie's enquiry in the Cowcaddens district brought to knowledge the existence in the Garngadhill district of Glasgow of a somewhat extensive use of *aborti-facients*. So prevalent, indeed, is the custom said to be here, that the better-class midwife refuses to attend to such cases. Were all the midwives under supervision, and compelled to comply with some code of regulations, it does not seem to be unreasonable to expect that one field of information could be opened up which could scarcely fail to give opportunity of removing some of the causes of infant mortality in given districts.

Assuming the principle expressed in the Act to be capable of useful application in Scotland, it remains to consider whether the Act in its present form is the best way in which this may be given effect to. Scotland is not presently represented on the Central Midwives' Board, and this would necessarily require to be provided for if the Act is to be accepted in its present form. But, in addition, certain difficulties would appear to have arisen in connection with the carrying out of the Act, particularly in respect that no provision is made for a fee to the practitioner who may be called in to assist in the management of a protracted or abnormal case by a midwife. These seem, however, to be easily remediable details of application.

A. K. CHALMERS.

PLAGUE.

Two cases of plague were recorded during the year, and the circumstances were reported to the Health Committee as follows:—

(*Extract from Minute of 13th November*, 1907.)

PLAGUE.

During the first fortnight of the period under review—that is, towards the middle of October—a case of plague was admitted to hospital. The patient, a boy, is now free from infection and progressing towards recovery. When this case occurred it was also established that a death in August last had been due to a like cause. Both were removed from the same district of the City.

The Paris Convention, which in 1903 replaced that of Venice, made considerable alteration in the procedure which follows the occurrence of an isolated case such as has been described. Article 7 provides that such an occurrence does not constitute an infected area, and that the measures prescribed by the Convention for infected areas are not to be put into operation. Article 9 provides that any area which may have been declared infected ceases to be so five days after the death or isolation of the last case in hospital.

The following special reports on the occurrence of these cases were made to the Local Government Board, and have since been published by them:—

PLAGUE IN GLASGOW.—REPORT BY MEDICAL OFFICER OF HEALTH ON THE CIRCUMSTANCES UNDER WHICH TWO CASES OF PLAGUE OCCURRED IN 1907.

During October a boy (D. L.) was admitted to hospital with clinical symptoms of plague, and the opinion thus formed was subsequently confirmed by bacteriological enquiry.

The verification in this case was obtained on 23rd October, and on the same day a bacteriological enquiry which was being conducted by Dr. Buchanan into the nature of some material obtained from a patient (C. M.), who had died in hospital on August 31, was completed, and established the existence of plague in this girl also.

It is desirable, therefore, to relate the cases in the order of their occurrence, and to refer to certain other illnesses among persons residing in the same district of the City, as both patients already alluded to.

Case I.—C. M., aged 17, worker in a rag store, and residing at 5 Thistle Street, sickened 17th August, and was admitted to the Royal Infirmary on 23rd August.

The illness was of a puzzling character. She had an ulcer on the right leg, and there was some slight affection of the glands in the right groin. There was a papular rash over the face and over practically all the rest of the body. The papules were of a dull red colour. They were discrete on the arms and legs. At the infirmary a provisional diagnosis of anthrax or typhus was made, and the patient was removed to Belvidere Hospital on 29th August. Here she was examined and kept under supervision by Dr. Brownlee, the Medical Superintendent. He was able to exclude the diagnosis of anthrax. He kept before himself the possibility of plague, but the eruption was of such a peculiar nature that he was inclined to regard the case as an anomalous one of confluent smallpox. From the clinical symptoms alone it was impossible to determine the nature of the disease. The patient died on 31st August, two days after admission. A *post-mortem* examination was made on 1st September by Dr. Buchanan. A large number of enlarged brownish and red hæmorrhagic glands were seen; matter from them was examined microscopically, and organisms suggestive of degenerate plague bacilli were found. Mice were at once inoculated, but the results were inconclusive. The bacilli were cultivated through successive generations, and gradually increased in virulence until, as already stated, on October 23, the inoculated mice died with characteristic symptoms of plague. (See Bacteriological Report appended.)

On September 2, the day following the *post-mortem* examination, 16 persons, consisting of the inmates of the patient's household, and others in close association with it, were removed to the Reception House, and there kept under observation until September 21.* Meanwhile the house, &c., was disinfected, and the owners of the rag store, where the patient was employed, were seen, and information obtained regarding the sources from which they obtained their rags.

Effort also was made by using guinea-pigs as flea-traps to obtain specimens of the fleas infesting both the house and rag store, but without success.

Those were the only cases of plague occurring; but certain other illnesses took place in the neighbourhood of the residence of both patients, and, as some were rapidly fatal, a suspicion arose that they also were due to the same disease.

(*A*) C. M., aged 2, 121 Govan Street. This child sickened on 5th, and died on 7th September. She had been playing with the children K., afterwards referred to. The symptoms of her illness were all characteristic of cerebro-spinal meningitis. This was the original diagnosis of the medical practitioner who saw the child, and it was not until the K. children died that he was inclined to revise his opinion. But the evidence is conclusively in favour of his original diagnosis. No *post-mortem* examination was made in this case; but of the three children K., two were examined *post-*

* Two of these (D. H. and M. M.) will be afterwards referred to, owing to the suggestion that they also suffered from plague.

mortem, and the conclusion come to in their case is entirely justifiable in the case of M., who was so intimately associated with them. The facts as to the K. children are as follows:—

(*B*) H. K., aged $3\frac{4}{12}$, 121 Govan Street. This child sickened at 5 p.m. on 8th September. She "felt tired," and went to bed complaining of pain from a fall in the street. The mother states that there was a lump on the back of the head, and that she had directed the attention of the medical attendant to this. There was also a history of pain in the right thigh. But no contusion of the head was seen *post-mortem*, and no swelling of the thigh. At 11 p.m., that is, six hours after feeling ill, the patient vomited. The mother could describe no other symptoms as present. The child died on 10th September (morning). Clinically, the case was not typical of advanced cerebro-spinal meningitis, but many recorded cases present symptoms like these. The absence of marked tonicity of muscle lends a certain colour to the view that the case was not cerebro-spinal meningitis; but the *post-mortem* examination leaves no doubt whatever. (See below.)

(*C*) P. K., aged 2, 121 Govan Street. This child sickened at 8 p.m. on 8th September. He complained of pain in the head. There was tonic spasm of the muscles, with marked pronation of the forearm. He died on 9th September.

(*D*) J. K., aged four months, 121 Govan Street. This child sickened about midnight on 9th September, and died at 8.30 a.m. on the 10th.

The practitioner in attendance informed me of these cases on the evening of September 9, and that night I saw them with him and Dr. Brownlee, and, although entertaining the opinion that plague might be excluded on the evidence, it appeared to me desirable, when on the following day all three had died, to ask permission to examine the bodies *post-mortem*, and all three were removed to Belvidere Mortuary for this purpose.

In two of the children the evidence of cerebro-spinal fever was so conclusive that the examination of the third child was limited to a lumbar puncture, with the result that the meningococcus intracellularis was recovered from the fluid thus obtained.

The evidence in favour of cerebro-spinal fever was conclusive. The organism was recovered from the brain and naso-pharynx in H. K., and from the naso-pharynx in J. K., while in P. K. it was obtained from the cerebro-spinal fluid. On the other hand, there was no plague bacilli in the blood or on cultures from the various organs.

(*E*) A. Y., aged 8, 22 Crown Street. No medical man had seen this child during her illness, but from subsequent inquiry the following facts were ascertained:—She sickened on 27th September. The mother stated that the child's head was violently thrown back, and that she could not "bear to be touched;" that she had convulsions on the morning of the 28th; and that she died the same day. Dr. Bain, who saw the patient after death, elicited the history of a fall. He certified the case as cerebro-spinal meningitis. When the boy D. L., who lived on the same stair, sickened, inquiries were made regarding A. Y., whose name had been returned in the periodical return of deaths. This inquiry was made nearly three weeks after the death. Meanwhile, the child had been buried. No *post-mortem* examination had been made. The only reason for suggesting plague as the cause of death here is the association with the boy D. L.

Case II.—D. L., aged 6, 22 Crown Street. This is the only patient recognised clinically as suffering from plague. He lived on the same stair as A. Y. His sister worked in the same rag-works as C. M. and M. M. All three, therefore—C. M., D. L., and M. M.—are thus more or less directly associated with the rag-works already alluded to.

(*F*) M. M., aged 19, 5 Thistle Street. This girl is a sister of C. M., who died on August 31. She had been kept under observation at the Reception House from 2nd to 21st September, on account of the suspicious illness of her sister. But she was discharged in due course without manifesting any symptoms of plague. On the 14th October, at the request of her medical attendant, she was admitted to Belvidere Hospital. There had been some slight sickness and vomiting on 11th October, and, when she was examined in hospital on 14th, a slight swelling was noticed in the left axilla. The slight enlargment (the gland had been about the size of a bean) gradually

disappeared. It had always been quite movable, very slightly tender to pressure, but there was never any pain. At the time of admission, and during the period in hospital, the temperature remained normal. Dr. Brownlee gave it as his opinion that he did not regard the case as "important in any sense." The enlargement of the gland disappeared, and the girl was dismissed well on 24th October.

Agglutination tests with the blood in dilutions of 1-10 and 1-50, both for periods of two and twenty-four hours, were wholly without indication of reaction.

(*G*) D. H., aged 60, 5 Thistle Street. This man was a lodger in the family of C. M. (Case I.). He had been removed to the Reception House, and remained there from 2nd to 21st September. On 21st October, at the request of his medical attendant, he was again removed to the Reception House. He was kept under observation, but he was not at any time regarded as ill of any acute disease. He was discharged on 26th October. His temperature was normal during the whole of both visits to the Reception House.

Source of Infection. — These being the circumstances under which the cases occurred, it may be asked whether any association is likely to have existed between them and the cases occurring in 1901. A strain of rat infection might be assumed, but the inquiry which has been maintained ever since the former cases occurred has failed to discover any rats suffering from the disease since 1902, in which year no human cases occurred. The following Table shows the number examined annually, and the source:—

Number of Rats Examined in Several Years.

Year.	Where Caught.						Total.	
	Shipping (Foreign).		Docks.		City.			
	Number Examined.	Number Infected.	Number Examined.	Number Infected.	Number Examined.	Number Infected.	Number Examined.	Number Infected.
1900 (4th Sept.—23rd Nov.),	12	...	...	...	314	...	326	...
1901 (from 1st Feb.),	11	...	...	...	1,630	122	1,641	122
1902, ...	5	...	...	...	6,487	30	6,492	30
1903, ...	335	...	18	...	2,424	...	2,777	...
1904, ...	992	...	360	...	900	...	2,252	...
1905, ...	350	...	29	...	284	...	663	...
1906, ...	490	...	...	...	542	...	1,032	...
1907.	44	...	..	...	96	1	140	1

The rapid decrease in the numbers obtained from City sources fully represents the difficulty of obtaining specimens when public interest is not aroused by the occurrence of actual cases of the disease.

The press notices of plague at the time of its occurrence, however, led to the body of a rat being brought to the laboratory for examination on 7th November, and from this animal the organism of plague was recovered.

It was then ascertained that about the middle of October offensive smells began to be felt in the buildings of the Kinning Park Police Station, and that work had been begun on 29th October with a view to discovering the cause thereof. This had resulted in the discovery of 31 dead rats in various stages of decomposition. All save the one alluded to had been removed to the destructor of the Cleansing Department with the ashpit refuse.

Of the 31 dead rats found, 13 were under the floor of the Magistrates' room, 3 in the Court Hall, 2 in the Muster Hall, 8 in the kitchen of the Inspector's house, and 5 in the bath-room. The Court Hall is now only used for the meeting of a Bible class, numbering 100, on Sundays, but no case of disease occurred either among the members or among the persons who lived in or used the premises daily.

Against the gable of the Muster Hall is built the stables of an adjoining bakery, and in a loft over the stables it was customary to keep grain and other feeding for the horses, and to renew it at fortnightly intervals. About 21st October, that is about a week before the cause of the smells in the Police Buildings began to be inquired into, about 20 dead rats had been found underneath the grain bags. These all had the appearance of dying about the same time, and at a date apparently more recent than those found in the Police Buildings.

On the other hand, the smells began to be felt in the Police Buildings about 19th September, and no sounds of living rats had been heard after 31st October.

This would seem to suggest that the rats of the Police Buildings were first attacked, and those of the stables infected thereby. There was a rat run, through defects in the intervening gable, between the spaces behind the plaster and beneath the floors of the Police Station Buildings and the stable loft. The earlier development of the disease among the rats of the Police Buildings suggests that it was not imported to the stables in the sacks of grain from time to time stored therein. All the rats found in the bakery stables had been cremated in the boiler furnace thereof.

The situation of these buildings is fully a mile westward of the area in which the two patients resided.

Question of Infection by Rags.—The fact that one of the patients was a rag-worker, and that the sister of the other was employed in the same works, directed attention to the rag store as a possible source of infection. Home rags only were dealt with; but it is obvious that rags may reach the merchant under this designation which in reality are foreign in their origin, in the sense that they have formed the clothing of some recently arrived immigrant or returned seaman.

The building in which the work of the rag store is carried on is of four storeys. The ground floor is used almost wholly for the unpacking of bales as they come in, and for the final repacking for export; the first and second floors are devoted largely to storage purposes; while on the upper floors only manufacturers' rags, which are new, are handled.

The patient C. M. and the sister of D. L. both worked on the bottom floor, and this was regarded as at least suggesting that the source of D. L.'s illness might have been from fleas transmitted in his sister's clothing. That she was not naturally immune to the plague was excluded by the circumstances that her blood gave no reaction to the agglutination test in the dilutions already stated, so that the explanation of the two cases seems for this reason to be thrown back on the possibility of rat infection in their domiciles. But, as has been said, no affected rats were discovered there, although it may be noted, as having some possible bearing on the origin of the two cases, that two tenements which had formed back lands between the houses occupied by D. L. and C. M. had been demolished shortly before the cases occurred, and that many rats were in consequence displaced thereby.

Incidentally to the question of infection by rags, Dr. Buchanan endeavoured to ascertain what length of time fleas might live therein apart from opportunity of feeding on some warm-blooded animal. He found that fleas kept in test tubes remained vigorous up till at least eight days after they had been caught, and presumably been last fed.

Accompanying this is a report by Dr. Buchanan on the results of the *post-mortem* examination and bacteriological inquiries made by him.

(Signed) A. K. CHALMERS.

REPORT BY THE CITY BACTERIOLOGIST ON TWO CASES OF PLAGUE, AND ON OTHER CASES GIVING RISE TO A SUSPICION OF PLAGUE, WITH NOTES ON THE EXAMINATION OF FLEAS AND RATS AND ON A NEW CULTURE MEDIUM FOR BACILLUS PESTIS.

Plague.

Case I.—C. M.—On 1st September I made a *post-mortem* examination in the case of a young woman who had died at Belvidere Hospital on 31st August with symptoms of a very indefinite nature. The illness was masked by an ulceration of the leg, which at first suggested anthrax, and latterly by a skin eruption which passed through phases, at first somewhat resembling typhus, and latterly smallpox. Lesions were found in the glands and lungs very characteristic of plague, and the microscopic examination of the morbid products revealed the presence of bacilli indistinguishable from bacillus pestis. The bacilli, however, were all more or less degenerated to a degree indicative of an illness of eight to ten days' duration, making it probable that the inoculation tests would be negative or delayed in their results. This proved to be the case, and it was not until the 23rd October, after repeated cultures and inoculation tests, that the signs of plague were produced in a characteristic manner in the animals.

Post-mortem Examination on 1st September, 1907, of C. M., *æt.* 17 years, 5 Thistle Street, removed from the Royal Infirmary to Belvidere Hospital on 29th August as "Typhus" (?), died 31st August, 1907.

External appearances—The body is exceptionally well developed and well nourished. The face shows an eruption of white papules, somewhat resembling the early stage of smallpox in a dusky, livid skin. Each papule appears as a hypertrophied follicle. The arms and legs also present papules very slightly raised, which are widely separated and dusky brown. Over the right tibia (external aspect), midway between knee and ankle, there is a healing ulcer ¼ inch in diameter. The skin around it for ⅛ inch is dusky, but there is no induration or œdema. In the right inguinal region there is slight fullness as compared with the left.

The pericardium contains a large quantity of clear blood-stained fluid. Heart is soft, the muscle showing marked cloudy swelling; valvular structures normal.

The lungs are studded throughout with areas of greyish condensation, varying in diameter from ¼ inch to 1 inch. They appear as pneumonic necrotic areas equally distributed throughout both lungs.

The bronchial and mediastinal glands are much enlarged, soft, and some of them semi-fluid, the fluid being brownish, viscid, and grumous.

The spleen is much enlarged and very soft, the cut surface being variegated and reddish. No yellow foci observed.

The kidneys are slightly enlarged, especially the left, much congested, and studded throughout with widely separated minute yellow nodules.

The liver is slightly enlarged, very pale, and shows marked cloudy swelling. No yellow foci visible.

The pancreas is much congested.

On bisecting the ulcer over the right tibia the subcutaneous tissue is found normal.

A section through the skin and subcutaneous tissues in the course of right ilio-femoral vessels reveals a chain of very large brownish-red hæmorrhagic glands, varying greatly in size, the largest measuring 2 inches by 1 inch, and the smallest ¼ inch in diameter. This chain is found to continue upwards along the course of the iliac vessels and vena cava on the right side.

The pelvic glands on the right side are similarly enlarged and hæmorrhagic.

The left femoral glands are also much enlarged, but only one of them shows hæmorrhage and necrosis.

The duodenum is intensely congested and œdematous; but the intestine in its other parts and the stomach appear normal.

Cultures on Glycerine Agar.—Bubo yields growth of a short gram-negative cocco-bacillus.

Microscopic Examination.—Films from the various buboes and the lungs show bacilli characteristic of plague, but more or less degenerated. No trace of similar organisms in the spleen.

Inoculation Experiments.—Inoculation experiments carried through a series of animals gave results which were at first indefinite, owing apparently to the attenuation of the virus, but which became more and more marked and characteristic of plague as the virulence was enhanced. Thus, at the outset, mice inoculated with material direct from the organs died in from four to ten days with lesions which were not typical of plague, while latterly mice died within two days, and showed lesions very characteristic of the disease.

Plague or Cerebro-Spinal Fever?

Case II.—K. Family.—On 10th September (acting under a Sheriff's warrant) I made a *post-mortem* examination at Belvidere Hospital of three children named K., who died at their residence in Govan Street, Glasgow, on 9th and 10th September, for the purpose of ascertaining the cause of death, in view of the fact that the acute nature of the symptoms raised the question of plague infection. The examination in each case clearly indicated cerebro-spinal fever as the cause of death, and afforded no evidence whatever of plague infection.

The following are the reports of the *post-mortem* examinations and of the microscopical and cultural tests relating thereto:—

(H. K., æt. $3\frac{4}{12}$ years (died 10th September, 1907).

Body well nourished. A number of purpuric spots on the chest, abdomen, arms, and legs. There is no bubonic enlargement of cervical, axillary, or inguinal glands.

Heart normal.

Lungs marked hypostatic congestion in both. No consolidation or hæmorrhage.

Liver presents in a very striking degree yellow necrotic (?) areas, chiefly on the anterior surface towards the lower border. Each of these pale areas is demarcated by a zone of congestion.

Spleen is considerably enlarged; soft and malpighian bodies appear very prominent on section. Shows no hæmorrhage.

Kidneys much congested.

Bladder shows some capillary hæmorrhage in its mucous membrane.

Intestines.—Coils of small intestine as exposed on opening abdomen present a number of hæmorrhagic spots under the peritoneum. Mucous membrane of small intestine shows at intervals purpuric spots most numerous in ileum, but there are some less defined areas of hæmorrhage; also in the duodenum, Peyers patches are congested and swollen. Large intestine presents a very striking appearance, and is similar to large intestine of Baby K., excepting that rugæ and follicles are congested and hæmorrhagic along the whole length of the colon.

Mesenteric glands are much enlarged, and some of them calcareous and pigmented. There is no noteworthy congestion of any of them.

Brain.—Pia arachnoid is very hyperæmic, the vessels traversing the convolutions being all very much engorged, as well as the larger vessels in the sulci. The surface of the convolutions has a rose tint. At several points there are areas of capillary hæmorrhage. In all the deeper sulci over the whole surface yellow exudation appears, and in sylvian fissures it extends along the course of the vessels. There is no exudation in optic chiasma, or around pons or medulla, but it appears in faint traces on cerebellas surface. Lateral ventricles not dilated, but in the floor of the left there is considerable hæmorrhage.

Microscopical Examination—

Meningeal exudate, ...	Meningococci (scanty).

Cultural Tests—

(*a*) Meningeal exudate, ...	Growth of meningococcus (scanty).
(*b*) Naso-pharyngeal secretion,	Growth of meningococcus (very abundant).
(*c*) Blood, ...	Negative.

J. K., ÆT. $\frac{4}{12}$ YEAR (DIED 10TH SEPTEMBER, 1907).

Body well nourished. A number of small purpuric spots on face, neck, chest, arms, and legs. The cervical, axillary, and inguinal glands present no noteworthy enlargement.

Thymus gland enlarged, weighing $1\frac{1}{2}$ ounces. On its surface are some very minute petechial hæmorrhages. The left lobe is hæmorrhagic throughout, causing it to have a mottled appearance.

Lungs.—Several petechiæ are visible on surface of left lung. Both otherwise normal.

Liver.—Surface of right lobe shows several pale yellowish areas, and over a considerable area of the surface there is evidence of capillary hæmorrhage.

Spleen slightly enlarged, of firm consistence, and mottled throughout by capillary hæmorrhages.

Mesenteric glands of large intestine enlarged and uniformly congested. Those of ileum are much enlarged, but not specially congested.

Heart normal.

Intestines.—On opening intestine mucous membrane of the colon is much congested, while the follicular structures are swollen, red, and hæmorrhagic. Small intestine is normal.

Stomach normal.

Brain.—There is a distinct amount of congestion, giving the surface a distinctly pinkish tint, but mapping out the marking of all the sulci by deeply engorged vessels. There is no evidence whatever of exudation, but there is some dilatation of the ventricles. About two drachms clear fluid appeared in cisterna magna.

Kidneys normal.

Bladder shows capillary hæmorrhages in mucous membrane.

Microscopical Examination—

Meningeal exudate (very scanty),	Polynuclear leucocytes; no meningococci found.

Cultural Tests—

(*a*) Meningeal exudate, ...	No growth of meningococcus.
(*b*) Naso-pharyngeal secretion,	Very abundant growth of meningococcus.
(*c*) Blood, ...	Negative.
(*d*) Mesenteric gland (colon), ...	Negative.

P. K. ÆT. $2\frac{1}{12}$ YEARS (DIED 9TH SEPTEMBER, 1907).

The examination of the two foregoing cases having indicated the cause of death, it was not deemed essential to make a complete dissection in this case, more especially as ample confirmatory evidence of meningitis was at once obtained from 10cc. of turbid fluid withdrawn by lumbar puncture from the spinal canal.

It may be stated that there was no trace of bubonic enlargement of any of the superficial glands.

Microscopical Examination—

Fluid obtained by lumbar puncture, ...	Large number of Polynuclear leucocytes in a few of which meningococci were found.

Cultural Tests—

(*a*) Spinal fluid, ...	Negative.
(*b*) Naso-pharyngeal secretion,	Very abundant growth of meningococcus.

Plague.

Case II.—D. L.—On 18th October material was obtained from an inguinal swelling in a boy, D. L., *æt.* 6 years, who was admitted to Belvidere Hospital from the same locality (22 Crown Street), and from a series of microscopical, cultural, and experimental tests, extending over five days, the illness was clearly demonstrated to be plague.

Microscopical Examination of Fluid from Inguinal Bubo. — Bipolar gram-negative bacillus found, though not in large number.

Cultural Tests.—Viscid greyish growth of cocco-bacillus gram-negative.

Inoculation Experiments.—The organism killed mice within two days, and a guinea-pig within three days, with the lesions typical of plague, namely, reddening of the skin and subcutaneous tissues, formation of buboes, and splenic enlargement. One mouse which survived to the sixth day presented an enlarged spleen remarkably marbled with the yellowish white necrotic foci so characteristic of the disease.

Agglutination Tests—

7th, 11th, 12th, and 14th November,	1 : 10	10 to 30 minutes	Positive.
	1 : 50	½ to 1 hour	„
	1 : 100	½ to 2 hours	„

E. W. or S.—Another case raising a suspicion of plague was that of an elderly woman (E. W., or S.), *æt.* 50 years, who had died somewhat suddenly in the same district (49 Adelphi Street) with symptoms of an indefinite nature. A *post-mortem* examination, held at Belvidere Hospital on 24th October, entirely excluded any question of plague.

Agglutination Tests Applied to Two Suspected Contacts.

M. M. and S. L.—Specimens of blood were obtained from (1) M. M. (a sister of the patient, C. M.), who, in addition to being a contact, had suffered from a slight illness characterised by sickness and vomiting and the presence of a trivial glandular swelling of a doubtful nature in the arm-pit; and (2) from S. L. (a sister of the patient, D. L.), who was a contact of both patients, and also under suspicion of having carried infection to her brother.

		M. M.	
11th and 14th November,	1 : 10	2 hours and 24 hours	Negative.
	1 : 50	„ „	„
		S. L.	
11th and 14th November,	1 : 10	2 hours and 24 hours	Negative.
	1 : 50	„ „	„

Examination of Fleas in relation to the Outbreak.

The close association of the outbreak with a rag store—the one patient having been employed in unloading and weighing bales of rags, and cutting them open to determine the nature of their contents, and the other patient having had a sister employed in the same store and engaged in the same work—suggested the possible agency of fleas in the carriage of infection.

Three dozen fleas collected in the rag store and two dozen from contacts isolated in the Reception House were all of the one species—pulex irritans. The experiment of placing guinea-pigs in the rag store and in the house of one of the patients (D. L.) with the view of "trapping" fleas was not attended with any success. The inoculation of an emulsion of the dejecta of five fleas taken from the beds of D. L.'s contacts also proved *negative.*

Plague in Rats.

No trace of plague-infected rats could be got in any kind of association with the two cases, which, it is notable, occurred within the areas originally infected with plague in 1900. A single plague-infected rat, however, was found on 7th November in a

building fully one mile to the westward of the houses in which the two patients had lived. It was the only one received for examination out of 31 which had been found dead, and more or less decomposed, under floors in the building, and, in view of the absence of any other probable cause of death, it must be presumed that the others had also succumbed to plague. Although decomposition was far advanced, the bacillus pestis was recovered in this instance by plate culture on rat agar at room temperature. A subculture proved virulent for a mouse and a rat within 48 and 72 hours respectively.

Rat Agar as a Culture Medium for B. Pestis.

The susceptibility of the rat to plague suggested the use of rat tissues instead of ox flesh in the preparation of a nutrient medium for the growth of bacillus pestis. An extract is made from the carcases of rats deprived of skin, head, stomach, and intestines, and the further preparation of the medium is essentially the same as in that of ordinary agar, except that the extract is boiled for half an hour before straining. Rat agar has been used in the laboratory for a number of years as a culture medium for bacillus pestis with most satisfactory results, growth taking place on this medium with much greater certainty, rapidity, and profusion than on glycerine agar. It is also noteworthy that on this medium the bacillus closely approximates to the form which it assumes in the body, and is sometimes much elongated. In this elongated form it may be difficult to recognise as bacillus pestis, so different is it from the familiar cocco-bacillay growth on glycerine agar.

R. M. BUCHANAN.

UNCERTIFIED DEATHS AND DEATHS WITHOUT MEDICAL ATTENDANCE.

In Tables XLII. and XLIII. the total deaths occurring during the 10 years, 1891-1900, and 1901-7, are stated with the number and proportion *uncertified* and *dying without medical attendance* at *all ages* and *under* and *over five years*, together with a comparison of the proportions as affecting legitimate and illegitimate children under 1 and 5 years respectively, and in Table VII. of Appendix the numbers occurring in each class in the several wards are given. Appendix Table VIII. gives corresponding information regarding the deaths occurring among members of Friendly Societies.

Certification.—At all ages 1·1 per cent. of the deaths were uncertified and less than 1 per cent. had no medical attendance. Under 5 years, however, 1·1 per cent. were uncertified and 1·9 per cent. had no medical attendance. The greatest contrast is furnished by deaths occurring under 1 year. Among legitimate infants the proportion of these uncertified was 1·6 per cent. while among illegitimates it was 2·0 per cent. Of the legitimate children dying under 1 year 47·6 per cent. were insured, an increase of 2·5 per cent. over last year, while among illegitimates the proportion is only 14·1 per cent., a decrease of 0·6 per cent.

In the subjoined figures a comparison is established between the proportion of deaths uncertified in 1906 and 1907:—

Proportion of Uncertified Deaths to Total Deaths Registered in 1906 and 1907.

	Under 5 Years.		Above 5 Years.		All Ages.	
	1906.	1907.	1906.	1907.	1906.	1907.
Total deaths, ...	5,352	5,697	8,765	9,110	14,117	14,807
Not certified, ...	175	61	120	97	296	158
Percentage, ...	3·3	1·1	1·4	1·1	2·1	1·1

TABLE XLII.

GLASGOW, 1907.—CERTIFICATION of DEATHS.

	10 Years. 1891-1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
Total Deaths, ...	149,184	15,716	15,054	14,483	14,794	13,758	14,117	14,807
Of these Uncertified, ...	4,916	451	412	363	351	288	296	158
Died without Medical Attendance,	2,638	240	217	162	151	142	143	126
Deaths under 5 years, ...	62,350	6,390	5,364	5,816	5,913	5,502	5,352	5,697
Of these Uncertified, ...	3,027	274	244	228	210	166	175	61
Died without Medical Attendance,	1,738	163	138	116	108	93	93	107
Deaths above 5 years, ...	86,834	9,326	9,690	8,667	8,881	8,256	8,765	9,110
Of these Uncertified, ...	1,889	177	168	135	141	122	120	97
Died without Medical Attendance,	900	77	79	46	43	49	50	19
Percentage of Total Deaths Uncertified, ...	3·3	2·9	2·7	2·5	2·4	2·1	2·1	1·1
Percentage of Total Deaths which occurred without Medical Attendance, ...	1·8	1·5	1·4	1·1	1·0	1·0	1·0	0·9
Percentage of Deaths under 5 years Uncertified, ...	4·9	4·3	4·5	3·9	3·6	3·0	3·3	1·1
Percentage of Deaths under 5 years which occurred without Medical Attendance, ...	2·8	2·6	2·6	2·0	1·8	1·7	1·8	1·9
Percentage of Deaths above 5 years Uncertified, ...	2·2	1·9	1·7	1·6	1·6	1·5	1·4	1·1
Percentage of Deaths above 5 years which occurred without Medical Attendance, ...	1·0	0·8	0·8	0·5	0·5	0·6	0·6	0·2

TABLE XLIII.

GLASGOW, 1907.—COMPARATIVE CERTIFICATION of LEGITIMATE and ILLEGITIMATE CHILDREN.

	10 Years. 1891-1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
Legitimate Deaths under 1 year,	30,304	3,203	2,800	3,116	3,173	3,161	2,794	2,727
Of these Uncertified, ...	1,853	193	174	167	143	144	132	43
Legitimate Deaths, 1—5 years, ...	26,066	2,614	2,063	2,109	2,206	2,340	2,043	2,495
Of these Uncertified, ...	476	41	28	23	30	22	19	10
Illegitimate Deaths under 1 year,	4,202	399	368	447	402	406	391	348
Of these Uncertified, ...	551	34	39	36	32	28	22	7
Illegitimate Deaths, 1—5 years,	1,778	174	133	144	132	130	124	127
Of these Uncertified, ...	147	6	3	2	5	2	4	1
Percentage Legitimate Deaths under 1 year Uncertified, ...	6·1	6·0	6·2	5·4	4·5	4·6	4·7	1·6
Percentage Legitimate Deaths, 1—5 years, Uncertified, ...	1·8	1·6	1·4	1·1	1·4	0·9	0·8	0·4
Percentage Illegitimate Deaths under 1 year Uncertified, ...	13·1	8·5	10·6	8·1	8·0	6·9	6·1	2·0
Percentage Illegitimate Deaths, 1—5 years, Uncertified, ...	8·3	3·4	2·3	1·4	3·8	0·3	4·0	0·8

TABLE XLIV.

GLASGOW, 1907.—INSURANCE of LIVES in FRIENDLY SOCIETIES, with COMPARISON of INSURANCE of LEGITIMATE and ILLEGITIMATE CHILDREN.

	10 Years. 1891-1900.	1901.	1902.	1903	1904.	1905.	1906.	1907.
Total Deaths, ...	149,184	15,716	15,054	14,483	14,794	13,758	14,117	14,807
Of these Insured, ...	87,824	9,386	9,001	8,734	9,080	8,628	8,918	9,752
Deaths under 5 years, ...	62,350	6,390	5,364	5,816	5,913	5,502	5,352	5,697
Of these Insured, ...	33,333	3,405	2,747	2,993	3,148	3,023	2,918	3,361
Deaths above 5 years, ...	86,834	9,326	9,690	8,667	8,881	8,256	8,765	9,110
Of these Insured, ...	54,491	5,981	6,254	5,741	5,932	5,605	6,000	6,391
Legitimate Deaths under 1 year,	30,304	3,203	2,800	3,116	3,173	3,161	2,794	2,727
Of these Insured, ...	13,052	1,374	1,117	1,309	1,389	1,228	1,257	1,298
Illegitimate Deaths under 1 year,	4,202	399	368	447	402	406	391	348
Of these Insured, ...	434	50	40	57	44	52	58	49
Legitimate Deaths, 1—5 years, ...	26,066	2,614	2,063	2,109	2,206	2,340	2,043	2,495
Of these Insured, ...	19,232	1,931	1,540	1,570	1,662	1,698	1,555	1,948
Illegitimate Deaths, 1—5 years,	1,778	174	133	144	132	130	124	127
Of these Insured, ...	615	50	50	57	53	45	48	66
Percentage of Total Deaths Insured,	58·9	59·7	59·8	60·3	61·4	62·7	63·2	65·9
Do. Deaths under 5 years Insured, ...	53·5	53·3	51·2	51·5	53·3	54·9	54·6	59·0
Do. Deaths above 5 years Insured, ...	62·8	64·1	64·5	66·2	66·8	67·9	68·4	70·2
Do. Legitimate Deaths under 1 year Insured, ...	43·1	42·9	39·9	42·0	43·7	38·8	45·1	47·6
Do. Illegitimate Deaths under 1 year Insured, ...	10·3	12·5	10·9	12·7	10·9	12·8	14·7	14·1
Do. Legitimate Deaths, 1—5 years, Insured, ...	73·8	73·9	74·6	74·4	75·3	72·6	76·1	78·1
Do. Illegitimate Deaths, 1—5 years, Insured, ...	34·6	28·8	37·6	39·6	40·2	34·6	38·4	52·0

RABIES.

During the year the police reported that 155 persons had been bitten by dogs, in 11 of whom the injury inflicted was classified as "severe," while the remaining 144 were of a more or less trifling character.

The highest number occurred in the month of June, and the lowest in December.

The numbers occurring each month, as well as their character, are shown in the following Tabulation:—

Months.	Severe.	Trifling.	Total.	
January, ...	—	9	9	
February, ...	—	9	9	41
March, ...	3	20	23	
April, ...	1	16	17	
May, ...	—	5	5	47
June, ...	—	25	25	
July, ...	3	19	22	
August, ...	—	9	9	43
September, ...	1	11	12	
October, ...	—	7	7	
November, ...	1	12	13	24
December, ...	2	2	4	
YEAR, ...	11	144	155	

In each case the condition of the animal was inquired into, and the absence of rabies ascertained.

ANTHRAX.

Two cases of anthrax are known to have occurred among hair-workers during the year, and one case of the disease in a food animal was notified by the Inspector of the Local Authority under the Diseases of Animals Act, 1894, in compliance with the requirements of the Anthrax Order, 1899, Section 3.

Cases in Hair-Workers.—The circumstances under which these cases occurred were as follows:—

(1) F. H. W., *æt.* 16, sickened 30th January, died 3rd February. This girl resided in Rutherglen, and was employed in a hair work there, but the death took place in the Royal Infirmary, Glasgow, and information of the occurrence was received through the Factory Department. Inquiry disclosed the fact that the patient had had a "boil" on the back of her neck on 30th January, but had no general symptoms till 1st February.

She was employed as a "swiveller," and the hair handled at this stage of the process of manufacture has previously been exposed to boiling for seven hours, and thereafter to a dry temperature varying from 170° to 240° Fah. for four complete days.

Foreign hog hair and home horse hair were both being worked by deceased during the week preceding her illness, and it was noticed that some grey (foreign) horse hair was kept on the premises, although it was not in use, as the manufacturer believed that this class of hair is to be viewed with suspicion. It was ascertained also that during the week preceding her illness deceased swept the floor of the premises, and the seat of the pustule in her neck suggested that inoculation by the fingers was the probable method of infection.

(2) On 16th October, a girl—C. M., *æt.* 17—was admitted to Belvidere Hospital suffering from anthrax. The affection was in the form of a local sore on the cheek, and most probably had been inoculated by the finger nails.

As usually occurs in the cases of anthrax which have to be dealt with in Glasgow, the girl was a hair-worker, and was employed as a spinner. At this stage of the process of manufacture the hair has already been boiled and dyed, and the foreman of the work is quite clear that it was no part of her duty to handle untreated or raw hair.

In the days preceding the beginning of her illness there had been delivered at the works both foreign and home hair, some American hog hair having been dealt with to completion, while Scotch and Irish horse hair was still under manufacture when she sickened. It sometimes happens, however, that this home hair is mixed with a small portion of hair of foreign origin, and it has been impossible to ascertain whether any hair of this nature was used at the time or immediately before her illness began.

There is reason for believing, however, that hair cannot be completely sterilised by disinfection and still retain its market value unimpaired, and it is more probable that attenuation of the virulence of the organism may be all that the processes in use are capable of accomplishing.

On admission to hospital the affected part was removed, and the patient recovered.

Samples of the hair in use were made the subject of bacteriological inquiry, but with negative results.

Anthrax in Animals.—In April, Principal M'Call, of the Veterinary College, the Inspector under the Diseases of Animals Act, 1894, intimated that a bullock exposed for sale in the Cattle Market had been found to be affected with Anthrax. The animal was bought at an auction sale in Laurencekirk on 8th April, and brought to Glasgow on the following day.

BACTERIOLOGICAL LABORATORY.

During the year, 3,208 specimens of morbid products were forwarded to the laboratory, as compared with 3,232 in 1906. The specimens were submitted by 363 medical practitioners. Of these, 313 (accounting for 2,861 specimens) are in general practice within the municipal boundaries, 20 (accounting for 47 specimens) were resident outwith the boundaries, 21 accounting for 212 specimens) were acting for public institutions, and 9 (accounting for 88 specimens) were connected with the Health Department.

It thus appears that 79·0 per cent. of the medical practitioners engaged in general practice within the City availed themselves of the laboratory for bacteriological diagnosis during the year, and the average number of specimens received from each practitioner was 8·8, compared with 8·7 in 1906.

Dr. Buchanan tabulates the results of these examinations in the following manner, the figures for 1905 and 1906 being introduced for comparison:—

TABLE SHOWING THE NUMBER OF SPECIMENS RECEIVED FROM MEDICAL PRACTITIONERS OF GLASGOW FOR BACTERIOLOGICAL DIAGNOSIS DURING THE YEAR 1907, COMPARED WITH 1905 AND 1906.

MONTH.	DIPHTHERIA.			ENTERIC FEVER.			TUBERCULOSIS.			TOTAL.		
	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.
January, -	71	104	112	58	55	40	108	89	109	237	248	261
February, -	83	138	99	56	48	50	100	105	116	239	291	265
March, -	95	135	100	71	67	56	139	144	127	305	346	283
April, -	94	107	76	75	46	50	92	150	101	261	303	227
May, - -	76	100	102	74	38	65	98	111	122	248	249	289
June, -	62	84	69	56	72	41	55	93	90	173	249	200
July, - -	36	74	58	46	28	39	55	40	74	137	142	171
August, -	61	86	100	64	71	55	73	83	76	198	240	231
September, -	66	113	152	84	70	59	78	70	88	228	253	299
October, -	98	159	166	79	64	53	85	132	127	262	355	346
November, -	116	134	171	43	44	52	93	95	106	252	273	329
December, -	122	123	152	65	60	53	48	100	102	235	283	307
TOTAL. -	980	1,357	1,357	771	663	613	1,024	1,212	1,238	2,775	3,232	3,208
Positive result obtained in -	26·7%	30·1%	30·5%	26·7%	18·1%	25·3%	35·3%	32·7%	32·9%	29·9%	28·6%	30·4%

The 3,208 specimens as above tabulated for 1907 were submitted for diagnosis by medical practitioners as follows:—

2,861 specimens from 313 practitioners within the city.
47 „ „ 20 „ outwith „
212 „ „ 21 „ acting for public institutions.
88 „ „ 9 „ connected with the Health Department.

TABLE SHOWING THE TOTAL NUMBER OF SPECIMENS FROM SUSPECTED CASES OF DIPHTHERIA, ENTERIC FEVER, AND TUBERCULOSIS ANNUALLY SENT TO THE LABORATORY FOR BACTERIOLOGICAL DIAGNOSIS BY THE MEDICAL PRACTITIONERS OF GLASGOW SINCE THE INAUGURATION OF THIS WORK ON 1ST JANUARY, 1900.

Year.	Diphtheria.	Enteric Fever.	Tuberculosis.	Total.
1900, - -	353	543	351	1,247
1901, - -	438	1,048	565	2,051
1902, - -	712	807	847	2,366
1903, - -	997	1,014	932	2,943
1904, - -	928	853	1,010	2,791
1905, - -	980	771	1,024	2,775
1906, - -	1,357	663	1,212	3,232
1907, - -	1,357	613	1,238	3,208
Total, -	7,122	6,312	7,179	20,613

The total number of specimens submitted by medical practitioners for examination during 1907 shows a slight decrease as compared with the preceding year. This is attributable to the fall in the number from suspected cases of enteric fever. This disease has been steadily diminishing in the past four years.

Diphtheria Contacts.

The systematic examination of all persons in more or less intimate contact with cases of diphtheria (commenced in March, 1906) has been continued as far as possible during the year 1907. The number of such contacts for the twelve months amounted to 692, and the presence of the diphtheria bacillus was demonstrated in 48, or 6·9 per cent.

In the ten months of the preceding year the number examined was 322, and 34, or 10·5 per cent., were found harbouring the diphtheria bacillus.

Bellefield Sanatorium.

During the year 233 specimens of sputum were received for bacteriological examination from the Dispensary in the Sanitary Chambers connected with Bellefield Sanatorium. In 144 of these the bacillus tuberculosis was found, equivalent to 61·8 per cent. In the previous year the specimens numbered 290, and yielded a positive result in 160, or 55 per cent. These are very interesting results, in view of the fact that most of the patients attending this dispensary present clinical evidence of pulmonary tuberculosis.

Examination of Rats for Plague during 1907.

During the year 1907 rats to the number of 140 were brought to the Laboratory and examined for plague. Evidence of the disease was found in one rat. This rat was one of 32 found dead by workmen in a building on the south side of the river in the month of November. It was the only one submitted for examination, and in the view of the absence of any other probable cause of death it must be presumed that the others also succumbed to plague.

The following table gives the numbers examined in relation to the places from which they were obtained, compared with the previous year :—

Year.	From the City.	From Shipboard.	From Docks.	Total.	Plague Infected.
1907,	96	44	—	140	1
1906,	542	490	—	1,032	—

Investigations.

In addition to the specimens above tabulated, 1,448 of a miscellaneous nature were investigated for the Health Department, Medical Practitioners within the City, the Veterinary Surgeon, and the Water Department. These may be summarised as follows :—

Health Department—

A. Medical Officer of Health—

Milk, ...	197	
Boneless Meat, ...	7	
Food Poisoning, ...	7	
Tuberculosis, ...	3	
Anthrax, ...	15	
Cerebro-Spinal Fever, ...	149	
Cerebro-Spinal Fever Contacts, ...	422	
Disinfectants, ...	17	
	——	817
Carry forward, ...		817

Brought forward, ...		817
B. Sanitary Inspector—		
Milk, ...	1	
Shell Fish, ...	16	
Unsound Fish, ...	26	
Rat Virus, ...	1	
Flock Bedding, ...	7	
Insect House-pest, ...	1	
Disinfectants, ...	9	
	—	61
C. Hospitals—		
Diphtheria, ...	1	
Enteric Fever, ...	13	
Cholera, ...	1	
Dysentery, ...	1	
	—	16
D. Infants' Milk Depot, ...		377
Medical Practitioners—		
Miscellaneous Specimens relating to Tuberculosis, Enteric Fever, Paratyphoid, Erysipelas, Glanders, Cerebro-spinal Fever, Pneumonia, Sepsis, Hydatid Disease, and Cancer, ...		119
Veterinary Surgeon—		
Milk from Cows with Disease of the Udder, ...	26	
Specimens from Diseased Teats, ...	17	
Enteritis, ...	4	
Tubercular Glands, ...	3	
Tubercular Infection from Intestine, ...	5	
	—	55
Water Department, ...		3
Total, ...		1,448

BONELESS MEAT.

During the year the question of boneless meat attracted attention, and the following Report was submitted to the Committee on Health:—

(*Extract from Minute of date 23rd October*, 1907:)

It will be within the recollection of the committee that in December, 1905, I submitted a report on the trade in boneless meat in Glasgow, and referred to the uncertainty of any opinion expressed regarding the wholesomeness of the meat when examined in the frozen state. The following affords illustration how this may occur:—

Early in September my attention was directed to a consignment of this character, which had reached Glasgow direct from "foreign." Three samples obtained for investigation presented the appearance of being sound and suitable for food. They were, however, devoid of fat, and this was explained by the statement that the meat was intended for the Scotch collop trade. Two boxes examined subsequently, however,

had a very fair portion of fat. Dr. Buchanan has now completed his inquiry into the samples first taken, and the results obtained are important. Nothing has been discovered suggesting unsoundness in the flesh of the animals at the time of the slaughter. But there are micro-organisms present, whose normal habitat is the intestine. By way of explaining their presence in the centre of a mass of frozen meat, two explanations may be advanced.

In the first place, the organisms in question, which belong to the coli group, rapidly penetrate the tissues of animals after slaughter, and so might reach those portions which were contained in the consignment. This, however, from the condition of the flesh otherwise, is unlikely, and the probable explanation is that, in dressing the animal for packing, due care was not exercised in protecting the surface of the flesh from direct contamination. The practical result is that flesh containing organisms of this character rapidly undergoes decomposition on thawing, and that the presence of intestinal organisms in flesh food is apt to induce those changes therein which experience has shown to be associated with ptomaine poisoning.

The incident has a bearing on the regulations which may be framed under the Public Health (Regulations as to Food) Act, 1907.

HOSPITALS AND RECEPTION-HOUSES.

AN ACCOUNT OF THE HOSPITAL ACCOMMODATION AVAILABLE FOR PERSONS SUFFERING FROM INFECTIOUS DISEASE (INCLUDING THE MEANS PROVIDED FOR THE CONVEYANCE OF SUCH PERSONS, AND OF THE HOUSES OF RECEPTION, WITH OBSERVATIONS ON THE FURNISHING, MAINTENANCE, ADMINISTRATION, AND ADEQUACY OF SUCH ACCOMMODATION, &C.

(a) *Hospitals.*—Table IX. of Appendix contains a statement of the beds available for epidemic disease for the several years.

(b) *Reception-houses.*—During the year, 580 contacts with the diseases shown in the following Table were accommodated:—

GLASGOW, 1907.—RETURN OF PERSONS ADMITTED TO CITY RECEPTION-HOUSES.

Diseases.	Baird Street.	South York Street.	Total.
Plague, ...	...	8	8
Smallpox, ...	...	22	22
Typhus, ...	18	16	34
Enteric Fever, ...	20	5	25
Scarlet „	...	3	3
Diphtheria, ...	3	5	8
Cerebro-Spinal Fever, ...	175	247	422
*Others, ...	48	10	58
Total, ...	264	316	580

* Includes 27 cases of Phthisis under the isolation scheme.

REMOVALS BY PUBLIC CONVEYANCE OF PERSONS DEAD OF INFECTIOUS DISEASE.

Fifteen permits were granted under the Glasgow Police (Amendment) Act, 1890, Section 11, for the removal of the bodies of persons who had died from infectious disease.

Interments in Intramural Burying-grounds.

In accordance with the recommendation of the Corporation suspending the resolution of the Police Commissioners, of date 10th July, 1876, to permanently close the intramural burying-grounds as places of sepulchre, 11 permits were granted, of which 8 were for the High Church, 2 for Gorbals, and 1 for North Street.

Fresh-air Fortnight, Eastpark Cottage Home and t.s. "Empress."

During the year the lists of children selected for admission to the Homes in connection with the Glasgow United Evangelistic Association were submitted by the convener of that organisation for inspection, and those children residing in tenements found to be infected were refused for the time being.

The homes of all children admitted to Eastpark Cottage Homes for Infirm Children were also visited and reported on, as were also the homes of boys belonging to Glasgow granted leave of absence from the training ship "Empress."

SECTION III.

GLASGOW PORT LOCAL AUTHORITY.

SUMMARY OF WORK DURING 1907.

During the twelve months ended 31st December, 1907, 1,997 vessels from foreign ports passed the Boarding Station at the Tail of the Bank bound for the Customs Port of Glasgow. This number represents an average of 5·5 vessels per watch of 24 hours, the greatest number boarded in one watch being 16.

543 of these vessels had called during the voyage thus ending at foreign ports which were infected within the meaning of the Cholera Order; 1,454 vessels were from foreign ports not so infected.

In Table I. these arrivals are grouped according to the number:—

(*a*) Coming from "Foreign," *i.e.*, with foreign cargo on board, or, if light, coming direct;

(*b*) trading with infected ports and reaching the Clyde direct, or through home ports, but with a foreign cargo; and

(*c*) from infected ports reaching the Clyde light, or with out-going cargo, and boarded under Article 8 of the Order.

There is thus some difference between the "foreign-coming" vessels for Customs purposes and for those of the Port Local Authority, which will explain the variations in the totals of the groups here dealt with.

TABLE NO. I.—NUMBER of SHIPS ARRIVING from FOREIGN PORTS—YEAR 1907.

CLASS.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL.
(A)													
H.M. Customs, ...	125	90	114	92	104	169	101	106	113	88	100	130	1,332
(B)													
Number of foregoing from Ports "infected" within the meaning of the Cholera Order, ...	21	14	18	27	19	18	24	21	20	17	15	21	235
(C)													
From infected Ports, but reaching Clyde light — boarded under Article 8 of Order, ...	28	22	21	31	22	43	19	23	32	16	24	27	308

Table II. shows the number of ships arriving during the several months of the year classified under groups B and C just referred to, and also the arrivals from foreign non-infected ports (D). This Table further shows the numbers both of crews and passengers on board the ships of each group, and in supplementary Table IIA. the totals for the year are summarised.

TABLE II.—NUMBER of ARRIVALS BOARDED at BOARDING STATION, 1907.

CLASS.	January.			February.			March.			April.			May.			June.			HALF-YEAR TOTAL.		
	Ships	Crew.	Pass.	Ships	Crew.	Pass.	Ships	Crew.	Pass.	Ships	Crew.	Pass.	Ships	Crew.	Pass	Ships	Crew.	Pass.	Ships	Crew.	Pass.
From Infected Ports—																					
(B) With Foreign Cargo, ...	21	1,370	85	14	893	2	18	1,062	...	27	910	3	19	1,348	2	18	1.270	8	117	6,853	100
(C) Light or with Outward Cargo,	28	1,517	...	22	1,097	2	21	1,183	...	31	1,659	...	22	1,054	1	43	2,218	6	167	8,728	9
Total of B and C,	49	2,887	85	36	1,990	4	39	2,245	...	58	2,569	3	41	2,402	3	61	3,488	14	284	15,581	109
(D) From Non-infected Foreign Ports (with or without cargo), ...	127	3,771	805	101	3,007	566	124	4,046	603	98	3,481	707	111	3,962	1,097	176	6,551	3,747	737	24,818	7,525
Totals, ...	176	6,658	890	137	4,997	570	163	6,291	603	156	6,050	710	152	6,364	1,100	237	10,039	3,761	1,021	40,399	7,634

TABLE II.—*Continued.*

CLASS.	July.			August.			September.			October.			November.			December.			HALF-YEAR TOTAL.		
	Ships	Crew.	Pass.	Ships	Crew.	Pass.	Ships	Crew	Pass	Ships	Crew.	Pass.	Ships	Crew.	Pass.	Ships	Crew.	Pass	Ships	Crew.	Pass.
From Infected Ports—																					
(B) With Foreign Cargo, ...	24	1,227	6	21	1,125	17	20	1,489	4	17	1,195	2	15	926	12	21	1,423	3	118	7,385	44
(C) Light or with Outward Cargo,	19	910	7	23	1,245	...	32	1,608	2	16	741	1	24	1,133	8	27	1,248	2	141	6,885	20
Total of B and C,	43	2,137	13	44	2,370	17	52	3,097	6	33	1.936	3	39	2,059	20	48	2,671	5	259	14,270	64
(D) From Non-infected Foreign Ports (with or without cargo), ...	102	3,978	3,079	121	4,229	2,161	120	4,103	1,053	103	3,871	978	115	4,195	1052	156	5,167	3,723	717	25,543	14,046
Totals, ...	145	6,115	3,092	165	6,599	2,178	172	7,200	1,059	136	5,807	981	154	6,254	1072	204	7,838	3,726	976	39,813	14,110

TABLE IIA.

CLASS.	YEAR'S TOTAL.		
	Ships.	Crew.	Pass.
From Infected Ports—			
(B) With Foreign Cargo, ...	235	14,238	144
(C) Light or with Outward Cargo,	308	15,613	29
Total of B and C,	543	29,851	173
(D) From Non-infected Foreign Ports (with or without cargo), ...	1,454	50,361	21,571
Totals, ...	1,997	80,212	21,744

When compared for several years, the numbers included in these groups display a fair uniformity, which may be explained by the fact that so much of the traffic reaching the Clyde from foreign ports is on established trade routes.

There is another feature, also, which attracts notice, as it illustrates the tendency to replace existing ships by those of greater tonnage, for while the number of ships shows a limited though not constant decrease during the three years compared, the crews carried have increased by about 5,000, and the

passengers by about 8,000, while the tonnage has risen from 3,365,302 to 3,661,802. This is shown in the following comparison of the numbers for the years 1905, 1906, and 1907:—

	1905.		1906.		1907.	
A, ...	1,473		1,429		1,332	
B, ...	290	2,010	250	2,063	235	1,997
C, ...	315		302		308	
D, ...	1,405		1,511		1,454	

Year.	Ships.	Crew.	Passengers.	Yearly Total Registered Tonnage of Vessels Boarded.
1905, ...	2,010	75,468	13,156	3,365,302
1906, ...	2,063	79,773	17,822	3,562,703
1907, ...	1,997	80,212	21,744	3,661,807

The following Table shows the nationality of the ships and of their crews. Many British ships carry crews of mixed nationality, chiefly natives of India and China. These are shown in the bracketted figures.

The 1,570 British ships carried 53,703 British seamen, but in addition 253 of them carried 15,960 natives of India as part of their crews, and similarly 81 British ships in addition to British crews carried 2,378 Chinese. Two British ships had 38 Malays, and one had 10 Japanese.

The crews of the British vessels also include men of other nationalities, and cattlemen. The former are composed of a few Scandinavian and Spanish seamen. The cattlemen are mainly British and Americans taking advantage of working a cross-passage to this country.

TABLE III.—NATIONALITY OF SHIPS AND THEIR CREWS, 1907.

Nationality.	Ships.	Crew.
British, ...	1,570	53,703
Natives of India, ...	(253)	15,960
Chinese, ...	(81)	2,378
Malays, ...	(2)	38
Japanese, ...	(1)	10
Norwegians, ...	191	3,071
Swedes, ...	63	1,155
Spanish, ...	45	1,194
French, ...	22	582
Germans, ...	36	628
Austro-Hungarians, ...	21	552
Italians, ...	16	382
Belgians, ...	5	89
Russians, ...	7	91
Danes, ...	7	102
Dutch, ...	9	189
Greeks, ...	4	88
Chilians, ...	1	... (Under Norwegians.)
Total, ...	1,997	80,212

The British vessels bound for Glasgow during the year 1907 numbered 1,570, as compared with 1,587 in 1906, and the crews numbered 72,089, or an average per ship of nearly 46, in 1907, as compared with a total of 71,240, and an average per ship of nearly 45, in 1906.

The comparison of ships and crews of British and foreign nationality stands thus—

	Year.	Ships.	Crew.	Average per Ship.
British—	1906, ...	1,587	71,240	44·9
	1907, ...	1,570	72,089	45·9
Foreign—	1906, ...	476	8,533	17·9
	1907, ...	427	8,123	19·2

showing an increase of 849 British seamen, notwithstanding that a decrease of 17 in the total number of British ships has occurred.

The number of ships of foreign nationality was 49 fewer than last year, and their crews numbered 8,123, against 8,533 last year. Here again the increase in the number of the average crew from 18 to 19 suggests a replacing of smaller ships by those of general tonnage.

The Table which follows is constructed to show the number and tonnage of vessels boarded at Greenock. The groups "direct" and "coastwise" are to be interpreted here as meaning direct from a foreign port to Glasgow in the one case, and from a home port in the other, without any regard to the character of the cargo.

TABLE IV.—NUMBER, CLASS, and TONNAGE of VESSELS BOARDED at TAIL OF BANK, 1907.

Voyage.	Nationality.	Class.	No. of Vessels.	Registered Tonnage.
Direct.	British.	Steam, ...	761	1,515,149
		Sailing, ...	12	8,173
	Foreign.	Steam, ...	183	202,010
		Sailing, ...	20	34,204
Coastwise.	British.	Steam, ...	788	1,700,392
		Sailing, ...	9	11,937
	Foreign.	Steam, ...	218	187,475
		Sailing, ...	6	2,467
			1,997	3,661,807

SANITARY CONDITION OF VESSELS.

TABLE V.—NUMBER AND NATIONALITY OF VESSELS IN WHICH DEFECTS WERE FOUND DURING THE YEAR 1907.

Nationality.	Defects Found on—	
	Steam.	Sailing.
British, ...	296	7
Norwegian, ...	31	3
Swedish, ...	5	...
Spanish, ...	15	...
French, ...	2	1
Italian, ...	3	...
Austrian, ...	6	...
German, ...	7	...
Danish, ...	1	1
Greek, ...	1	...
Dutch, ...	3	...
Russian, ...	3	...
Total, ...	373	12

TABLE VI., 1907.—557 DEFECTS OR NUISANCES FOUND ON 385 VESSELS (BRITISH AND FOREIGN).

(a) DUE TO STRUCTURAL DEFECTS.		(b) TO REPAIRS REQUIRED.		(c) TO NEGLECT.	
Nature and Site.		Nature and Site.		Nature and Site.	
Forecastles.		*Forecastles.*		*Forecastles.*	
Insufficient heating,		Bogies broken,	33	Floors and woodwork dirty,	109
Do. lighting,	7	Ports leaking,	21	Gear in bunks,	36
Do. ventilation,	5	Steam heater leaking or defective,	1	Ventilators plugged,	3
Do. sleeping accommodation (overcrowding),	1	Bunks broken,	2	Scuppers choked,	7
Anchor chains uncovered,	3	Overhead deck or hawse pipe leaking,	30	Repainting required,	3
Steering gear uncovered,		General smash—storm or collision,	3	Verminous bunks or rats,	8
Water tanks in forecastle,		Doors off food lockers,	1	Food in bunks,	8
No food lockers,	3	Steam heater leaking,	2	No bogie provided,	3
Scuppers blocked or too high,	2	Chain locker defective and dangerous,	3		
Sweating (no sheathing or cork),	3	Mess table broken,	1		
Sail or paint locker without partition to forecastle,	3	Cabin leaking,	1		
		Doors broken,	1		
		Anchor chain bulkheads broken,	2		
Water-closets.		*Water-closets.*		*Water-closets.*	
Insufficient accommodation,	1	Seats broken,	12	Choked or pan foul—dirty,	77
Site bad (*e.g.*, too close to forecastle),	2	Ports broken,	2	Gear stored therein,	29
				Gear in bathroom,	3
				Scupper choked,	7
				Limewashing or repainting required,	3
				Food stored in water-closet,	2
Decks.		*Decks.*		*Decks.*	
				Accumulations of manure,	87
				Do. rubbish, and dirty,	13
General Conditions.		*General Conditions.*		*General Conditions.*	
				Dirty,	
				Water tanks uncleaned for over six months,	9
				Bilges uncleaned,	2
				Galley dirty,	2
				Drinking water brackish (Leghorn water),	1
	30		115		412

Vessels with nuisances or defects—as shown by Table V.—continue to be reported in about the same proportion to vessels inspected as heretofore. It will be seen later, however, that, notwithstanding this fact, a distinct improvement in the sanitary condition of the vessels has been taking place.

Year.	Total Number of Ships.	Number of Ships with Nuisances or Defects (less Cattle-ships).	Percentage of Ships with Nuisances or Defects (less Cattle-ships).	Number of Nuisances or Defects (less Manure Accumulation).
1905	2010	273	13·5%	492
1906	2063	231	11·2%	342
1907	1997	298	14·9%	478

A nuisance or an insanitary condition is no less a nuisance or insanitary because it happens to be inevitable to a perfectly legal circumstance—as instance accumulation of manure on cattle ships.

The question of the best means of carrying cattle, and dealing with their manure, on board vessels used for the double purpose of transporting cattle, horses, &c., and saloon and steerage passengers, seemed likely to become pressing, and will yet become so, but for certain reasons the importation of foreign cattle has dwindled to very small proportions (as far as Glasgow is concerned); with its revival the question will no doubt again arise. During the year 1905, 137 cattle ships arrived in Glasgow; in 1906, 138; and in 1907, 87. In the totals of vessels with nuisances or defects these numbers have been deducted, except in Table VI., where they are included under Class C in each yearly Report.

With regard to the remaining nuisances or defects, as set forth in Table No. VI., a comparison with previous years of the figures under the headings which classify the defects or nuisances, in the corresponding Tables for those years, should corroborate the improvement which has been remarked in the sanitary condition of the vessels recently arriving at the Tail of the Bank.

Table VIa.

Year.	Class (A.). Structural Defects.	Class (B.). Repairs required.	Class (C.). Neglect.
1905, ...	82	185	225
1906, ...	66	138	138
1907, ...	30	115	333

In the above Table, which is for the purpose of comparing the totals of Table VI. for the past three years, it will be seen that in Class A there has been a decrease of 63 per cent. in structural defects, and in Class B a decrease of 38 per cent. in defects due to neglected repairs.

Class C shows a rather sharp increase, but a glance at Table VI. shows that the cause is not in the vessels, but in the more stringent requirements as to cleanliness of forecastles, water-closets, &c, by the Sanitary Inspectors.

TABLE of Inspection of Vessels.

	1905.		1906.		1907.	
	Steam.	Sailing.	Steam.	Sailing.	Steam.	Sailing.
(*a*) Carefully inspected, ...	993	36	686	21	893	27
(*b*) Partially inspected, ...	878	38	1,189	45	1,003	20
(*c*) Boarded but not inspected, ...	31	1	97	1	12	...
(*c*) Hailed, ...	7	2	10	...	18	...
(*d*) Not boarded nor hailed, ...	20	4	14	...	24	...
	1,929	81	1,996	67	1,950	47
	81		67		47	
Total, ...	2,010		2,063		1,997	

DISEASES ON CLYDE BOUND SHIPS.

The Tables which immediately follow are grouped to bring out information on several points.

In Table No. VII., the number of cases of disease occurring on ship-board during the voyage terminating at Glasgow is shown. During the year these included 105 cases of infectious disease, of which 65 were on board when the vessels arrived in the Clyde, 40 had occurred during the voyage and had been disposed of elsewhere, while 8 deaths had taken place.

Certain other information regarding the conditions under which these illnesses occurred is also shown.

It is to be noted particularly that all the trachoma cases arriving at the Tail of the Bank were passengers rejected by foreign Governments.

TABLE VII.

RETURN OF INFECTIOUS DISEASES ON BOARD SHIPS BOUND FOR PORT OF GLASGOW.

DISEASES.	Total Number of Cases.	Cases Found on Arrival.	Cases found during Voyage but dealt with Elsewhere.	Number of Deaths.
Cholera, ...	1	...	1	1
Plague, ...	2	...	2	...
Enteric Fever, ...	16	12	4	...
Smallpox, ...	6	...	6	...
Scarlet Fever, ...	1	1	...	...
Measles, ...	3	...	3	...
Diphtheria, ...	2	2	...	...
Erysipelas, ...	1	1	...	...
Trachoma, ...	11	11	...	...
Typhus Fever, ...	1	1	...	...
Continued Fever,...	2	...	2	...
Cerebro-spinal Fever, ...	1	...	1	...
Enteritis (Infective), ...	1	...	1	1
Acute Diarrhœa, ...	4	4	...	...
Whooping Cough, ...	2	2	...	...
Chickenpox, ...	7	...	7	...
Bubo (Suspected Plague), ...	1	1	...	...
Beri-beri, ...	5	2	3	2
Pneumonia, ...	2	2	...	...
Phthisis, ...	26	21	5	3
Dysentry, ...	4	...	4	1
Mumps, ...	1	1	...	...
Influenza, ...	4	2	2	...
TOTALS, ...	105	65	40	8

How Infectious Disease when found is dealt with.—When a case, or suspected case, of infectious disease is met with on board a vessel, a diagnosis having been made, and, whether the vessel be detained or not, full particulars, including those obtained from the Master, or Surgeon, or ship's log, are 'phoned to the Sanitary Chambers, Glasgow, by the Medical Officer in charge. Arrangements are there made for the removal of the case or suspected case to Belvidere Hospital. If the diagnosis is incomplete the case is still sent to Belvidere for observation. The vessel is then disinfected, according to her requirements, with the least possible delay.

CASES OF SICKNESS, 1907.

Cholera.

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
Jan.	S.S. "City of Glasgow"	Calcutta	1	Removed to hospital, Calcutta. Died 24/11/06. Ship disinfected by Port Local Authority.

Plague (Suspected).

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
April	S.S. "Clan Macaulay"	Vizagapatam	1	Case was landed in London on 10/4/07. Ship disinfected by Port Local Authority. (Suspected case.)
Dec.	S.S. "City of Edinburgh"	Calcutta	1	Native steward. Removed to hospital, Gravesend, on 5/12/07. (Suspect.)

Bubo.

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
Aug.	S.S. "Iberia"	Genoa	1	Enlarged glands (groins). Removed to Belvidere Hospital, Glasgow. (Suspect.)

Enteric Fever.

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
Feb.	S.S. "Laurentian"	Boston	1	Isolated on ship. Removed to Belvidere Hospital. Bedding destroyed. Ship disinfected in Glasgow.
March	S.S. "Olympia"	Bombay	2	One case removed to hospital at Newport, and the other to Belvidere, Glasgow.
June	S.S. "City of Calcutta"	Calcutta	1	Passenger (second cabin), landed Tilbury. Ship disinfected by Port Local Authority.
,,	S.S. "Restormel"	Seville	1	Purser of ship. Isolated in cabin. Removed Belvidere, Glasgow.
July	S.S. "City of Benares"	Calcutta	1	Removed to hospital, Gravesend. Disinfection by Port Local Authority.
Aug.	S.S. "Thirlby"	Aquilas	1	Removed to Belvidere. Disinfection done in Glasgow.
,,	S.S. "Columbia"	New York	1	Removed to Belvidere. Disinfection done in Glasgow.
,,	S.S. "Castalia"	Bombay	1	Saloon passenger. Landed at Suez. Ship disinfected in Marseilles. Some of effects disinfected in Glasgow.
,,	S.S. "Mongolian"	Montreal	1	Saloon steward. Removed to Belvidere. Stewardess who nursed case sickened later.
	Carry	*forward,*	10	

ENTERIC FEVER—*Continued.*

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
	Brought	*forward,*	10	
Oct.	S.S. "Mongolian"	Montreal	4	Members of crew returning convalescent. Ship had been in collision, and patients were in hospital in Montreal.
Nov.	S.S. "Heathfield"	Aquilas	1	An A.B. Sent to Belvidere. Vessel dealt with in Glasgow.
Dec.	S.S. "Hungarian"	Montreal	1	A stowaway. Sent to hospital in London. Disinfection by Port Local Authority
			16	

CASES OF TRACHOMA RETURNED BY FOREIGN PORTS.

Date.	Name of Vessel.	Where from.	No. of Cases.	Home Address.
Jan.	S.S. "Furnessia"	New York	1	Carfin.
,,	S.S. "Columbia"	,,	1	Bellshill.
May	S.S. "Athenia"	Montreal	1	Glenboig.
June	S.S. "Cassandra"	,,	1	Cologne.
July	,,	,,	2	Antwerp and Wishaw.
Aug.	S.S. "Laurentian"	Boston	1	Stevenston.
,,	S.S. "Athenia"	Montreal	1	Liverpool.
Nov.	S.S. "Corinthian"	,,	1	Russia.
,,	S.S. "Pretorian"	,,	1	,,
Dec.	S.S. "Numidian"	Halifax	1	,,
			11	

Of the above eleven cases, eight were Russian Poles, two Belgians, and one a German. All were rejected emigrants. Five were transmigrants, but six had been resident in this country for some time previous to emigration.

BERI-BERI.

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
Jan.	S.S. "Ava"	Rangoon	1	Landed Tilbury. Usual cleansing and disinfection.
Feb.	S.S. "Clan Shaw"	Chittagong	1	Five fatal cases occurred on outward voyage, and one was sick on arrival. Vessel disinfected in Glasgow after case removed.
May	S.S. "Clan Forbes"	Bunbury (Australia)	2	Lascar firemen. One died at sea and one in London. Ship disinfected by Port Local Authority.
June	S.S. "Clan Macintosh"	Moulmein	1	2nd deck, Tandil. Case serious, removed at Glasgow, recommended disinfection. A case of beri-beri died on outward voyage.
			5	

PHTHISIS.

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
Jan.	S.S. "Furnessia"	New York	1	Deport. Proceeding to Antwerp.
,,	S.S. "Columbia"	,,	1	Isolated in hospital on ship. Sent to hospital Glasgow. Quarters on vessel well disinfected; carbolocene and sulphur used.
,,	S.S. "Corinthian"	Boston	1	Isolated in ship's hospital. Died and buried at sea. Effects disinfected by Port Local Authority, Glasgow.
Feb.	S.S. "Eden Hall"	Buenos Ayres	1	Sent to hospital, Glasgow, and vessel disinfected.
,,	S.S. "Rosarian"	,,	1	Do. do.
,,	S.S. "Kastalia"	St. Johns, N.B.	1	Do. do.
March	Barque "Bussard"	Noumea, N.F.	1	Frenchman. Going home to France.
,,	S.S. "Lorne"	Nikoleiev	1	Died and buried at sea. Ship disinfected, Glasgow.
,,	S.S. "Courtfield"	Nehom, N.F.	1	A Chinaman. No isolation on ship. Dealt with in Glasgow.
April	S.S. "Marachel Suchet"	Schio	1	An A.B. Remained on vessel, and returned to France.
June	S.S. "Numidian"	Montreal	2	Steerage passengers. One final stage, and proceeding to home in Glasgow; one proceeding to Norway.
,,	S.S. "Pegu"	Rangoon	1	Saloon passenger. Carried on board ill. Isolated. Landed at Liverpool.
Aug.	S.S. "Clan Lamont"	Calcutta	1	A Lascar. Removed to hospital, London.
Sept.	S.S. "Siberian"	Philadelphia	1	Deport. Proceeding to Dalbeattie. Mild case.
Oct.	S.S. "Corinthian"	Montreal	2	Second cabin passengers. Landed and sent to hospital, Greenock. Disinfection of ship done in Glasgow.
,,	S.S. "Basuta"	River du Loup	1	A fireman. Proceeded to home in Greenock. Disinfection in Glasgow.
Nov.	S.S. "Corinthian"	Montreal	1	A deport. Proceeding home to Crieff.
,,	S.S. "Clan M'Pherson"	Chittagong	1	A Lascar. To be sent home to India first opportunity. No isolation.
Dec.	S.S. "California"	New York	1	Steerage passenger. Died and buried at sea. Disinfection by ship's doctor with carbolocene and sulphur.
June	S.S. "Corinthian"	Montreal	1	Steerage passenger, but isolated in a saloon cabin. Disinfection by ship's surgeon.
May	S.S. "Ethiopia"	New York	2	Two lads, a Pole and a Swede. Returning to their own country. Ship disinfected in Glasgow.
,,	S.S. "Massilia"	Bombay	1	Lascar. Isolated under cover, deck. Convalescing.
June	S.S. "Cassandra"	Montreal	1	Second cabin passenger. Proceeding to Douglas, Isle of Man.
			26	

Of these 26 cases, 18 were passengers and 8 seamen. 8 passengers were Russian Poles or Jews, 5 of whom were returning of their own accord, and 3 were rejected emigrants. Of the 10 British passengers, 2 had been rejected. Of the seamen, 4 were Lascars, 2 were British, 1 a Frenchman, and 1 a Chinaman.

Dysentery.

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
Jan.	S.S. "Clan Mackay"	Madras	1	Removed to hospital at Tilbury—a Lascar. Ship and effects disinfected at Dunkirk.
Sept.	S.S. "Colonial"	Brisbane	1	Fireman. Died. Buried at sea. No other case. Vessel painted, disinfected, &c., in Liverpool.
,,	S.S. "Olympia"	Bombay	2	Fourth officer and ship's surgeon. Mild. Convalescent.
Dec.	S.S. "Clan Colquhon"	Chittagong	1	A Lascar. Removed to hospital at Dundee.
			5	

Acute Diarrhœa.

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
July	S.S. "Irthington"	New Orleans	1	Case convalescent and proceeding to Liverpool.
Oct.	S.S. "Warrior"	Bombay	1	Fireman. Dealt with in Glasgow.
Dec.	S.S. "Hestia"	Baltimore	2	Captain and 2nd officer. Convalescent on arrival.
			4	

Influenza.

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
Jan.	S.S. "Siberian"	Philadelphia	1	Isolated on ship. Last case of several on outward voyage.
Feb.	S.S. "Carthagenian"	St. Johns	1	Isolated on ship. No other case appeared.
Dec.	S.S. "Laurentian"	Boston	1	A Fireman. Not isolated. Under observation at home in Glasgow.
,,	S.S. "Astoria"	New York	1	Steerage Steward. Going home to Dundee.
			4	

Smallpox.

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
Jan.	S.S. "City of Glasgow"	Calcutta	1	A passenger. Modified case. Removed to hospital, Colombo. Ship disinfected and part of crew and passengers vaccinated.
Mar.	S.S. "Clan Ranald"	Calcutta	2	One removed to Perim along with effects. Ship disinfected. Second case removed at Gravesend. Crew vaccinated.
April	S.S. "Persia"	Calcutta	1	Landed at Suez. Ship disinfected (suspect).
May	S.S. "Clan Macfarlane"	Madras	1	Native fireman. Removed Dunkirk. Vessel disinfected. Crew vaccinated.
June	S.S. "Amasis"	Alexandria	1	Steerage passenger. Removed Liverpool. Ship and effects disinfected. No vaccination.
			6	

CHICKENPOX.

Date.	Name of Vessel.	Where from.	No. of Cases.	How dealt with.
Jan.	S.S. "Clan Cameron"	Chittagong	3	Lascars. Landed London. Ship disinfected by Port Local Authority.
April	S.S. "Clan Macaulay"	Vizagapatam	1	Isolated on board and recovered. A Lascar.
May	S.S. "City of London"	Bombay	3	Removed at Liverpool. Ship disinfected by Port Local Authority.
			7	

ENTERIC FEVER.

During the year an outbreak of enteric fever occurred on board a liner trading with America, which presented several features deserving of notice. In all there were ten cases between 10th August and 19th September a period long enough to allow of the vessel returning to this country from America and again completing her voyage outward.

The patients included the saloon steward, two stewardesses, an engineer, two lady passengers travelling in the saloon, and the third officer, the purser, the second cook, and the captain. The first illness dates from 10th August, three days after the arrival of the ship in the foreign port, and was in the person of the saloon steward, whose berth was in what is colloquially known as the "glory-hole," or sleeping quarters of the stewards, and was in this case situated under the water line, in the fore-peak. He was nursed here for two days by the stewardess, who sickened on 21st August. From 12th to 15th August he was treated in the ship's hospital as a suspected case of enteric fever, the stewardess meanwhile continuing in attendance on him. The sequence of sickenings thereafter was as follows:—

August	21,	... ...	The stewardess.
,,	22,	... ...	An engineer.
,,	25,	... ...	Two lady passengers and third officer.
Sept.,	6,	... ...	Another stewardess.
,,	8,	... ...	The purser.
,,	12,	... ...	Cook.
,,	19,	... ...	Captain.

These cases would appear to fall into three groups, the first sickness standing alone, the second group including the five sickenings within the four days, August 21st to 25th, and thereafter the four sickenings occurring separately at intervals between September 6th and 19th. The three officers of the second group remained in duty till the arrival of the ship in Glasgow on August 25th, and the first patient of the subsequent group sickened on the thirteenth day thereafter (September 6). During the first six days of the interval (August 25 to 31), the ship was in dock in Glasgow.

With regard to the origin of the first illness, as the ship left Glasgow on 28th July it is probable that the infection was obtained in this country. But from the eleventh to the fifteenth day after this sickness began five others became ill, and were undoubtedly secondary to this attack.

During the first two days of his illness, the patient was attended, as has above been said, in his bunk by the second cabin stewardess, who meanwhile also performed her other duties. She herself sickened on 21st August, an

engineer on 22nd, and two lady passengers who had joined the ship at Montreal not later than 15th August, sickened ten days thereafter, namely, 25th August, when, also, the third officer sickened. This date corresponds with the arrival of the ship in Glasgow.

We may now endeavour to discover the relation which each of these bore to the patient in the "glory hole." The stewardess's infection is easily accounted for. She was dealing with an infectious disease without knowing it, and her experience is frequently repeated elsewhere. The two lady passengers who joined at Montreal not later than 15th August travelled in the saloon, and used the same lavatory accommodation as the stewardess. The engineer's quarters were in a different part of the ship, while the third officer's quarters were in a house on deck aft, and opposite those of the engineer.

The interval which now occurred extended from 25th August to 6th September (and during the first six days of which the vessel was in the harbour of Glasgow), when another stewardess sickened, and thereafter on the 8th, 12th, and 19th, the purser, second cook, and captain fell ill in sequence.

Regarding the illness of the stewardess of this group, it may be observed that she used the same lavatory accommodation as the one who had formerly sickened.

The purser had accommodation on the deck amidships, but had transferred on 28th August to another ship, on which he sickened eleven days thereafter. Regarding the second cook, it is noted that he slept in the same "glory hole" occupied by the first patient during his illness, while the captain sickened, as stated, on 19th September. Some time between the 19th and 27th September the ship was in collision, and this led to considerable repairs, and the cessation of the enteric fever.

Source of Infection and Method of Spread.—As has been said, it is possible to separate the source of infection of the first case from the others which followed. The first patient obtained his infection before joining the ship, most probably in Glasgow.

During the development of the sicknesses, the vessel made a voyage each way across the Atlantic, and was for some period in ports on both sides. Two only of the patients were passengers, and these were ladies on whom the stewardess, who was the second case to sicken, attended, along with her other passengers. All the other patients were officers or members of the crew.

The first group of secondary cases, numbering 5, sickened within four days, namely, between 21st and 25th August; the second group, numbering 4, sickened, as has been said, over a period of a fortnight, between September 6th and 19th. Between the concentrated stream of infection, which in four days claimed five victims, and the irregular movement which in a fortnight only caused four, there is a contrast which suggests that the method by which the infection was spread in each case was different. Water was excluded by the absence of cases among the passengers (save in the two instances quoted), and by the lack of any considerable degree of simultaneity in the dates of sickening of all. Even common use of the lavatory accommodation lacks a sufficient basis of argument in its favour, because 6 of the 10 patients used lavatories in common with a large number of both passengers and crew. It was observed that many of the patients remained on duty, or without attendance, during the early days of their illness, and the sequence of events, and particularly of the cases occurring in September, suggests that the infection was such as must necessarily happen where infectious disease is handled without being recognised, and food becomes liable to contamination either by direct soiling from unclean hands, or by other methods of transference by insects, which are now recognised. If indeed one could imagine accidental transmission of infection on the feet not only of insects but of vermin on board ship, the distribution of the cases in the last fortnight would be explained. It suggests an occasional

and not in any sense a constantly acting infecting agent. Here one of the patients was the stewardess, another the purser, the third was second cook, and the last patient of all was the captain.

Sleeping accommodation, lavatory accommodation, almost everything was different, and yet unquestionably these illnesses arose from a strain of infection remaining on board from a patient who sickened on 21st August.

It was impossible, however, without inquiry, to set aside the question of the part played by the water supply, and as the result of this I have asked Dr. Wilson to prepare a report on the methods of storage and distribution of water on board ship, and that report is appended hereto.

STORAGE AND DISTRIBUTION OF DRINKING WATER ON BOARD SHIPS.

The importance of a pure water supply stored and distributed free from contamination is as much a necessity to health on board ship as to health on land.

Quicker voyages and the possibility of more frequent renewals of fresh water may counterbalance the vastly greater amounts required on the great ships of to-day, but the sources and dangers of contamination, both in the methods of storage and distribution, are proportionately increased with the elaboration and complexity of the methods adopted.

Method I.—The simplest and earliest method is that still in vogue on the smaller sailing vessels, viz., two or more stout wooden barrels, usually of a flattened oval shape, securely fastened to the deck in pairs abaft the masts. In these the water may be kept wonderfully clean and sweet, since they are movable and easily enough cleaned. The water for use is withdrawn by means of a long, round, narrow tin, called a "dipper," which passes through the bunghole, and is kept suspended in the water by a cord attached to the bung.

Method II.—This method, used in larger sailing vessels and smaller steamships, differs from the first only in that the reservoirs are square-shaped iron tanks provided with an oval manhole, the cover of which is perforated, and the water withdrawn either by a suspended dipper, as described, or by means of a tap placed an inch or two above the level of the bottom.

Method III.—In the large tramp steamers, built fifteen to twenty years ago, huge tanks were built into the ship.

In these older vessels one finds such tanks resting on plates or supports, *e.g.*, in the forward hold, reaching upwards nearly to the 'tween-deck. They are placed one on each side of the vessel, the inner side plates being perpendicular and parallel to each other, the outer side plates following the curve of the ship's sides, but leaving a space between, which is intersected by the connections between the tanks and the ship's frame. The bottom of such a tank would thus measure only 2 or 3 feet in width, whilst the top of each would be almost the width of half the 'tween-deck, and to reach the manhole one must crawl between the tank-top and the 'tween-deck. Such tanks are sometimes met with singly, built into the fore or after-peak of a vessel. Large built-in tanks are also sometimes found built one on each side of the engine-room, and resting on the 'tween-deck.

If a single large tank is used, and not placed either in the fore or after-peaks, it is usually found in the hold amidships, supported on plates raised a foot or so above the keelson. They are often oval in shape, and reach up to the 'tween-deck, the manhole having an outward curved lip two or three inches above the level of the 'tween-deck to keep deck washings, &c., from getting on to the manhole cover.

All large tanks are provided with movable plugs on a level with the bottom for washing out sediment, &c., the water tap always being on a higher level.

The water for use is raised to the deck by means of hand-pumps, usually fixed somewhere near the galley.

Method IV.—*Cellular Tanks.*—Recently, where large tanks like those described would be required, either a number of smaller square ones or one (or two) large

"cellular" ones are used for the storage of drinking water. (Tanks of all sorts when used as reservoirs for water intended for domestic purposes are called "domestic tanks.")

The cellular "domestic tank" is a large square iron box divided into cells by means of partitions, inserted for the purpose of restraining the weight of the water when the vessel rolls at sea. These partitions are perforated by manholes which allow the water to pass from one section of the tank to another, and no manhole in one partition is opposite that in any other. They are large enough for a man to crawl through, so that the whole tank can be thoroughly hand-cleaned and cement-washed when necessary.

The most usual site chosen for "domestic tanks" is somewhere amidships, and the water is withdrawn from the tanks by means of hand-pumps or direct cocks. The former is usually necessary if the tank site be on or below the level of the main deck, whilst the latter is sufficient when the site is far enough above that level for gravity to provide the effluent force.

In attempting to classify tanks and methods, the object has been to facilitate description, and it should be noted that there exist many combinations of the methods described.

Out of the water, instead of the fine lines ending at the bottom in the sharp keel, in front in the graceful bow and astern in the rounded counters, which one associates with sailing ships, the present-day steamship more nearly resembles a great box or, rather warehouse. The bottom is almost flat, and near its junction with the more or less perpendicular sides a sort of keel is placed, one on each side, along part of the length of the vessel, to prevent rolling when at sea (called rolling chokes).

There still remains a few inches of depth of keel along the centre, but the greater part runs along the bottom on the inside, chiefly to strengthen the structure, and called the keelson.

These vessels have two bottoms, the second being about 4½ feet to 5 feet above the lower, or what is called the "skin" of the ship.

The space between is divided up into tanks like the cellular ones described. They are always limited by the holds and the transverse water-tight bulkheads. Any of these bottom tanks, except the fore and after-peaks, may be divided by an imperforate partition running along the keelson, so as to make double or port and starboard tanks in one or more of the holds.

The tanks ending in the bow and stern, called the fore and after-peaks, necessarily take the shape of the vessel, and whereas the bottom tanks are square and have a uniform depth of about 4½ feet, those of the fore and after-peak are single, deep, and narrow at the bottom. The depth might be 16 feet to 18 feet, according to the size of the vessel.

The reason for describing these tanks, and the "bilges" which also form part of the double-bottom space, is that the tanks are being used on large vessels to carry reserves of water for domestic uses, and that the bilges, now about to be described, lie close against them, indeed share one partition wall between them, and so form a possible source of contamination to the reserve water.

Bilges.—In sailing and in all the older vessels the bilge space is in the centre, but in the newer "flat-bottoms," except in a few which have unusually fine lines fore and aft, the spaces are at the sides. They are of a V shape, and formed by the outer walls of the port and starboard tanks and the sides or skin of the ship, which curves a little outwards and upwards before rising perpendicularly.

These bilge spaces or wells are divided off by the holds or water-tight bulkheads, as are the water-ballast tanks.

Each "well" is provided with a pump, the bilge end of which is hook-shaped, and has a sort of watering-pan rose end to it. This arrangement leaves the rough sediment behind for periodical special cleanings. The deck ends, to which the suction pumps are fitted when the pumps are not in action, are always plugged with round brass plugs marked "bilge." These openings are also used as "sounding wells," *i.e.*, for measuring the amount of water in the bilge or wells.

The bilge spaces are divided by manhole partitions similar to those of the cellular tanks, and they are more or less about 18 inches or so in depth. They are not covered on the top except by the flooring of the hold, and consequently can be reached only in "light" ships.

Method V. is a combination of certain of the aforementioned varieties of domestic tank variously situated, and connected with an overflow distribution tank placed on the highest possible site, viz., the bridge deck, for the distribution of the water over the ship by gravitation. Added to these there is a stock of fresh water stored in certain of the "bottom" or "water ballast" tanks, and connected by steam-pumping power through the emptying pipes already mentioned.

Reserve Water.—I. When used for drinking purposes, the reserve may be pumped directly into the domestic tank, and thence by hand or steam pump up to the "distribution" tank on the bridge deck, or it may be pumped directly into the "distribution" tank, and from there turned by cock into the domestic tanks for special uses, as well as over the ship through pipes for other special purposes, *e.g.*, lavatory basins, baths, the galley, pantries, &c.

II. The cattle water is always stored in the ballast tanks apart from the "drinking" water circulation. It is pumped up either into an overflow distribution tank of its own, and carried along the decks in pipes provided with cocks from which the cattle water barrels are filled, or it is pumped up as in the ordinary emptying process, and carried along the decks to the cattle water barrels by means of connected lengths of hose.

III. In large vessels a special reserve and circulation is sometimes kept for cooking, washing, and such domestic purposes, so as to save the store in the domestic tanks for drinking water alone. In such large combined passenger and cattle ships as the s.s. "Ionian" and s.s. "Sicilian" (Allan Line) there are three classes of water reserves and circulations, viz., that for drinking water, that for cooking and washing water, and that for the cattle water.

Condensed Water and Boiled Water.—The methods of storage and distribution of water on board ship would be incomplete without mention being made of the occasional use of condensed water and of boiled water, special apparatus for the production of one or other of which is frequently carried by vessels as a provision against shortage or contamination of the regular supply.

A Drinking Water Condenser is an apparatus connected with the engine cold water circulating pump, and so arranged as to cool and condense steam from the boiler. The condensed steam runs into a tank on a lower level, from which it is withdrawn through a cock placed as already described. Condensers are usually situated in or over the engine-room conveniently to the circulating pumps mentioned.

Distilled or even boiled water is not over pleasant to the palate, but certainly better than brackish or contaminated water.

An Apparatus for Boiling Water is a sort of reversed condenser; in the latter the cold water condenses the steam, and in the former the steam boils the cold water. The source of the water to be boiled is of course different; it is pumped by hand from the domestic tank into the boiling apparatus, and there rapidly boiled by steam from the boiler, after which it is passed into a special tank, from which it is withdrawn through an ordinary tap cock.

This method of boiling water in bulk is not frequently met with; in fact, it has been noted at the Tail of the Bank on one vessel only, viz., the s.s. "Harald," a Norwegian cargo ship.

On account of this boiling of the water, the captain thought it unnecessary to clean his domestic tanks more than once a year. The boiled water reservoir, however, was cleaned and cement-washed every voyage.

Overflow and Distribution Tanks.—This tank is simply a small circular boiler placed on the highest available site, viz., the bridge deck. It may rest horizontally or perpendicularly, and is met with of two different patterns.

As already stated, the pumping or filling power, although usually by steam, may be by hand.

The pattern most frequently met with is filled from the engine-room, and pumping is continuous, as all the water which reaches the level of the overflow pipe returns to the reservoir or ballast tank. The pressure within is thus constant while the pumping is in progress.

The second pattern requires intermittent pumping, and is better adapted to hand work. Its overflow pipe rises from the highest level of the tank, and usually ends swan-necked and open, so that the tank is known to be full when the water spouts from this open end. This overflow pipe varies in diameter and height, sometimes being carried half way up the ship's funnel when greater pressure is required.

Sanitary Tanks.—Sanitary tanks are similar to those just described, and also occupy the bridge deck. They are, however, directly connected with the circulating engine pumping apparatus, and are constantly kept filled with sea water, which is carried through the ship by means of pipes to cisterns for flushing water-closet pans, filling sea-water baths, &c.

For the crew's and steerage latrines, the constant closet flushing is generally carried out through pipes laid directly from the said engine circulating pumps to the closets, and there regulated over the troughs or pans by means of a wrench tap.

In certain tramp steamers this flushing of closets is done by means of a hose, which is also used for deck cleaning, &c. It has its source in the abovementioned salt-water *circulating system.*

Cholera Order, 1907.—In September, 1907, the Local Government Board issued to seaboard Local Authorities a series of regulations dealing with cholera, plague, and yellow fever. These regulations supersede those previously in existence, and became necessary, because the International Sanitary Convention of Paris, of 1903, differs in some of its requirements from the Venice Convention, which it superseded. These regulations are divided into three groups. Those applicable to all the diseases of the Order apply to ships arriving from foreign ports, whereas those referring only to cholera and plague are applicable to coasting ships and to specified articles on outward bound ships.

Disinfecting Apparatus Available in Launch.—The launch "Nathaniel Dunlop" is fitted with a disinfecting tank of fifty gallons capacity, and provided with a 60-foot rubber hose with a special nozzle for throwing a very fine jet or spray. Under the 75 lbs. steam pressure to which this tank can be raised by the launch's donkey-engine pump. The disinfectant, when applied to any surface, spreads and *effectively penetrates.* This jet, under said pressure, can be thrown 30 to 40 feet into the air before it breaks or begins to form a spray. For forecastles, state-rooms, &c., there is also on the launch, ready for use, a good-sized hand-pump spray producer. The launch's disinfectant tank was used for the first time during the present year in disinfecting the s.s. "Rembrandt," on which plague-infected rats had been found at Hamburg. The apparatus, although much too small, and consequently too slow for disinfecting the holds of large vessels, can, as a disinfector, be used efficiently enough by refilling—say once for each hold—from the four-ton tank placed on board for that purpose.

Destruction of Rats.—According to Articles 23 and 28 of the Cholera Order, 1907, the Medical Officer may order the destruction of rats, and detain the vessel for the purpose. As, however, ships seldom carry means for destroying rats, it falls to the Port Local Authority to provide the means and to carry out the work. We have not been called upon to do this as yet, but might be at any time, and on this account the necessity of providing some suitable means of destruction of plague-infected or plague-suspected rats will be obvious.

Launches.—The launches "Nathaniel Dunlop" and "Clyde" are still in use, but under considerably modified conditions, which came into force in January of this year (1908).

As this new plan has not been in use long enough for fair criticism, its discussion may be left for next year's Annual Report.

The object of the new arrangement is to give the crews a ten or twenty hours' shift, instead of a twelve or twenty-four hours' one, without impairing the working of the launches. This is being accomplished by each launch going off duty for four hours of the twenty-four, and the other doing the work of both during that time. This, of course, means that one launch only is in use for eight hours of each twenty-four. On Sundays, the hours off duty are doubled, making on that day sixteen hours of the twenty-four, with only one launch in use.

GLASGOW, 1907.—HOUSING OF ALIEN TRANSMIGRANTS BY SHIPPING COMPANIES DURING THEIR STAY IN GLASGOW.

Months.	Lodging-houses.				Hotels.				Direct to Ship.	Total Alien Emigrants.
	Emigrants and Home Population.		Emigrants only.		Emigrants and Home Population.		Emigrants only.			
	Number of Lodging-houses.	Number of Emigrants.	Number of Lodging-houses.	Number of Emigrants.	Number of Hotels.	Number of Emigrants.	Number of Hotels.	Number of Emigrants.		
January. - -	5	81	4	132	2	13	1	306	14	546
February, - -	10	203	4	320	5	179	1	476	56	1,234
March, - -	23	510	5	525	5	521	1	675	522	2,753
April, - -	19	186	5	431	4	294	1	272	41	1,224
May, - -	18	380	5	651	3	215	2	537	90	1,873
June, - -	15	420	5	993	3	226	1	688	191	2,518
July, - -	1	5	6	365	1	42	1	374	29	815
August, - -	6	84	5	311	2	142	1	414	81	1,032
September, -	3	57	8	234	1	74	1	399	90	854
October, - -	17	424	5	417	5	347	1	496	78	1,762
November, -	19	647	26	769	5	405	1	538	440	2,799
December, -	9	97	6	408	2	136	1	375	136	1,152
		3,094		5,556		2,594		5,550	1,768	18,562

Of the total, 1,768, or 9·5 per cent., went direct to the ship without temporary lodging in Glasgow; 11,106 were accommodated by themselves in common lodging-houses or hotels; while 5,688 were housed in lodging-houses and hotels along with the home population.

SECTION IV.

AN ACCOUNT OF THE HOUSE ACCOMMODATION OF THE LABOURING CLASSES IN THE BURGH, AND OF ANY PROCEEDINGS UNDER THE HOUSING OF THE WORKING CLASSES ACT OR OTHERWISE.

In this section is contained a report on the special work undertaken by Dr. Archibald.

(A.) Glasgow Police (Amendment) Act, 1890, Section 32.

No action was taken under this section during 1907, and the total number of houses closed under its operation remains as at 31st December, 1904 (see Report for that year, page 108).

(B.) Housing of the Working Classes Act, 1890, Part II. (Sec. 30).

During 1907 representations under Section 30 of this Act were submitted to the Local Authority affecting tenements in the following Wards:—

Wards.	No. of Representations.
I.—Dalmarnock,	7
II.—Calton,	2
III.—Mile-end,	5
IV.—Whitevale,	3
V.—Dennistoun,	2
VI.—Springburn,	1
IX. } Blackfriars,	1
IXA. } Blackfriars,	2
XIV.—Sandyford,	1
XVI.—Cowcaddens,	4
XIX.—Gorbals,	8
XX.—Kingston,	2
XXI.—Govanhill,	2
	40

These representations affected 458 houses, of which 332 were of 1 apartment, 123 of 2 apartments, 2 of 3 apartments, and 1 of 4 apartments.

42 of the one-apartment houses, and 31 of the two-apartments, were empty at the time of representation, and the remaining 385 houses were occupied by 899 adults and 403 children—a total of 1,302 persons, giving a ratio of 3·4 persons per occupied house.

638 adults and 252 children were resident in 290 houses of one apartment, giving an average of 3 persons per single-apartment house; 247 adults and 145 children dwelt in the 92 two-apartment houses, giving an average of 4·3 persons per each two-apartment house, or 2·2 per room. 9 adults and 5 children were housed in two houses of three apartments, giving an average of 7 persons per three-apartment house, or 2·3 per room; and 6 persons dwelt in the four-apartment house, or 1·2 per room.

Table A contains a statement of the number of houses and of persons affected in each Ward, by the foregoing representations.

TABLE A.—STATEMENT of the NUMBER of HOUSES and of the PERSONS affected in each WARD by REPRESENTATIONS submitted during 1907.

Ward.	Date.	Address.	Houses. Apartments. 1.	2.	3.	4.	Population. 1 apt. Ad.	Ch.	2 apts. Ad.	Ch.	3 apts. Ad.	Ch.	4 apts. Ad.	Ch.	Totals. Ad.	Ch.	Tl.
I.	Feb. 22	61-65 Dale Street, B'n.,	*(2) 18	1	...	...	29	23	3	2	...	...	...	...	32	25	57
	,, ,,	15 Hozier Street, ...	1	..	...	...	3	...	...	...	...	...	...	...	3	...	3
	,, ,,	13-19 Howard Street,	(1) 18	2	...	...	31	15	6	5	...	...	...	...	37	20	57
	,, ,,	43 Franklin Street, ...	1	...	..	...	3	2	...	...	...	...	...	...	3	2	5
	,, ,,	35 Reid Street, ...	2	...	...	...	4	2	...	...	...	...	...	...	4	2	6
	Sept. 6	48 Savoy Street, ...	(1) 9	1	...	...	16	3	2	1	...	...	...	...	18	4	22
	,, ,,	24 Oswald Street, ...	(2) 12	4	...	...	24	5	11	8	...	...	...	...	35	13	48
		Total, ...	61	8	...	...											
		Empty, ...	6	...	...	...											
		Occupied, ...	55	8	...	...	110	50	22	16	...	...	...	...	132	66	198
II.	March 12	12-18 Tobago Street,	15	...	...	...	24	7	...	...	...	...	...	...	24	7	31
	Sept. 6	18 John Street Lane,	...	2	...	...	...	...	4	2	...	...	...	...	4	2	6
		Total, ...	15	2	...	...											
		Empty, ...	...	1	...	...											
		Occupied, ...	15	1	...	...	24	7	4	2	...	...	...	...	28	9	37
III.	July 23	64 Broad Street and 7 Summer Street, ...	2	(1) 3	...	...	6	1	4	1	...	...	...	...	10	2	12
	,, ,,	832 Great Eastern Rd.,	2	(2) 5	...	...	6	3	10	6	...	...	...	...	16	9	25
	Sept. 6	80 Brook Street, ...	13	4	...	...	31	10	19	7	...	...	...	...	50	17	67
	Oct. 29	106 Sister Street, ...	...	2	...	...	...	...	5	4	...	...	...	...	5	4	9
	,, ,,	114 do., ...	...	6	...	...	...	...	13	12	...	...	...	...	13	12	25
		Total, ...	17	20	...	...											
		Empty, ...	...	3	...	...											
		Occupied, ...	17	17	...	...	43	14	51	30	...	...	...	...	94	44	138
IV.	May 29	526-534 Duke Street, ...	(1) 3	(3) 8	...	...	2	4	18	7	...	...	...	...	20	11	31
	July 22	541 Great Eastern Rd.,	2	...	...	...	2	...	...	...	...	...	...	...	2	...	2
	Oct. 29	15 Moore Street, ...	...	(3) 6	...	...	...	...	9	3	...	...	...	...	9	3	12
		Total, ...	5	14	...	...											
		Empty, ...	1	6	...	...											
		Occupied, ...	4	8	...	...	4	4	27	10	...	...	...	...	31	14	45

* The small figures in brackets show the number of empty houses of each size at each address at the time of representation.

REPRESENTATIONS—*Continued.*

Ward.	Date.	Address.	Houses. Apartments. 1.	2.	3.	4.	Population. 1 apt. Ad.	Ch.	2 apts. Ad.	Ch.	3 apts. Ad.	Ch.	4 apts. Ad.	Ch.	Totals. Ad.	Ch.	Tl.
V.	May 29	32 Ark Lane, ...	2	(2) 4	...	...	3	...	5	5	...	...	...	...	8	5	13
	Nov. 6	121 Drygate, ...	(2) 11	1	...	...	21	8	2	1	...	...	...	...	23	9	32
		Total, ...	13	5													
		Empty, ...	2	2													
		Occupied, ...	11	3	...	...	24	8	7	6	...	...	...	...	31	14	45
VI.	Jan. 23	78 Garngadhill, ...	5	13	...	...											
		Empty, ...	2	7	...	...											
		Occupied, ...	3	6	...	...	8	1	19	15	...	...	...	...	27	16	43
IX.	Oct. 29	23 Deanside Lane, ...	...	15	...	...											
		Empty, ...	...	7	...	...											
		Occupied, ...	...	8	...	...	...	...	21	15	...	...	...	...	21	15	36
IXA.	Feb. 27	66 Crown Street, ...	...	(2) 6	...	...	...	...	14	5	...	...	...	...	14	5	19
	„ „	58 Crown Street, ...	2	5	...	...	2	...	15	8	...	...	...	...	17	8	25
		Total, ...	2	11	...	...											
		Empty, ...	...	2	...	...											
		Occupied, ...	2	9	...	...	2	...	29	13	...	...	...	...	31	13	44
XIV.	March 13	17 Perth Street, An.,	10	1	...	...											
		Empty, ...	2	1	...	...											
		Occupied, ..	8	...	...	...	10	8	...	...	...	...	...	...	10	8	18
XVI.	Jan. 30	279 Garscube Road, ...	6	...	...	...	10	...	...	...	...	...	...	...	10	...	10
	„ „	4 Manresa Place, ...	(2) 8	4	...	...	9	1	10	7	...	...	...	...	19	8	27
	May 29	21A Lyon St. (Ft. & Bk.)	(9) 21	(1) 3	...	...	31	6	4	2	...	...	...	...	35	8	43
	Oct. 29	24-32 Water Street, ...	6	9	1	...	10	2	17	12	4	1	...	...	31	15	46
		Total, ...	41	16	1	...											
		Empty, ...	11	1	...	...											
		Occupied, ...	30	15	1	...	60	9	31	21	4	1	...	...	95	31	126

* The small figures in brackets show the number of empty houses of each size at each address at the time of representation.

REPRESENTATIONS—*Continued.*

Ward.	Date.	Address.	Houses. Apartments. 1.	2.	3.	4.	Population. 1 apt. Ad.	Ch.	2 apts. Ad.	Ch.	3 apts. Ad.	Ch.	4 apts. Ad.	Ch.	Totals. Ad.	Ch.	Tl.
XIX.	Jan. 23	31 Wellcroft Place, ...	8	...	...	...	15	9	...	...	...	...	...	...	15	9	24
	Feb. 27	16-18 Thistle Street, ...	(10) 18	(2) 5	...	...	20	...	6	2	...	...	...	...	26	2	28
	June 18	9 Cavendish Place, ...	14	1	...	...	29	17	3	...	...	...	...	...	32	17	49
	Sept. 6	3 Hospital Street, ...	(1) 21	1	...	...	46	5	3	1	...	...	..	...	49	6	55
	Oct. 29	89 Coburg Street, ...	2	...	...	...	5	3	...	...	...	...	...	...	5	3	8
	„ „	95 Do., ...	...	4	...	1	...	...	6	3	...	...	5	1	11	4	15
	„ „	84 Nicholson Street,	...	2	...	...	...	...	4	3	...	...	...	...	4	3	7
	„ „	23 Oxford Lane, ...	2	1	1	...	3	...	2	2	5	4	...	...	10	6	16
		Total	65	14	1	1											
		Empty, ...	11	2	...	...											
		Occupied, ...	54	12	1	1	118	34	24	11	5	4	5	1	152	50	202
XX.	July 23	160 West Street, ...	(2) 18	3	...	...	30	11	6	6	...	...	...	...	36	17	53
	„ „	45 Pollok Street, ...	(3) 43	1	...	...	105	40	6	...	...	...	...	...	111	40	151
		Total, ...	61	4	...	...											
		Empty, ...	5	...	...	...											
		Occupied, ...	56	4	...	...	135	51	12	6	...	...	...	...	147	57	204
XXI.	Jan. 30	Waterloo Row, ...	(1) 10	...	...	...	24	18	...	...	...	...	...	..	24	18	42
	June 18	Urie's Row, ...	(1) 27	...	...	...	76	48	...	...	...	...	...	...	76	48	124
		Total, ...	37	...	...	...											
		Empty, ...	2	...	...	...											
		Occupied, ...	35	...	...	...	100	66	...	...	...	...	...	...	100	66	166

* The small figures in brackets show the number of empty houses of each size at each address at the time of representation.

TABLE B.—SUMMARY of the DETAILS presented in TABLE A.

WARD.	Number of Tenements affected.	HOUSES.				POPULATION.										
		Apartments.				1 Apt.		2 Apts.		3 Apts.		4 Apts.		TOTALS.		
		1.	2.	3.	4.	Ad.	Ch.	Ad.	Ch.	Ad.	Ch.	Ad.	Ch.	Ad.	Ch.	Total.
I. Dalmarnock, ...	7	61	8	...	...	110	50	22	16	...	...	...	...	132	66	198
II. Calton, ...	2	15	2	...	...	24	7	4	2	...	...	...	...	28	9	37
III. Mile-end, ...	5	17	20	...	...	43	14	51	30	...	...	...	...	94	44	138
IV. Whitevale, ...	3	5	14	...	...	4	4	27	10	...	...	...	...	31	14	45
V. Dennistoun, ...	2	13	5	...	...	24	8	7	6	...	...	...	...	31	14	45
VI. Springburn, ...	1	5	13	...	...	8	1	19	15	...	...	...	...	27	16	43
IX. Blackfriars, ...	1	...	15	...	...	...	...	21	15	...	...	...	...	21	15	36
IXA. Blackfriars, ...	2	2	11	...	...	2	...	29	13	...	...	...	...	31	13	44
XIV. Sandyford, ...	1	10	1	...	...	10	8	...	...	...	...	...	...	10	8	18
XVI. Cowcaddens, ...	4	41	16	1	...	60	9	31	21	4	1	...	...	95	31	126
XIX. Gorbals, ...	8	65	14	1	1	118	34	24	11	5	4	5	1	152	50	202
XX. Kingston,... ...	2	61	4	...	...	135	51	12	6	...	...	...	...	147	57	204
XXI. Govanhill, ...	2	37	...	...	...	100	66	...	...	...	...	...	...	100	66	166
Total, ...	40	332	123	2	1											
Empty, ...		42	31	...	...											
Occupied, ...		290	92	2	1	638	252	247	145	9	5	5	1	899	403	1,302
						Per house, 3.		Per house, 4·3.		Per house, 7.		Per house, 6.		Per house—all sizes, 3·4.		
								Per room. 2·2.		Per room. 2·3.		Per room, 1·2.				

FARMED-OUT HOUSES.

Among the houses dealt with by these representations, 52 were farmed out at rents varying from 5s. to 6s. 6d. per week, 45 being single-apartment and 7 two-apartment houses.

The following summary (Table C) shows the addresses at which these houses were situated:—

TABLE C.—FARMED-OUT HOUSES.—1907.

Ward.	Address.	1 apart.	2 aparts.	3 aparts.
XIX.	16-18 Thistle Street, S.S.,... ...	18	5	...
XIX.	3 Hospital Street, S.S., ...	21	1	...
V.	121 Drygate (front), ...	6	1	...
		45	7	...

Among the tenants affected by representations during the year were four who kept lodgers. The addresses at which these families resided, together with size of house and occupants, are shown below:—

Address.	Size of House.	Number of—	
		Occupants.	Lodgers.
64 Broad Street, 7 Summer Street, ...	2 apartments	5	2
832 Great Eastern Road, ...	1 apartment	4	2
15 Moore Street, ...	2 apartments	4	1
95 Coburg Street, S.S., ...	4 apartments	6	4
		19	9

Results of Representations.

Before considering the action which followed the representations submitted during the year, it will be convenient to summarise shortly the results of all the representations presented since systematic procedure was begun under the Housing of the Working Classes Act in 1902. The following Table (D) brings the record down to the end of December, 1907.

TABLE D.—SUMMARY of REPRESENTATIONS under the HOUSING of the WORKING CLASSES ACT, with RESULTS as at close of 1907.

Year.	No. of Representations.	Persons affected.	Removed.						Agreed to Remove.			Repaired.	Failed to obtain Closing Order.	Pending.
			1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.			
1902	3	185	1	2	...	...	...	...	...	...	...	...	...	...
1903	31	1,103	...	6	13†	1	...	...	...	...	...	...	1‡	11
1904	81‖	1,717	...	...	18	17	11	6	2	1	...	5	...	14
1905	100**	2,577	...	...	...	14	18	7*	2	...	...	7	1¶	49
1906	73§	1,779	..	...	...	...	7	12*	1	...	...	...	...	57
1907	40	1,302	...	...	...	...	...	1	2	...	1	1	...	35
Total,	328	8,663	1	8	31	32	36	26	7	1	1	13	2	166

* Four other tenements represented during 1905 were agreed to be removed in 1907, but the agreement was not carried out, and the tenements remained occupied at the end of the year.

† In 4, 6, 8 Water Street and 538-546 Dobbie's Loan, represented together, the tenement at 8 Water Street only was removed.

‡ 75 Brown Street, Anderston.

‖ Owing to separate ownership, these 81 Representations refer to only 74 separate or "grouped" addresses.

¶ 50 Crown Street.

** 100 Representations, owing to separate ownership, affected 98 separate or "grouped" addresses.

§ 3 Representations here affected 7 separate tenements.

Displacements in 1907.

These may most conveniently be considered in order of the year of representation.

From 1904 Representations.

Table D shows 6 tenements represented in 1904 to have been removed in 1907. The number of houses and persons occupying them at the time of representation are shown in the following Table E:—

TABLE E.—1904 REPRESENTATIONS. DISPLACED 1907.

ADDRESS.	HOUSES.				POPULATION.		
	1 apt.	2 apts.	3 apts.	4 apts.	Adults.	Children.	Total.
3 Green Street, Calton, ...	3	2	...	...	6	2	8
41 James Street, Calton, ...	8	2	...	...	15	6	21
18-20 Water Street, ...	2	5	1	...	27	7	34
32 South Wellington Street,	10	6	...	...	38	9	47
2 South Stirling Street, ...	...	14	2	...	55	17	72
6, &c., Buchanan Court, ...	2	9	3	...	40	16	56
	25	38	6	...	181	57	238

Great difficulty has again been experienced in following the displaced tenants to their new addresses. Change of residence is frequent among the class of tenants inhabiting these properties, and the houses just before their demolition are seldom occupied by the persons occupying them at the time of representation, unless, indeed, a very short interval separates these stages. An additional difficulty arises from the fact that, when the time agreed upon for demolition approaches, incoming tenants are not found in numbers equal to those leaving, and consequently many houses remain empty. It thus follows that the number of tenants who can finally be followed up is usually far short of those primarily affected. Difficulty also is experienced sometimes through the tenants being displaced some considerable time before the time agreed upon for demolition and before their future movements have been ascertained. Further, it is no uncommon thing to find tenants unwilling or unable to disclose accurately their next address, or who absolutely refuse to give any information at all.

As a result of one or other of these causes, it was only possible to follow up 48 of the original 60 families (comprising 153 persons) affected by the representations.

In the sub-joined Table F the details of these changes are shown. Instead of 22 families, embracing 58 persons, resident in one-apartment houses, the displacement produced 14 families with 42 persons. Instead of 23 two-apartment families with 81 persons, we had 24 families with 86 persons; and 2 of the 3 families, embracing 11 persons, resident in three apartments, changed into two apartments at the new addresses. 5 families, including 12 persons, were not found at the addresses given, and were lost sight of, and 4 families (10 persons), went into lodgings.

TABLE F.—STATEMENT of RESULTS of DISPLACEMENTS in 1907 from TENEMENTS represented in 1904 where these were obtainable.

ADDRESS.	FAMILIES.						PERSONS.						Not Traced.		To Lodgings.	
	Old Address.			New Address.			Old Address.			New Address.						
	1 apt.	2 apts.	3 apts.	1 apt.	2 apts.	3 apts.	1 apt.	2 apts.	3 apts.	1 apt.	2 apts.	3 apts.	Families.	Persons.	Families.	Persons.
3 Green Street, Calton, ...	3	2	...	...	2	...	7	5	...	...	5	...	...	...	3	7
41 James Street, Calton (back),	7	3	...	3	5	...	16	9	...	6	17	...	2	2	...	...
Do. do. (front),	4	3	...	3	3	...	13	16	...	10	14	...	1	5	...	...
18 Water Street, Port-Dundas,	1	1	1	1	1	1	2	4	3	2	4	3	...	...	...	...
20 do. do., ...	1	2	...	1	2	...	3	7	...	3	7	...	...	...	...	...
32 So. Wellington Street (back),	6	3	...	4	4	...	17	13	...	14	14	...	1	2	...	...
2 South Stirling Street, ...	...	1	1	1	1	...	...	4	7	4	7	...	...	...	...	...
4 and 6 Buchanan Court, S.S.,	...	8	1	1	6	...	...	23	4	3	18	...	1	3	1	3
	22	23	3	14	24	1	58	81	14	42	86	3	5	12	4	10

From 1905 Representations.

On again referring to Table D it is seen that 7 tenements represented in 1905 were removed during 1907, and the number of houses and the persons occupying these at the time of representation are shown in the following Table G. Other 4 tenements were agreed to be removed during the year, but the agreements were not carried out, and the tenants remained in occupation at the close of the year.

TABLE G.—1905 REPRESENTATIONS. DISPLACED 1907.

ADDRESS.	HOUSES.			POPULATION.		
	1 Apt.	2 Apts.	3 Apts.	Adults.	Children.	Total.
176 Main Street, S.S., ...	32	...	...	50	14	64
64 Ann Street, ...	5	3	...	11	8	19
1 Water Street, Port-Dundas,	7	2	...	54	21	75
33 Franklin Street, ...	5	2	...	11	12	23
24 Millroad Street, ...	2	...	...	4	3	7
16 Landressy Street, ...	...	12	...	28	11	39
3, 5, 7 Buchanan Lane, ...	...	6	...	19	7	26
	51	25	...	177	76	253

In the subjoined Table H the details of these changes are shown.

TABLE H.—1905 REPRESENTATIONS.

ADDRESS.	FAMILIES.						PERSONS.						NOT TRACED.		TO LODGINGS.	
	Old Address.			New Address.			Old Address.			New Address.						
	1 apt.	2 apts.	3 apts.	1 apt.	2 apts.	3 apts.	1 apt	2 apts.	3 apts.	1 apt.	2 apts	3 apts.	Families.	Persons.	Families.	Persons.
176 Main Street, S.S. (Back),	32	...	...	19	8	...	75	...	...	39	23	...	2	7	3	6
64 Ann Street, Port-Dundas,	3	2	...	3	2	...	3	4	...	3	4	...	...	...	...	...
1 Water Street, Port-Dundas,	3	...	...	1	2	...	5	...	...	1	4	..	...	...	...	...
33 Franklin Street, Bridgeton,	4	...	...	...	3	...	15	...	...	...	14	...	1	1	...	...
24 Millroad Street, Calton, ...	2	...	...	...	...	...	4	...	...	...	...	...	1	2	1	2
16 Landressy Street, ...	...	12	...	5	6	...	...	34	...	17	14	...	...	...	1	3
3, 5, 7 Buchanan Lane, ...	...	5	...	1	3	1	...	18	...	3	10	5	...	...	...	...
	44	19	...	29	24	1	102	56	...	63	69	5	4	10	5	11

Again it will be seen that of 177 adults and 76 children inhabiting the occupied houses at the time of representation, there remained only 102 adults and 56 children when the tenements came to be removed. There were thus 95 persons fewer at the demolition of the tenements than at the time of representation.

The 158 persons here dealt with were distributed thus:—At the old address, 44 families were in one-apartment houses and 19 in two-apartment houses. After displacement, 29 families were occupying one-apartment houses, 24, two-apartment houses, and 1 a three-apartment house. Thus, of 63 families dealt with when displacement occurred, 4, containing 10 persons, could not be traced; 5, containing 11 persons, went to lodgings; while of 102 persons who were living in one-apartment houses at the old address, only 63 were so housed at the new address, and the numbers living in two-apartment houses at both addresses had increased from 56 to 69.

From 1906 Representations.

Table D shows 12 tenements removed during 1907, but only 6 of these were under promise of removal. The persons occupying these at the time of representation are shown in the following Table I:—

TABLE I.—1906 REPRESENTATIONS—DISPLACED 1907.

	Houses.				Population.		
	1 apartment.	2 apartments.	3 apartments.	4 apartments.	Adults.	Children	Total.
1906.							
21-23 Charles Street, Bridgeton,	24	6	...	...	49	18	67
47-49 Main Street, Maryhill, ...	4	1	...	...	10	2	12
102 Portugal Street, S.S,, ...	...	9	...	...	20	17	37
41 Greenvale Street, ...	4	1	...	...	13	...	13
102 Crown Street, S.S., ...	...	4	...	...	16	3	19
26 Thistle Street, S.S., ...	1	5	2	...	16	13	29
3, 7 Portugal Lane, ...	1	2	...	...	7	5	12
22 Portugal Lane, ...	...	5	...	...	11	4	15
592-604 Dobbie's Loan, ...	...	24	...	...	34	34	68
663-671 Pollokshaws Road, ...	9	9	...	...	50	21	71
675 Pollokshaws Road, ...	7	2	...	...	15	8	23
681-689 Pollokshaws Road, ...	2	4	...	...	14	3	17
	52	72	2	...	255	128	383

Of 126 houses affected by the representations, it was only possible to follow up the occupants of 92 when displacement occurred, and the details of the consequent changes are shown in Table J.

In the old addresses 38 families, embracing 130 persons, were found resident in one-apartment houses; 52 families, of 220 persons, in two-apartment houses; and 2 families, accounting for 15 persons, dwelt in three-apartment houses. After displacement occurred 38 families were still resident in one-apartment houses, but the population here was reduced from 130 to 122. The two-apartment families were reduced from 52 to 37, and the population from 220 to 173. The 2 three-apartments became 4, and the population increased from 15 to 33. 6 families, representing 17 persons, were lost sight of, and 7 families, of 20 persons, went into lodgings. The nature of these lodgings is shown by the footnotes to Table J.

TABLE J.—STATEMENT of RESULTS of DISPLACEMENTS in 1907 from TENEMENTS represented during 1906 where these were obtainable.

ADDRESS.	FAMILIES.						PERSONS.						NOT FOUND.		TO LODGINGS.	
	Old Address.			New Address.			Old Address.			New Address.						
	1 Apt.	2 Apts.	3 Apts.	1 Apt.	2 Apts.	3 Apts.	1 Apt.	2 Apts.	3 Apts.	1 Apt.	2 Apts.	3 Apts.	Families.	Persons.	Families.	Persons.
21-23 Charles Street, Bn.,	15	6	...	10	6	...	59	11	...	35	24	...	3	8	2	3a
47-49 Main Street, Maryhill,	4	1	...	5	...	...	10	3	...	13	...	...	...	...	...	...
102 Portugal Street, S.S., ...	...	5	...	...	4	...	...	27	...	...	22	...	1	5	...	...
41 Greenvale Street, ...	4	1	...	4	1	...	10	5	...	10	5	...	...	...	...	...
102 Crown Street, S.S., ...	...	3	...	...	1	2	...	21	...	...	4	17	...	...	...	...
26 Thistle Street, S.S., ...	1	5	1	1	5	...	2	22	4	2	20	...	...	...	1	6
3 Portugal Lane, ...	...	2	...	2	...	...	...	7	...	7	...	...	...	...	...	...
7 „ „	1	...	...	1	...	...	5	...	...	5	...	...	...	...	...	...
22 „ „	...	3	...	...	3	...	...	16	...	...	16	...	...	...	...	...
592 Dobbie's Loan, ...	...	5	...	1	2	...	...	16	...	2	10	...	1	2	1	2
602-604 „ „	...	6	...	...	4	...	...	21	...	...	13	...	1	2	1	6b
671 Pollokshaws Road (bk.),	2	6	1	4	3	2	7	31	11	14	19	16	...	...	...	...
671 „ (front),	5	3	...	4	3	...	18	13	...	16	13	...	...	...	1	2c
675 „ „	4	2	...	3	2	...	13	11	...	10	13	...	...	...	1	1
681-689 „ „	2	4	...	3	3	...	6	16	...	8	14	...	...	...	...	...
	38	52	2	38	37	4	130	220	15	122	173	33	6	17	7	20

a One to "Model," two to Lodgings. b To Barnhill. c To Model.

From 1907 Representations.

One tenement, 15 Moore Street, Calton, was closed, and the building was afterwards removed.

TABLE K.

2 Apartments.	Adults.	Children.	Total.
6(3)	9	3	12

TABLE L.—RESULT OF DISPLACEMENT.

	FAMILIES.						PERSONS.					
	Old Address.			New Address.			Old Address.			New Address.		
	1 apt.	2 apts.	3 apts.	1 apt.	2 apts.	3 apts.	1 apt.	2 apts.	3 apts.	1 apt.	2 apts.	3 apts.
15 Moore Street, ...	...	2	...	...	1	1	...	5	...	...	2	3

The total number of persons originally occupying the houses closed during the year is as follows:—

TABLE M.

Year of Representation.	Houses.				Population.		
	1 apt.	2 apts.	3 apts.	4 apts.	Adults.	Children.	Total.
1904, ...	25	38	6	...	181	57	238
1905, ...	51	25	...	...	177	76	253
1906, ...	52	72	2	...	255	128	383
1907, ...	...	6	...	...	9	3	12
Total, ...	128	141	8	...	622	264	886

Table N is a summary of the results of rehousing of all the families displaced during the year. It will be noted that of the 205 families found in occupancy at the time of displacement 104 were resident in one-apartment houses (290 persons), 96 (362 persons) in two-apartment houses, and 5 (29 persons) in three-apartment houses. At the new addresses the following figures are found to obtain:—81 families (227 persons) dwelt in one-apartment houses, 86 families (330 persons) in two-apartments, and 7 families (44 persons) in three-apartment houses. Fifteen families, embracing 39 persons, were lost sight of, and the remaining 16 families (41 persons) were rehoused in lodgings. One family of 6 persons went to Barnhill Poorhouse; 2, accounting for 3 persons, went to "models," and in several other instances the displaced families found temporary lodgings with relatives. In 4 instances the families went into farmed-out houses, but three of these had already been tenants in such before.

TABLE N.

Families.						Persons.						Not Traced.		To Lodgings.	
Old Address.			New Address.			Old Address.			New Address.						
1 apt.	2 apts.	3 apts.	1 apt.	2 apts.	3 apts.	1 apt.	2 apts.	3 apts.	1 apt.	2 apts.	3 apts.	Families.	Persons.	Families.	Persons.
104	96	5	81	86	7	290	362	29	227	330	44	15	39	16	41

The percentage of houses of various sizes at both addresses is shown in the following Table O:—

TABLE O.

	Percentage of Houses.			Lost.	To Lodgings.
	1 apt.	2 apts.	3 apts.		
Old address, ...	50·7	46·8	2·5	...	...
New address, ...	47·0	49·0	4·0	7·3	7·4

The grand total of the houses closed and persons displaced since the Act was put in operation is shown in the following Table:—

TABLE P.—HOUSES CLOSED and PERSONS DISPLACED.

Year.	Houses.				Population.
	1 apt.	2 apts.	3 apts.	4 apts. and up.	
1902, ...	...	14	...	...	53
1903, ...	62	60	2	1	404
1904, ...	187	124	5	...	732
1905, ...	113	106	4	...	566
1906, ...	136	147	4	...	786
1907, ...	128	141	8	...	886
	626	592	23	1	*3,427
Total Houses,	1,242				

* During these years 1,705 houses of one apartment, 1,286 of two apartments, 88 of three apartments, and 13 of four apartments and upwards were represented, and the total population resident therein numbered 8,663.

TABLE Q.—RELATION TO SCHOOL AND WORK.

ADDRESS.	Work.			School.		
	Nearer.	Further.	No Change	Nearer.	Further.	No Change
671 Pollokshaws Rd., ...	4	8	2	3	3	...
„ „ (front),	3	5	5	1	5	...
675 „ „ ...	2	2	...	...	2	...
681-689 „ „ ...	1	5	1	...	1	1
592 Dobbie's Loan, ...	1	1	1	...	1	...
602 „ „ ...	...	...	3	1	...	1
3-5-7 Buchanan Lane,...	...	...	5	...	...	4
15 Moore Street, ...	...	1	1	...	...	1
22 Portugal Lane, ...	...	2	1	...	3	...
3 „ ...	...	...	2	...	...	1
7 „ ...	...	1	...	...	1	...
26 Thistle Street, S.S., ...	1	4	2	1	3	1
176 Main Street, Gorbals,	4	12	13	...	4	1
102 Crown Street, S.S., ...	...	...	3	...	...	2
41 Greenvale Street, ...	...	...	5	...	...	2
2 South Stirling Street,	...	...	2	...	...	2
4 Buchanan Court, ...	1	...	5	1	...	2
1 Water St., P.-Dundas,	...	...	3	...	...	...
64 Ann St., „	...	...	8	...	...	2
18-22 Water St., „	...	...	7	...	...	3
16 Landressy Street, ...	...	2	3	1	1	1
32 S. Wellington Street,	1	...	7	1	1	2
3 Green Street, Calton,	...	...	3	...	...	...
24 Millroad Street, ...	...	...	...	...	...	...
33 Franklin Street, ...	...	...	3	...	...	2
41 James Street (back),	...	1	4	...	1	3
41 „ (front),	1	2	4	...	1	2
102 Portugal Street, S.S.,	1	2	1	2	1	...
21-23 Charles St., B'ton,	...	...	18	...	...	6
47-49 Main St., Maryhill,	2	...	1	...	1	...
	22	48	113	11	29	39

Ownership of Represented Tenements.

The tenements represented during 1907 were owned in the following manner:—

Private Owners.	Firms.	Trustees.
23	4	13

40

Private Owners.

Resident in Glasgow.	Resident Outside Glasgow.
14	9

23

THE "MODEL" AS A FACTOR IN THE PROBLEM OF HOUSING.

The attention which has recently been directed to common lodging-houses receives emphasis from the reference made in the recent Report of the Royal Commission on the Care and Control of the Feeble-Minded to the character of the inmates of model lodging-houses.

The "model" forms a distinct class in the group of common lodging-houses, and in paragraph 1027, pp. 395-6, Vol. VIII. of the Report just referred to, the following observations occur:—

"Mr. Henderson, the Governor of Barnhill Poorhouse at Glasgow, in which it is clear a very low class of population is received, . . . submitted tables showing that, of 5,588 males admitted to the ordinary wards of the poorhouse in 1905, 4,444, or 79·5 per cent. came from the "models," and only 1,144, or 20·5 per cent., from private houses; that 5,334, or 95·5 per cent. drink, and that only 254, or 4·5 per cent. do not drink; and that 51·1 per cent. had been in prison. These figures indicate that the persons admitted to the poorhouse are, to a large extent, of the lowest grade in the City."

It is pertinent, therefore, to ask whether the habits of life engendered by residence in a model tend to foster or repress the excesses here indicated. We know that the part played by the "model" lodging-house in the social economy of modern life has not been wholly injurious. The relief to domestic overcrowding which the "model" afforded, and the more ready control of infectious disease which thereby became possible were, as matter of history, substantial factors in the reduction of diseases of this class. All this has been to the public advantage, but the obvious interpretation of the extract just quoted is that coincidently with this the "models" have tended towards the aggregation of a class of lodger who is for the most part outwith the social order, by reason of the defects stated.

It is desirable, therefore, to enquire whether these defects which now attract attention are accidents of growth rather than fundamental features in the provision of lodgings of this class. On this point the evolution of the "model" throws some light.

There were vagrants in the days of the Tudors, and much of the Poor Law legislation of that period was directed towards his suppression. The "modeller" of to-day preserves in a latent form much of the migratory tendency of his Elizabethan prototype, and it is only by the pressure of social evolution that he is becoming welded, so to speak, into a concrete and fairly definite stratum of the social organism. Whether, in the outcome, some of the directions in which this pressure has been exerted will prove to have been altogether wise and beneficial is a question of considerable importance.

Prior to 1871 it may be said that the common lodging-house or "model," as it is now known, did not exist. Houses where lodgings could be had did, it is true, exist, but in structure and use they were of the nature of private houses taking in lodgers. The Registrar-General for Scotland took advantage of the census of 1871 to throw some light on the question. He reported that 23 per cent. of all the families of Glasgow took in lodgers, and that 20 per cent. of the families with lodgers were dwellers in houses of one room, and 48 per cent. were dwellers in houses of two rooms.

Shortly after this, the Corporation began to clear certain of the insanitary areas scheduled under the City Improvement Act of 1866. During this it was found that 14 per cent. of the one-roomed families in the areas contained lodgers, as did 27 per cent. of the two-roomed families, and 32 per cent. of those of three rooms. This fact, together with the quite uncontrolled character of the occupancies, determined the Improvement Trust to erect and maintain model lodging-houses, and between 1871-79 7 houses were constructed to contain 1946 beds of 300 (now 400) cubic feet each. One of those only, with 96 beds, was reserved for females. Following on the financial success which attended this venture, other "models" under private ownership were subsequently opened.

Results.

The first results of the lodging-house scheme seemed to be all good. The over-crowding in private dwelling-houses was reduced.

In 1871, 71 per cent. of the overcrowding found in ticketed houses arose from the practice of keeping lodgers, in 1877-81 this proportion fell to 65 per cent., and in 1888 to 29 per cent., while in 1905 it was 34 per cent., and in 1907 27·6 per cent. In the latter year the proportion of ticketed houses found overcrowded was 6 per cent. of the whole.

Moreover, the lodger who had become a "modeller" was placed under conditions where certain irregularities might be restrained. From the point of view of health this also was an undoubted gain, for there is no advantage to the public welfare, and less than none to the keeper of a "model," if a succession of cases of infectious illnesses occurs among the inmates, which will in time drive from his house those whom disease does not attack.

But there is another aspect of the question. What is the effect of the system on the "modeller" himself? Does he find any stimulus therein to recover the position in the social order from which he has momentarily stepped apart? It is to be feared that he does not. The inmates, more especially of the male lodging-house, constitute a class almost wholly apart from the rest of society.* They have no civic responsibility, and no stimulus to continue work beyond what is necessary to supply their daily needs. Three-fourths of them at least are there because of drink, and only by disciplinary regulation is life in a "model" made even tolerable.

To be known by the number of your bed, and not by your name, must produce indifference, and the main tendency of model lodging-house life in its present form would seem to be towards social deterioration, because it encourages a sense of irresponsibility, which is quite inconsistent with citizenship. A man is permitted to enter solely because in many, if not in most cases, he has the inclination so to do, and can provide the sum required for his bed. No question is asked as to why "model" life for him is necessary, and no limit is put to the length of time he may stay, provided he conforms to the elementary requirements which a "model" community demands.

It is therefore reasonable to ask whether the price paid for the relief to overcrowding which the "model" provided has not been too high. Looking at the movement historically, it will remain a question whether, by the more laborious method of steadily repressing domestic overcrowding, but without at the same time providing adventitious exits or escapes therefrom, we should not have accomplished more in the direction of reclaiming a class whose presence forms an apparently permanent blot on our social order. The "model," however, exists, and substantial effort should be made to reclaim the wastage which goes on in it. One step towards this reform would be taken were every applicant for admission put under some scrutiny as to the causes which induce him to seek such accommodation, and were a limit placed on the time during which he is to be allowed residence.

* That many respectable men do inhabit "models" is not here in question, but rather the misuse of the facilities which they afford by so large a proportion of their inmates.

TABLE R.—GLASGOW.—FARMED-OUT HOUSES and INMATES as at 18th AUGUST, 1907.

WARDS.	Number of Houses Farmed-out.		Inmates in Houses of each Size.			
			1 Apartment.		2 Apartments.	
	1 Apt.	2 Apts.	Adults.	Children.	Adults.	Children.
1. Daimarnock, ...	...	...	...	...	...	...
2. Calton, ...	122	81	260	76	157	85
3. Mile-end, ...	15	...	29	10	...	...
4. Whitevale, ...	32	35	78	17	90	40
5. Dennistoun, ...	26	14	59	20	36	10
6. Springburn, ...	11	3	22	9	6	4
7. Cowlairs, ...	...	...	...	...	...	...
8. Townhead, ...	46	35	100	29	106	41
9. Blackfriars, ...	137	92	301	73	308	106
10. Exchange, ...	...	20	...	...	55	20
11. Blythswood, ...	...	...	...	...	...	...
12. Broomielaw, ...	27	37	60	52	90	56
13. Anderston, ...	113	18	195	62	49	19
14. Sandyford, ...	...	...	...	...	...	...
15. Park, ...	...	...	...	...	...	...
16. Cowcaddens, ...	39	5	74	6	16	3
17. Woodside, ...	...	...	...	...	...	...
18. Hutchesontown, ...	32	17	58	14	49	44
19. Gorbals, ...	28	9	51	14	37	17
20. Kingston, ...	8	50	15	5	146	87
21. Govanhill, ...	...	...	...	...	...	...
22. Langside, ...	...	...	...	...	...	...
23. Pollokshields, ..	...	...	...	...	...	...
24. Kelvinside, ...	...	...	...	...	...	...
25. Maryhill, ...	...	...	...	...	...	...
26. Kinning Park, ...	...	...	...	...	...	...
CITY, ...	636	416	1,302	387	1,145	532
CENSUS, 1901, ...	531	275	...	...	...	...

Houses Let in Lodgings.

Closely associated with the farmed-out houses are those let in lodgings, the distinction between them being to a large extent a technical one. An enumeration of the number of persons living in houses let in lodgings was also taken at 18th August, with the result that the number of families resident had decreased from 675 in 1905 to 622 in the present year, and that the total number of persons composing these families had decreased from 1,436 to 1,384. In both years the information has been supplied by the principal tenant of the houses.

Table 8.—HOUSES Let in Lodgings, showing Numbers in each Ward, as at 18th August, 1907.

Wards.	No. of Houses on Register.	No. of Houses Empty or in which no Lodgers kept.	No. of Houses Actually Let in Lodgings.	No. of Apartments.	No. to Accommodate (Adults).	Inmates found.	
						No. of Families.	Total No. of Persons (All Ages).
1. Dalmarnock, ...	15	11	4	8	30½	10	28
2. Calton, ...	36	13	23	88	196½	47	106
3. Mile-end, ...	9	5	4	9	31½	8	22
4. Whitevale, ...	28	24	4	10	31	8	20
6. Springburn, ...	18	3	15	30	103½	34	77
7. Cowlairs, ...	16	10	6	16	78	34	54
8. Townhead, ...	18	2	16	45	121½	42	99
9. Blackfriars, ...	44	24	20	73	228½	59	142
11. Blythswood, ...	1	1	...	...	...	...	...
12. Broomielaw, ...	12	4	8	26	136	30	48
13. Anderston, ...	24	10	14	43	133½	45	82
14. Sandyford, ...	11	3	8	22	67	15	45
15. Park, ...	6	4	2	15	72	6	25
16. Cowcaddens, ...	24	15	9	23	63½	27	49
17. Woodside, ...	7	4	3	16	70	37	45
18. Hutchesontown,...	23	17	6	14	44½	9	39
19. Gorbals, ...	28	9	19	55	169½	68	126
20. Kingston, ...	21	10	11	29	94½	16	62
25. Maryhill, ...	83	31	52	109	375	127	315
CITY, ...	424	200	224	631	2,046½	622	1,384

Note.—In Wards 5, 10, 21, 22, 23, 24, and 26 there are no Houses Let in Lodgings on the Register.

SECTION V.

OFFENSIVE TRADES.

PUBLIC HEALTH (SCOTLAND) ACT, 1897, SECTION 32.

During the year five applications were made and sanction given to establish the following business under the above section of the Act:—

Ward I.—Tallow and grease melting, bone and beef boiling, and chemical manure manufacturing.

II.—Tanner; extension of premises.

III.—Tallow melting.

IV.—Tallow melting.
Gut cleaning.

SECTION VI.

SPECIFIC ACCOUNT OF THE ADMINISTRATION OF THE FACTORY AND WORKSHOP ACT, 1901, IN WORKSHOPS AND WORKPLACES, IN TERMS OF SECTION 132 OF THAT ACT, TOGETHER WITH A TABULAR STATEMENT IN THE FORM ISSUED BY THE HOME OFFICE.

REGISTER OF WORKSHOPS, &c.

Table XLV. contains a statement of the number of laundries, bakehouses, restaurant kitchens, other food places, and all other workshops, as well as the total number of workshops in each Ward in the City. The total number of registered workshops in the City is 5,294, as against 5,248 last year; the number of inspections made was 30,758; and the number of notices issued, 1,493.

Table No. I. of the Home Office list, which forms Table XLVI. of the present Report, requires that the number of inspections of such factories and factory laundries as are by Section 103 of the Factory Act placed under the jurisdiction of the Local Authority for sanitary purposes, and also of work-places as distinct from workshops should be stated, but the total visits are here included under workshops.

To outworkers' premises, 4,035 visits were made during the year, 3,432 of these being to home-workers' premises and 603 to contractors.

TABLE XLV.—GLASGOW, 1907.—NUMBER of WORKSHOPS and WORKPLACES on the REGISTER, NUMBER of INSPECTIONS, and of NOTICES sent to OCCUPIERS.

MUNICIPAL WARDS.	Laundries.	Bakehouses.	Restaurant Kitchens.	Other Food Places.	All Other Workshops.	Total Workshops.	Number of Inspections.	Number of Notices.
1. Dalmarnock, ...	7	24	20	1	136	188	821	23
2. Calton, ...	10	23	16	16	375	440	5,221	191
3. Mile-end, ...	8	30	19	3	149	209	1,328	50
4. Whitevale, ...	4	30	14	9	144	201	2,009	41
5. Dennistoun, ...	5	17	6	1	102	131	714	15
6. Springburn, ...	7	5	7	...	66	85	377	10
7. Cowlairs, ...	5	4	14	...	61	84	383	11
8. Townhead, ...	6	14	10	...	141	171	1,190	59
9. Blackfriars, ...	3	10	12	9	371	405	3,135	133
10. Exchange, ...	2	10	27	7	443	489	2,439	185
11. Blythswood, ...	2	6	37	4	334	383	2,617	123
12. Broomielaw, ...	3	5	25	14	322	369	3,166	153
13. Anderston, ...	8	4	22	1	106	141	177	7
14. Sandyford, ...	7	17	6	...	196	226	281	40
15. Park, ...	7	8	4	...	161	180	220	7
16. Cowcaddens, ...	10	22	11	1	120	164	1,383	85
17. Woodside, ...	19	7	7	1	166	200	755	73
18. Hutchesontown,	11	10	9	7	102	139	732	47
19. Gorbals, ...	12	17	11	5	391	436	2,323	139
20. Kingston, ...	13	11	21	4	222	271	1,261	74
21. Govanhill, ...	7	11	...	2	34	54	49	2
22. Langside, ...	10	12	...	...	51	73	28	...
23. Pollokshields, ...	3	5	...	...	17	25	31	...
24. Kelvinside, ...	5	1	1	...	70	77	41	...
25. Maryhill, ...	10	7	6	...	70	93	52	23
26. Kinning Park, ...	4	7	...	1	48	60	25	2
City, ...	188	317	305	86	4,398	5,294	30,758	1,493

Sanitary Condition of Workshops.

Table XLVI. shows the number of inspections, and the defects found under the several headings.

The number of visits of inspection here made, namely, 30,758, includes those made to factories as well as workshops and workplaces, but the allocation of the numbers for each group does not admit of a ready statement. In general the visits made to factories under the Public Health Act are for the purpose of discovering structural defects in connection with water closets, in the form of choked drains, &c.

Nature of Defects found.

Want of Cleanliness.—Speaking generally, it may be said that the condition in respect of cleanliness in the majority of workshops is satisfactory. In the instances noted in the Table—574—in which it was defective, the remedy largely consisted of limewashing.

Lighting and Ventilation.—In 31 cases this was defective. These cases mostly occurred in underground premises used as restaurant kitchens, where the temperature is apt to become excessive, and the need for free ventilation urgent. The lack of definition in the requirements of underground kitchens leads to considerable difficulty, and it would be an advantage were these premises, and all others where food is dealt with underground, brought within the provisions which now apply to underground bakehouses. At present many of them are defective both in lighting and ventilation.

Overcrowding.—The overcrowding here noted occurred during the day only; there is no record of any overcrowding during periods of overtime-work in the evenings, as knowledge when overtime is worked is not usually within the command of the Department. Overcrowding usually affects only one part of an establishment, say a small room where the number of workers need not be great to exceed the requirements of the Act.

Want of Drainage of Floors.—These defects are now chiefly found in laundries which are conducted in premises originally intended for shops. The number of these, however, is included, along with other defects, such as choked closets and requests to limewash, in the total given—709—as representing both in the Table.

Sanitary Accommodation.—Here, again, the several items of the Table—"Insufficient," "Unsuitable," and "Not separate"—are grouped together under 175 instances found.

The several items of this group cannot be separated, but in general it is the case that few places now have insufficient closet accommodation, save where a new business has been begun. A similar observation applies to the provision for the separate sexes.

The numbers here dealt with as "defects" or "unsuitable" usually arise from either misuse, carelessness, or tear and wear.

TABLE XLVI.

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES AND HOMEWORK.

INSPECTION.

(Including Inspections made by Sanitary Inspectors.)

Premises. (1)	Number of		
	Inspections. (2)	Written Notices. (3)	Prosecutions. (4)
Factories (including Factory Laundries), ...	...	...	...
Workshops (including Workshop Laundries),			
Workplaces (other than Outworkers' Premises included in Part 3 of this Report), ...	30,758	1,493	None.
Total, ...	30,758	1,493	...

DEFECTS FOUND.

Particulars. (1)	Number of Defects			Number of Prosecutions. (5)
	Found. (2)	Remedied. (3)	Referred to H.M. Inspector. (4)	
* Nuisances under the Public Health Acts—				
Want of cleanliness, ...	574	587	...	...
Want of ventilation or light, ...	31	32	...	...
Overcrowding, ...	4	4	...	...
Want of drainage of floors, ...	709	699	...	...
Other nuisances, ...				
Sanitary accommodation—(*a*) Insufficient, ...	175	199	...	...
(*b*) Unsuitable or defective,				
(*c*) Not separate for sexes,				
Offences under the Factory and Workshop Act—				
Illegal occupation of underground bakehouse (Section 101), ...	...	...	...	...
Breach of special sanitary requirements for bakehouses (Sections 97 to 100), ...	...	...	...	...
Other offences, ...	...	...	...	...
(Excluding offences relating to outwork which are included in Part 3 of this Report.)	...	...	...	...
Total, ...	1,493	1,521	...	...

* Including those specified in Sections 2, 3, 7, and 8 of the Factory and Workshop Act as remediable under the Public Health Acts.

NATURE OF WORK.*	OUTWORKERS' LISTS, SECTION 107.												Number of Inspections of Outworkers' premises.		OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.					OUTWORK IN INFECTED PREMISES, SECTIONS 109, 110.		
	Lists received from Employers.						Numbers of Addresses of Outworkers received from other Councils.		Numbers of Addresses of Outworkers forwarded to other Councils.		Prosecutions.				Instances.		Notices served.		Prosecutions.	Instances.	Orders made (S. 110).	Prosecutions (Sections 109, 110).
	Twice in the year.			Once in the year.							Failing to keep or permit inspection of lists.	Failing to send lists.										
	Lists. †	Outworkers. †		Lists.	Outworkers.																	
(1)	(2)	(3)		(4)	(5)		(6)		(7)		(8)	(9)	(10)		(11)		(12)		(13)	(14)	(15)	(16)
Wearing apparel—		Home-workers.	Con-tractors.		Home-workers.	Con-tractors.	Home-workers.	Con-tractors.	Home-workers.	Con-tractors.			Home-workers.	Con-tractors.	Home-workers.	Con-tractors.	Home-workers.	Con-tractors.				
(1) making, &c.,... ...	798	2,259	1,026	104	193	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(2) cleaning and washing,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lace, lace curtains and nets,	2	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Furniture and upholstery, ...	16	23	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fur pulling, ...	4	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umbrellas, ...	20	87	2	2	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Paper bags and boxes, ...	26	34	26	5	28	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Brush making, ...	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stuffed toys,...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
File making,...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Electro-plate, ...	64	18	128	2	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cables and chains, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anchors and grapnels, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Making and repairing sacks,	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cart gear, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Locks, latches, and keys, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total, ...	934	2,432	1,188	114	221	112	11	9	282	68	...	...	3,432	603	15 ‡	11 ‡	15	11	..	...	...	...

* If an occupier gives out work of more than one of the classes specified in column 1, and subdivides his list in such a way as to show the number of workers in each class of work, the list should be included among those in column 2 (or 4 as the case may be) against the principal class *only*, but the outworkers should be assigned in column 3 (or 5) into their respective classes. A footnote should be added to show that this has been done.

† The figures required in columns 2 and 3 are the *total* number of lists received from employers who sent them both in February and August as required by the Act and of the entries of names of outworkers in those lists. They will, therefore, usually be double of the number of such employers and (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name will often be repeated.

‡ Notices to whitewash or cleanse walls of premises.

REGISTERED WORKSHOPS.			OTHER MATTERS.		
Workshops on the Register (Section 131) at the end of the year. (1)		Number. (2)	Class. (1)		Number. (2)
Important classes of workshops, such as workshop bakehouses, may be enumerated here.			Matters notified to H.M. Inspector of Factories :—		
Laundries, ...		188	Failure to affix Abstract of the Factory and Workshop Act (Section 133), ...		23
Bakehouses :—			Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (Section 5) ...	Notified by H.M. Inspector, ...	23
Underground, ...	83			Reports (of action taken) sent to H.M. Inspector, ...	23
Overground, ...	237				
		320			
Restaurant Kitchens, ...		305			
Other Food Places, ...		86			
All other Workshops, ...		4,398	Other, ...		...
			Underhouse Bakehouses (Section 101) :—		
			Certificates granted during the year, ...		...
Total number of workshops on Register, ...		5,297	In use at the end of the year, ...		83

NOTE.—The Factory and Workshop Act, 1901 (Section 132), requires the Medical Officer of Health in his Annual Report to the District Council to report specifically on the administration of that Act in workshops and workplaces, and to send a copy of his Annual Report, or so much of it as deals with this subject, to the Secretary of State (Home Office). If the Annual Report is presented otherwise than in print, it is unnecessary to include in the copy sent to the Home Office the portions which do not relate to factories, workshops, laundries, workplaces, or homework. The duties of Local Authorities and the Medical Officer of Health under the Act of 1901 are detailed in the Home Office Memorandum of December, 1904. A further Memorandum, on the Home Work Provisions of the Factory Act, was issued to all District Councils and Medical Officers of Health in October, 1906.

July 31*st*, 1908.

Home-Work.

It would appear that in recent years a considerable alteration has occurred in the amount and nature of home-work carried on in Glasgow. Formerly it was common to find shawl fringers, trouser, vest, and cap makers, shirt-makers, stocking knitters, umbrella coverers, sack makers, and repairers, handkerchief-hemmers and scallopers, pea-pickers, paper-bag makers, paper flower makers, spinners, carpet sewers, &c., among home-workers. These have now to a very considerable extent disappeared, either because they have been transferred to factories (shirt-making, paper-bag making, &c.) or have been replaced by the growth of workshops frequently employing foreign labour of both sexes (suit, trouser, vest, cap, and slipper making).

With regard to the population engaged in this home-work, also, it falls to be remarked that many are aged persons, either widows or, if married, without families, so that the likelihood of infectious disease occurring with any frequency among them is very small.

WORKSHOPS MEASURED AND REGISTERED DURING 1907.

Nature of Workshop.	Number of Workshops.	Total Number of Rooms.	Total Number of Men.	Total Number of Women.	Total Young Persons, 14 to 18 Years.	Average Cubic Feet of Space in each Room.	Average Cubic Feet of Space for each Person.
I. Professional Occupations and their Subordinate Services—							
1. Medical—							
Dentists' Mechanics, ...	4	4	6	...	1	1,884·2	1,076·7
2. Art, Music, Drama, &c.—							
Engraver, ...	1	1	2	...	1	1,575	525
Photographers, ...	5	8	1	14	4	2,254·3	949·2
Piano Maker and Repairer,	1	1	3	...	...	1,142	380·6
Metal Art Designer, ...	1	1	2	...	1	3,345	1,115
II. Domestic Offices or Services—							
Laundries, ...	20	38	...	59	11	2,182·5	1,184·7
III. Mines and Quarries—							
Marble Cutters, ...	2	2	6	...	2	7,947	1,986·7
IV. Metals, Machines, Implements, and Conveyances—							
1. Engineering & Machine Making—							
Blacksmiths, ...	4	4	6	...	1	5,959·5	3,405·4
Brassfinisher, ...	1	1	2	...	...	5,365	2,682·5
Electricians, ...	2	2	2	...	3	1,723·5	689·4
Farriers, ...	2	2	5	...	...	4,738·5	1,895·4
Pattern Maker, ...	1	1	3	...	...	4,562	1,520·6
Ventilating Engineer, ...	1	1	2	...	...	3,115	1,557·5
2. Miscellaneous Metal Trades—							
Sheet-metal Workers, ...	4	4	13	...	...	9,159·5	2,818·3
Tinsmiths, ...	3	3	6	...	1	2,555·3	1,095·1
Ventilator Maker and Sheet-iron Worker, ...	1	1	5	...	...	24,655	4,933
3. Vehicles—							
Cartwrights, ...	3	4	10	...	...	10,783	4,313·2
Cycle Makers and Repairers,	6	6	46	...	...	39,743	5,183·8
V. Precious Metals, Jewels, Watches, Instruments, and Games—							
1. Precious Metals and Jewellery—							
Jewellers, Goldsmiths, Watch and Clock Makers, ...	5	5	10	...	3	2,018	776·1
2. Watches and Scientific Instruments—							
Optician, ...	1	1	1	...	...	1,365	1,365
Artificial Limb Maker, ...	1	1	4	...	...	5,032	1,258
Nautical Instrument Maker,	1	2	3	...	...	1,941	1,294
3. Musical Instruments—							
Piano and Organ Maker,	1	1	3	...	...	1,142	380·6
4. Apparatus for Sports and Games—							
Golf-club Maker, ...	1	1	2	...	...	3,246	1,623
Billiard Table Maker, ...	1	1	2	...	...	2,334	1,167
Fishing-tackle Maker, ...	1	1	...	6	3	19,769	2,196·5

WORKSHOPS MEASURED AND REGISTERED DURING 1907.—*Continued.*

Nature of Workshop.	Number of Workshops.	Total Number of Rooms.	Total Number of Men.	Total Number of Women.	Total Young Persons, 14 to 18 Years.	Average Cubic Feet of Space in each Room.	Average Cubic Feet of Space for each Person.
VI. Building and Works of Construction—							
1. House Building, &c.—							
Glazier, ...	1	1	6	...	1	5,580	797·1
Joiners and Wrights, ...	16	17	48	...	5	7,576	2,439
Painters, ...	2	2	2	1	1	3,673	1,836·5
Plumbers and Gasfitters,...	8	8	22	...	7	3,952·7	1,090·4
Slater, ...	1	1	6	...	...	3,118	519·6
Plasterer, ...	1	1	2	...	...	8,930	4,465
VII. Wood, Furniture, Fittings, and Decorations—							
1. Furniture, Fittings, and Decorations—							
Upholsterers, ...	5	6	15	3	2	9,098·8	2,729·6
Marquetry Cutting, ...	2	2	3	2	1	3,052·5	1,017·5
Picture-frame Maker, ...	1	1	2	...	...	1,772	886
Modeller, ...	1	1	3	...	...	3,280	1,093·3
Map Mounting, ...	1	1	4	1	1	15,190	2,531·6
Fish-bass Maker, ...	1	2	...	5	...	1,534·5	613·8
Cabinetmakers and French Polishers, ...	39	58	173	68	16	6,702·7	1,512·6
Carvers and Gilders, ...	6	6	20	1	1	3,966·3	1,081·7
Coffin Maker, ...	1	1	4	...	...	8,382	2,095·5
Chair Maker, ...	1	1	3	...	...	3,017	1,005·6
2. Wood and Bark—							
Showcase Maker, ...	1	1	2	1	...	2,903	967·6
Coopers, ...	2	3	8	...	...	2,543·3	953·7
VIII. Brick, Cement, Pottery, and Glass—							
Glass Stainers and Embossers,...	1	4	14	...	...	2,428·5	693·8
Emery Paper Manufacturer, ...	1	1	2	1	1	32,373	8,093·2
IX. Chemicals, Oil, Grease, Soap, Resin, &c.—							
1. Colouring Matter—							
Blacking Manufacturer, ...	1	1	1	3	...	3,787	946·7
2. Oil, Grease, Soap, Resin, &c.—							
India-rubber Merchant, ...	1	1	1	...	...	7,308	7,308
Polish Manufacturer, ...	1	2	2	...	3	14,892	5,956·8
X. Skins, Leather, Hair, & Feathers—							
1. Skins and Leather—							
Furriers, ...	3	4	4	5	2	1,891·2	687·7
Portmanteau and Bag Makers, ...	2	6	17	4	7	5,050·8	1,082·3
2. Saddlery and Harness—							
Whip Makers, ...	1	1	1	1	...	1,036	518
Saddlers, ...	3	3	6	...	1	2,283·6	978·9
3. Hair and Feathers—							
Brush Maker, ...	1	1	1	...	1	2,295	1,147·5

WORKSHOPS MEASURED AND REGISTERED DURING 1907.—*Continued.*

Nature of Workshop	Number of Workshops.	Total Number of Rooms.	Total Number of Men.	Total Number of Women.	Total Young Persons, 14 to 18 Years.	Average Cubic Feet of Space in each Room.	Average Cubic Feet of Space for each Person.
XI. Paper, Prints, Books, and Stationery—							
1. Paper and Stationery—							
Carbon Paper Maker, ...	1	1	...	4	...	24,720	6,180
Card Cutter, ...	1	1	2	6	4	14,453	1,204·4
Paper-bag Makers. ...	3	3	...	32	7	15,289·3	1,176·1
Paper-box Maker, ...	1	1	1	6	...	13,311	1,901·5
2. Prints and Books—							
Ticket Writer, ...	1	2	1	...	...	1,157	2,134
Printers and Stationers, ...	4	8	26	82	14	17,089·2	1,120·6
Pattern-book Maker, ...	1	1	3	...	...	4,562	1,520·6
XII. Textile Fabrics—							
1. Cotton and Flax—							
Warpers, ...	2	2	5	2	...	13,095·5	3,741·5
Weavers, ...	3	3	15	4	2	7,413	1,059
2. Wool and Worsted—							
Wool-clip Sorter, ...	1	1	...	1	1	2,289	1,140
3. Hemp and other Fibrous Materials—							
Sack Makers and Repairers,	3	4	5	10	1	6,063·7	1,515·9
4. Mixed and Unspecified Materials—							
Curtain Manufacturer, ...	1	1	2	1	...	7,884	2,628
Flag Maker, ...	1	2	...	2	...	1,009·5	1,009·5
Sewing Machinists, ...	1	1	...	4	1	1,932	386·4
Embroiderers, ...	2	2	2	5	...	20,546·5	5,875·4
XIII. Dress—							
Tie Maker, ...	1	1	...	10	5	5,434	362·2
Belt, Brace, and Necklet Maker, ...	1	1	...	2	2	14,450	3,612·5
Blouse Makers, ...	2	2	...	28	6	6,293	370·1
Boot, Shoe, and Slipper Makers, ...	82	93	153	4	2	1,886·8	1,104·2
Dressmakers, ...	92	119	4	579	118	3,055·3	518·6
Hairdresser, ...	1	1	2	...	...	6,313	3,156·5
Handkerchief Hemmers, ...	2	3	...	12	3	1,667·3	333·4
Hat-band and Pad Maker,	1	1	...	1	1	1,552	776
Mantle and Costume Makers, ...	5	6	13	42	9	5,865·8	549·9
Milliners, ...	18	19	1	77	22	2,979·4	566·1
Hatters, ...	3	4	6	1	3	2,403·2	961·3
Shirt Makers, ...	2	4	...	13	4	1,459·7	343·4
Stay Maker, ...	1	1	...	4	...	2,818	704·5
Tailors and Clothiers, ...	140	176	433	366	79	3,171·7	624·3
Hosiers, ...	2	3	...	29	4	5,971	542·8
Underclothing Manufacturers, ...	16	17	2	54	9	3,015·3	783·6
Napery, ...	1	1	...	2	...	952	476
Tartan Hose Manufacturer,	1	1	2	1	...	1,287	429

WORKSHOPS MEASURED AND REGISTERED DURING 1907.—*Continued.*

Nature of Workshop.	Number of Workshops.	Total Number of Rooms.	Total Number of Men.	Total Number of Women.	Total Young Persons, 14 to 18 Years.	Average Cubic Feet of Space in each Room.	Average Cubic Feet of Space for each Person.
XIV. Food, Tobacco, Drink, and Lodging—							
1. Food—							
Tea Blenders, ...	2	2	5	9	1	12,166	1,622·1
Butter Blocking, ...	1	1	...	2	...	3,924	1,647
Food Preservative Manufacturer, ...	1	2	1	1	...	2,849·5	2,849·5
Potted-meat Maker, ...	1	1	1	1	...	2,310	1,155
Sausage-skin Maker, ...	1	1	2	4	...	17,600	2,933·3
Sauce Makers, ...	4	6	4	15	...	6,902·3	2,179·6
Confectioners and Preserve Makers, ...	6	9	6	10	4	3,691·4	1,661·1
2. Dealing with Spirituous Drinks—							
Bottling and Labelling, ...	8	9	6	35	1	12,679·5	2,717
XV. Other General and Undefined Workers and Dealers—							
1. Sundry Specified Industries—							
Tailors' Crayon Manufacturer, ...	1	1	1	1	...	3,141	1,570·5
Mail-cart Maker, ...	1	2	8	4	...	16,000	2,666·6
Pipe and Stick Mounter,	1	1	1	...	...	1,207	1,207
Herbalist, ...	1	1	1	2	...	1,991	663·6
Rag and Waste Paper Merchants, ...	18	38	14	64	...	7,273·3	3,356·9
Engine Waste Manufacturer, ...	1	1	...	1	...	2,313	2,313
Japanners, ...	1	2	3	2	...	3,173	1,269·2
Lamp-shade Maker, ...	1	1	...	1	1	3,019	1,509·5

ABSTRACT OF RESTAURANTS MEASURED AND REGISTERED DURING 1907.

Districts.	Number of Restaurants.	Total Number of Rooms.	Total Number of Men.	Total Number of Women.	Total Young Persons, 14 to 18 Years.	Average Cubic Feet of Space in each Room.	Average Cubic Feet of Space for each Person.
Central, ...	13	15	13	26	1	3,548·5	1,330·7
Eastern, ...	11	14	13	17	...	1,847·5	862·2
Western, ...	2	2	1	4	...	2,297·5	919
Northern, ...	5	5	1	10	3	1,369	488·9
Southern, ...	5	5	1	9	...	1,360·4	680·2
North-West, ...	...	...	...	...	...	...	...
Kinning Park, ...	..	...	...	...	...	...	...
South Suburban, ...	...	...	...	...	...	...	...

NUMBER OF WORKSHOPS AND EMPLOYEES ON THE REGISTERS, AS AT 31ST DECEMBER, 1907.

Nature of Workshop.	Number of Workshops.	Total Number of Men.	Total Number of Women.	Total Young Persons 14 to 18 Years.
I. Professional Occupations and their Subordinate services—				
1. Medical—				
Artificial Teeth Makers, ...	23	48	1	10
2. Art, Music, Drama, &c.—				
China Painting, ...	1	1	6	2
Designer, ...	1	2	1	4
Fine Art and Fancy Goods Dealers, ...	4	10	28	10
Photographers, ...	46	54	122	42
Engravers, ...	27	69	3	44
Sculptors, ...	6	16	...	7
II. Domestic Offices or Services—				
Laundries, ...	188	17	670	151
III. Fishing—				
Fish Curers, ...	13	54	50	11
Fish Bass Makers, ...	2	...	11	...
IV. In and about and dealing with the Products of Mines and Quarries—				
1. Mines—				
Asbestos Manufacturer, ...	1	...	6	...
2. Quarries—				
Marble Cutters, ...	8	37	...	2
Mill-stone Builder, ...	1	6	...	...
V. Metals, Machines, Implements, and Conveyances—				
1. Manufacture of Mixed or Unspecified Metals—				
Metal Merchants and Refiners, ...	4	17	...	...
Spelter Manufacturer, ...	1	5	...	...
Tinsmiths and Coppersmiths, ...	44	161	9	49
2. Engineering and Machine Making—				
Blacksmiths, ...	62	191	...	8
Brassfinishers, ...	10	23	1	5
Electrical Engineers, ...	20	81	...	23
Farriers, ...	26	92	...	3
Heating and Ventilating Engineers, ...	6	45	...	3
Horse-shoe Pad Maker, ...	1	6	...	4
Indicator Makers, ...	2	19	...	2
Machine Makers and Repairers, ...	10	23	1	6
Machinists, ...	5	5	7	5
Pattern Makers, ...	3	15	...	3
Sheet-metal Workers, ...	10	35	...	11
3. Tools—				
Saw Makers, ...	7	13	...	6
Cutlers, ...	4	6	...	...
File Makers, ...	4	19	1	2

NUMBER OF WORKSHOPS AND EMPLOYEES ON THE REGISTERS, AS AT 31st DECEMBER, 1907.—*Continued.*

Nature of Workshop.	Number of Workshops.	Total Number of Men.	Total Number of Women.	Total Young Persons 14 to 18 Years.
V. Metals, Machines, &c.—*Continued*—				
4. Types, Dies, Medals, Coins—				
Stereotypers,	2	13	...	2
Die Sinkers,	2	12	...	...
5. Arms—				
Gunsmiths,	3	8	...	1
6. Miscellaneous Metal Trades—				
Bakers' Utensil Maker,	1	4	...	...
Chain Maker,	1	11	...	...
Electro-platers and Enamellers,	3	2	4	3
Fireproof-door Maker,	1	8	...	...
Lamp Makers,	2	4	1	1
Lead Worker and Embosser,	1	18	3	2
Locksmiths,	4	7	...	2
Nail Maker,	1	4	...	...
Weighing Machine and Scale Makers,	4	16	...	4
Wire Workers,	10	46	1	13
7. Ships and Boats—				
Ship-model Makers,	2	8	...	2
8. Vehicles—				
Cartwrights,	12	88	...	8
Carriage Builders,	13	185	...	28
Cycle and Motor Makers and Repairers,	48	150	3	12
9. Dealers—				
Ironmongers and Mill Furnishers,	8	24	1	3
VI. Precious Metals, Jewels, Watches, Instruments, and Games—				
1. Precious Metals and Jewellery—				
Gold Beaters,	2	17	1	...
Jewel-case Makers,	2	16	8	7
Jewellers, Goldsmiths, Watch and Clock Makers,	150	399	32	93
2. Watches and Scientific Instruments—				
Nautical and Scientific Instrument Makers,	4	13	...	...
Opticians,	10	20	1	5
Surgical Instrument Makers,	2	7	2	3
Artificial Limb Makers,	3	10	3	...
3. Musical Instruments—				
Musical Instrument Makers,	20	39	12	11
4. Apparatus for Sports and Games—				
Fishing-tackle Makers,	4	1	95	19
Golf-club Makers,	6	22	1	4
Billiard Table Makers,	6	28	29	3

NUMBER OF WORKSHOPS AND EMPLOYEES ON THE REGISTERS, AS AT 31st DECEMBER, 1907.—*Continued.*

Nature of Workshop.	Number of Workshops.	Total Number of Men.	Total Number of Women.	Total Young Persons 14 to 18 Years.
VII. Building and Works of Construction—				
1. Housebuilding, &c.—				
Joiners and Wrights, ...	188	651	...	84
Lathsplitters, ...	3	22	...	5
Painters and Decorators, ...	33	132	4	41
Plasterers and Modellers, ...	12	20	...	16
Plumbers and Gasfitters, ...	185	662	9	180
Slaters, ...	9	75	...	4
Stair Railers, ...	4	26	...	4
Tile Layers, ...	2	4	...	1
Concrete Step Maker, ...	1	5	...	2
Cistern Makers, ...	2	7	...	...
Glaziers, ...	25	105	2	20
Window Blind Makers, ...	4	7	5	1
VIII. Wood, Furniture, Fittings, and Decorations—				
1. Furniture, Fittings, and Decorations—				
Picture-frame Makers, ...	32	90	9	13
Polish Manufacturers, ...	3	5	1	3
Shop Fitters and Show-case Makers, ...	8	43	5	4
Stucco Ornament Makers, ...	2	5	1	3
Modellers, ...	4	23	...	2
Upholsterers, ...	50	150	121	49
Upholstery Trimming Makers, ...	5	9	56	19
Bamboo Furniture Makers, ...	2	7	...	...
Basket Makers, ...	7	19	...	3
Bedding Manufacturers, ...	15	48	45	10
Artists and Decorators, ...	3	6	...	3
Bellows Makers, ...	2	8	...	...
Fish-bass Makers, ...	2	...	11	...
Cabinetmakers and French Polishers, ...	184	756	255	94
Carvers and Gilders, ...	33	148	7	15
Coffin Mounting and Shroud Making, ...	15	45	6	6
Fancy-box Makers, ...	32	114	500	233
Hassock Maker, ...	1	2	1	3
Box-clip Makers, ...	2	3	4	3
Map Mounting, ...	1	4	1	1
Marquetry-cutting, ...	2	3	2	1
2. Wood and Bark—				
Coopers, ...	20	90	...	1
Cork Cutters, ...	10	47	19	20
Packing-case Makers, ...	8	52	...	10
Portmanteau Makers, ...	7	53	11	16
Straw-board Lining Maker, ...	1	5	6	8
Trunk Maker, ...	1	11	1	3

NUMBER OF WORKSHOPS AND EMPLOYEES ON THE REGISTERS, AS AT 31st DECEMBER, 1907.—*Continued.*

Nature of Workshop.	Number of Workshops.	Total Number of Men.	Total Number of Women.	Total Young Persons 14 to 18 Years.
IX. Brick, Cement, Pottery, and Glass—				
Glass and Emery Paper Makers, ...	3	8	2	8
Glass Stainers and Embossers, ...	15	100	5	22
Pavement-light Maker, ...	1	10	...	2
X. Chemicals, Oil, Grease, Soap, Resin, &c.—				
1. Colouring Matter—				
Blacking Manufacturer, ...	1	1	3	...
Ink Manufacturers, ...	2	5	6	6
2. Salt, Drugs, and other Chemicals and Compounds—				
Chemical Manufacturers, ...	3	7	1	...
Fire Extinguisher Manufacturer, ...	1	6	...	3
Manufacturing Chemists, ...	10	62	36	6
3. Oil, Grease, Soap, Resin, &c.—				
Oil, Paint, and Varnish Manufacturers, ...	8	19	6	4
Drysalters, ...	2	1	7	4
Soap and Soda Manufacturers, ...	4	7	...	...
India Rubber Stamp Makers, ...	5	9	...	1
Waterproof Manufacturers, ...	8	11	40	7
XI. Skins, Leather, Hair, and Feathers—				
1. Skins and Leather—				
Curriers and Tanners, ...	3	81	1	2
Furriers, ...	15	28	72	13
Hat-box Makers, ...	2	1	3	3
2. Saddlery and Harness—				
Leather Belt Makers, ...	5	29	1	...
Saddlers, ...	46	199	16	29
Whip Makers, ...	2	3	2	...
3. Hair and Feathers				
Brush Makers, ...	18	131	42	27
Feather Dressers, ...	3	...	7	1
XII. Paper, Prints, Books, and Stationery—				
1. Paper and Stationery—				
Beeswax Refiner and Paper Maker, ...	1	2	18	1
Card Cutters, ...	4	12	10	14
Envelope Maker, ...	1	4	29	16
Paper-bag Makers, ...	11	9	132	56
2. Prints and Books—				
Lithographers, ...	15	38	17	20
Pattern-book Makers, ...	10	31	77	54
Printers, Bookbinders, and Stationers, ...	65	406	580	287
Ticket Writers, ...	5	18	2	5

NUMBER OF WORKSHOPS AND EMPLOYEES ON THE REGISTERS, AS AT 31ST DECEMBER, 1907.—*Continued.*

Nature of Workshop.	Number of Workshops.	Total Number of Men.	Total Number of Women.	Total Young Persons 14 to 18 Years.
XIII. Textile Fabrics—				
1. Cotton and Flax—				
Warpers and Winders,	7	33	38	2
Weavers,	17	56	26	10
2. Wool and Worsted—				
Pattern Weaving and Darning,	8	60	28	11
Shawl and Scarf Manufacturers,	5	3	49	13
3. Hemp and other Fibrous Materials—				
Rope Makers,	2	8	...	...
Sack Makers and Repairers,	19	27	116	4
Sail Makers,	2	25	...	4
4. Mixed or Unspecified Materials—				
Embroiderers,	10	28	52	24
Flag Makers,	2	2	10	...
Fringers,	5	2	36	11
Lace and Muslin Manufacturers,	7	47	122	27
Tape-line Maker,	1	2	3	1
Thread Manufacturer,	1	6	79	...
Trimming and Curtain Frilling,	1	1	8	3
Machine and Hand Tambouring,	1	..	36	9
5. Bleaching, Printing, Dyeing, &c.—				
Calenderers,	12	99	116	34
Dyer and Cleaner,	1	3	..	1
Packers,	2	1	5	5
6. Dealers—				
Drapers,	23	35	43	21
XIV. Dress—				
Belt, Brace, and Necklet Makers,	3	2	27	15
Blouse Makers,	6	1	66	21
Boot, Shoe, and Slipper Makers,	493	1,235	87	70
Button and Stud Makers,	3	3	5	2
Children's Outfitters,	3	..	30	10
Clog Makers,	3	12	...	...
Dressmakers,	572	53	3,142	750
Hairdressers and Wig Makers,	16	40	7	22
Hat and Cap Manufacturers,	26	48	238	132
Handkerchief Hemmers,	8	13	288	88
Hosiery Manufacturers,	18	10	112	43
Last and Boot-tree Makers,	2	5	...	1
Mantle and Costume Makers,	56	96	978	191
Milliners,	184	4	603	211
Napery Hemming,	4	...	18	3
Pinafore Makers,	5	4	139	70
Shirt Makers,	20	90	969	73
Stay Makers,	12	4	87	22

NUMBER OF WORKSHOPS AND EMPLOYEES ON THE REGISTERS, AS AT 31st DECEMBER, 1907.—*Continued.*

Nature of Workshop.	Number of Workshops.	Total Number of Men.	Total Number of Women.	Total Young Persons 14 to 18 Years.
XIV. Dress—*Continued*—				
Tailors and Clothiers, ...	676	3,113	1,920	53
Tie Makers, ...	2	...	11	7
Umbrella Makers, ...	27	85	242	74
Underclothing Manufacturers, ...	69	14	636	142
XV. Food, Tobacco, Drink, and Lodging—				
1. Food—				
Aerated Water Manufacturers, ...	3	22	4	1
Coffee Essence Makers, ...	1	18	32	47
Confectioners and Preserve Makers, ...	26	42	83	126
Ham Curers, ...	9	51	1	1
Onion Bunchers, ...	2	11	...	...
Pickle and Sauce Makers, ...	5	8	23	7
Poulterers, ...	4	25	...	4
Preserved Meat Makers, ...	9	12	10	1
Sausage-skin and Spice Makers, ...	15	58	68	35
Tea Blenders and Packers, ...	14	27	25	16
Packing Grocery Goods, ...	2	1	5	5
2. Tobacco—				
Tobacco and Cigarette Makers, ...	12	46	126	84
3. Dealing with Spirituous Drinks—				
Bottling and Labelling, ...	32	100	134	41
Distiller, ...	1	10	...	...
4. Board, Lodging, &c.—				
Restaurants, ...	305	257	796	75
XVI. Gas, Water, and Electricity Supply—				
Meter Fitting and Repairing, ...	1	430	...	...
XVII. Other General and Undefined Workers and Dealers—				
1. About Animals—				
Birds'-cage Maker, ...	1	3	1	1
Birds' Seed Merchants, ...	3	6	2	3
2. Sundry Specified Industries—				
Mail-cart Makers, ...	2	12	4	2
Tobacco-pipe Makers, ...	9	53	19	5
Firelight Manufacturers, ...	6	58	9	3
Ivory Turners, ...	2	10	...	3
Japanners, ...	5	10	9	...
Rag and Waste Paper Merchants, ...	75	248	494	39
Taxidermists, ...	2	3	...	1
Tailors' Chalk Makers, ...	2	2	2	...
3. Makers and Dealers (general and undefined)—				
Manufacturers and Warehousemen, ...	8	97	328	46
Smaller Trades, ...	27	43	32	18
Totals, ...	4,977	13,882	15,874	5,333

BAKEHOUSES.

Underground Bakehouses.

At the close of the year 83 underground bakehouses were in occupation in Glasgow. 76 of these are certified as conforming to the requirements for underground bakehouses, and in 7 the conditions have not been finally adjusted. The number formerly occupied and now definitely closed for baking purposes is 56.

During the year 203 inspections were made to the bakehouses on the register, and on these occasions the fans were invariably found in use, the result, no doubt, of the action taken last year in checking the use of the fans by the condition of the air.

Table XLVII. contains a statement of the number of each class in the several Wards, and the number of visits paid thereto during the year.

TABLE XLVII.

Glasgow, 1907.—UNDERGROUND Bakehouses, Certified and otherwise, with Number of Visits.

Wards.	Closed previous to 1907.	No. on Register at 31st Dec., 1907.	Total Certified.	Inspections.
1. Dalmarnock, ...	...	1	1	2
2. Calton, ...	1	3	3	6
3. Mile-end, ...	...	...	...	...
4. Whitevale, ...	1	1	1	3
5. Dennistoun, ...	1	3	3	6
6. Springburn, ...	1	1	1	2
7. Cowlairs, ...	1	1	1	3
8. Townhead, ...	3	4	4	8
9. Blackfriars, ...	7	3	3	8
10. Exchange, ...	3	10	8	24
11. Blythswood, ...	2	5	5	10
12. Broomielaw, ...	3	5	4	11
13. Anderston, ...	2	1	1	2
14. Sandyford, ...	3	10	9	28
15. Park, ...	...	4	4	6
16. Cowcaddens, ...	8	8	7	22
17. Woodside, ...	3	2	2	5
18. Hutchesontown, ...	1	3	3	8
19. Gorbals, ...	10	4	4	8
20. Kingston, ...	1	2	2	4
21. Govanhill, ...	3	3	3	8
22. Langside, ...	...	1	...	3
23. Pollokshields, ...	...	5	5	19
24. Kelvinside, ...	1	1	1	3
25. Maryhill, ...	1	1	1	2
26. Kinning Park, ...	...	1	...	2
	56	83	76	203

The degree of air impurity ascertained to be present in bakehouses on the ground level at the inquiry of 1906 led to a continuance of the inquiries during the present year, and in the following statement the condition of the air in 46 such bakehouses is indicated by the amount of carbonic acid gas present.

Amount of CO^2 present. Parts per 10,000.	Number of Bakehouses
From 4—5	3
„ 5—6	3
„ 6—7	12
„ 7—8	6
„ 8—9	7
„ 9—10	3
„ 10—11	3
„ 11—12	8
14 +	1

Summarised, this Table shows that in 6 bakehouses the impurity thus estimated was below 6 parts per 10,000, that in 12 it was between 6 and 7, and in 34 altogether did not exceed 10. Contrasted with this there were 12 bakehouses where the CO^2 present ranged from 10 to fully 14 parts per 10,000. Where these latter results were obtained steps were taken to improve the ventilation, but none of these alterations had been completed at the close of the year.

Generally it also may be stated that owing to the operation of the underground bakehouse clauses of the Factory and Workshops Act of 1900, the condition of the air in underground premises is now considerably purer than that of many bakehouses above ground.

Table XLVIII. shows the number of overground bakehouses on the Register at the end of 1906, with the changes which took place during the year.

TABLE XLVIII.

GLASGOW, 1907.—OVERGROUND BAKEHOUSES.

WARDS.	On Register, 1906.	Added.	Closed.	On Register, 1907.	Inspections.	Air Samples.	Bakehouses from which Air Samples were taken.
I. Dalmarnock, ...	23	...	...	23	...	...	...
II. Calton, ...	20	...	...	20	1	...	...
III. Mile-end, ...	29	...	...	29	6	...	...
IV. Whitevale, ...	29	...	...	29	...	...	...
V. Dennistoun, ...	13	1	...	14	7	...	...
VI. Springburn, ...	5	...	...	5	3	...	...
VII. Cowlairs, ...	1	1	...	2	1	...	...
VIII. Townhead, ...	10	...	...	10	7	...	...
IX. Blackfriars, ...	10	1	4	7	10	2	2
X. Exchange, ...	1	...	...	1	...	...	...
XI. Blythswood, ...	1	...	...	1	...	...	...
XII. Broomielaw, ...	...	...	...	...	...	...	...
XIII. Anderston, ...	2	1	...	3	...	...	...
XIV. Sandyford, ...	9	...	1	8	4	...	...
XV. Park, ...	4	...	...	4	1	...	...
XVI. Cowcaddens, ...	17	...	1	16	5	...	...
XVII. Woodside, ...	7	...	2	5	2	...	...
XVIII. Hutchesontown,	8	...	1	7	10	8	8
XIX. Gorbals, ...	12	1	...	13	16	12	12
XX. Kingston, ...	11	...	2	9	18	11	11
XXI. Govanhill, ...	5	2	...	7	7	6	6
XXII. Langside, ...	9	3	1	11	27	5	5
XXIII. Pollokshields, ...	1	...	...	1	3	1	1
XXIV. Kelvinside, ...	...	...	...	...	...	...	...
XXV. Maryhill, ...	6	...	...	6	...	...	...
XXVI. Kinning Park,...	6	...	...	6	1	1	1
Totals, ...	239	10	12	237	129	46	46

REGISTRATION OF HAIRDRESSERS.

In report for 1906 full details were given of the action taken in connection with the registration of hairdressers' saloons, and the following Table continues the record for 1907:—

TABLE XLIX.

GLASGOW, 1907.—REGISTRATION OF HAIRDRESSERS' SALOONS.

WARDS.	On Register, 31st Dec., 1906, Certified.	Applied for Registration during 1907.	Number Certified during 1907.	Withdrawn from Register.		On Register, 31st Dec., 1907, Certified.	Inspections.
				(a) Premises Closed.	(b) Non-compliance with Regulations.		
I. Dalmarnock, ...	...	1	1	...	...	1	4
II. Calton, ...	3	3	3	...	...	6	15
III. Mile-end, ...	7	3	3	...	...	10	32
IV. Whitevale, ...	4	1	2	1	...	6	18
V. Dennistoun, ...	3	2	2	...	...	5	20
VI. Springburn, ...	3	...	...	...	...	3	9
VII. Cowlairs, ...	2	1	1	...	...	3	15
VIII. Townhead, ...	9	1	4	1	...	13	47
IX. Blackfriars, ...	5	...	...	...	1	5	14
X. Exchange, ...	9	...	...	...	...	9	15
XI. Blythswood, ...	1	1	1	...	...	2	7
XII. Broomielaw, ...	4	1	1	...	...	5	8
XIII. Anderston, ...	...	3	3	...	...	3	14
XIV. Sandyford, ...	1	3	3	...	...	4	15
XV. Park, ...	2	...	...	...	...	2	11
XVI. Cowcaddens, ...	6	6	6	1	...	12	47
XVII. Woodside, ...	4	3	3	...	...	7	23
XVIII. Hutchesontown, ...	5	1	1	...	...	6	22
XIX. Gorbals, ...	2	2	2	...	...	4	20
XX. Kingston, ...	...	...	...	...	...	...	...
XXI. Govanhill, ...	2	...	...	...	...	2	6
XXII. Langside, ...	2	...	...	...	...	2	7
XXIII. Pollokshields, ...	...	...	...	...	...	...	...
XXIV. Kelvinside, ...	2	...	...	...	...	2	4
XXV. Maryhill, ...	4	2	2	...	1	6	20
XXVI. Kinning Park, ...	...	1	1	...	...	1	3
Totals, ...	80	35	39	3	2	119	396

A. K. CHALMERS.

Sanitary Chambers,
Glasgow, October, 1908.

APPENDIX.

TABLE I.—GLASGOW.—POPULATION; BIRTHS and DEATHS; BIRTH-RATES and DEATH-RATES per 1,000; also DEATHS under 1 YEAR and DEATH-RATES per 1,000 BIRTHS, from 1855 to 1907.

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Year.	
						Number.	Rate per 1,000 Births.
1855	356,355	13,242	10,655	37·2	29·9	2,600	196
1856	362,606	15,170	10,298	41·8	28·4	2,713	179
1857	369,318	15,706	11,375	42·5	30·8	2,851	182
1858	376,131	15,889	11,472	42·2	30·5	2,846	179
1859	382,756	15,947	10,832	41·6	28·3	2,448	154
1860	389,843	15,943	12,436	40·8	31·9	2,905	182
1861	397,673	16,537	10,936	41·6	27·5	2,544	154
1862	405,789	16,400	11,565	40·4	28·5	2,562	156
1863	413,944	16,986	13,329	41·0	32·2	2,774	163
1864	420,738	17,411	13,674	41·4	32·5	3,051	175
1865	428,123	17,956	13,914	41·9	32·5	3,097	173
1866	437,850	18,288	12,829	41·8	29·3	2,905	159
1867	446,028	18,347	12,578	41·1	28·2	2,895	158
1868	455,000	18,607	13,832	40·9	30·4	3,127	168
1869	464,332	18,495	15,648	39·8	33·7	3,411	184
1870	471,453	19,355	13,955	41·1	29·6	2,991	155
1871	491,900	18,867	15,790	38·4	32·1	3,608	191
1872	494,824	20,158	14,053	40·7	28·4	3,198	159
1873	494,847	19,487	14,499	39·4	29·3	3,255	167
1874	498,270	20,039	15,845	40·2	31·8	3,240	162
1875	499,480	20,825	15,384	41·7	30·8	3,388	163
1876	502,299	20,981	13,763	41·7	27·4	3,166	151
1877	504,487	21,124	13,823	41·9	27·4	3,106	147
1878	507,420	20,622	14,157	40·6	27·9	3,285	159
1879	508,048	19,751	12,498	38·8	24·6	2,504	127
1880	509,732	18,912	13,304	37·1	26·1	2,842	150
1881	512,034	19,106	12,916	37·3	25·2	2,745	144
1882	517,904	19,735	13,046	38·1	25·2	2,959	150
1883	523,154	19,911	14,577	38·1	27·9	3,091	155
1884	528,459	20,557	13,942	38·9	26·4	3,094	151
1885	533,817	19,861	13,492	37·2	25·3	3,100	156
1886	539,231	19,862	13,104	36·8	24·3	2,786	140
1887	544,700	19,328	12,135	35·5	22·3	2,676	138
1888	550,226	19,309	11,681	35·1	21·2	2,560	133
1889	555,808	19,503	13,139	35·1	23·6	3,008	154
1890	561,447	19,279	13,374	34·3	23·8	2,880	149
1891	567,143	19,857	14,324	35·0	25·3	2,946	148
1892	669,059*	22,815	15,218	34·1	22·7	3,168	139
1893	677,883	23,173	15,798	34·2	23·3	3,649	157
1894	686,820	22,644	13,673	34·0	19·9	2,937	130
1895	695,876	22,803	16,344	32·8	23·5	3,538	155
1896	705,052	24,029	14,385	34·1	20·4	3,278	136
1897	714,919	23,880	15,727	33·4	22·0	3,826	160
1898	724,349	24,262	15,333	33·5	21·2	3,792	156
1899	733,903	24,249	15,828	33·0	21·6	3,696	152
1900	743,969	24,362	16,393	32·7	22·0	3,778	153
1901	764,467	24,206	16,197	31·7	21·2	3,607	149
1902	775,601	24,722	15,532	31·9	20·0	3,206	129
1903	786,897	25,135	15,073	31·9	19·0	3,663	146
1904	798,357	24,754	15,414	31·0	19·3	3,606	146
1905	809,986	24,316	14,460	30·0	17·9	3,195	131
1906	835,625*	24,560	14,889	29·4	17·8	3,223	131
1907	847,584	24,006	15,659	28·3	18·5	3,116	130

* Extended City.

The figures in this Table are taken from the Registrar-General's Reports.

TABLE II.—GLASGOW, 1907.—ESTIMATED POPULATION; BIRTHS; ILLEGITIMATE BIRTHS; and DEATHS at all AGES and at certain PERIODS of LIFE, and their PROPORTION to the POPULATION in each MUNICIPAL WARD.

MUNICIPAL WARDS.	ESTIMATED POPULATION.			BIRTHS.		ILLEGITIMATE BIRTHS.		DEATHS, ALL AGES.		DEATHS AT CERTAIN PERIODS OF LIFE.						
	Without Institutions and Shipping.	Institutions and Shipping.	Total.	Number.	Rate per 1,000 Living.	Number.	Percentage of Total Births.	Number.	Rate per 1,000 Living.	Under 1 Year.	1—5 Years.	5—15 Years.	15—20 Years.	20—25 Years.	25—60 Years.	60 Years and above.
1. Dalmarnock, ...	49,577	722	50,299	1,973	39·8	96	4·9	1,141	23·0	317	287	67	18	20	285	147
2. Calton, ...	35,570	2,067	37,637	1,124	31·6	108	9·6	887	24·9	194	181	41	26	23	248	174
3. Mile-end, ...	46,154	505	46,659	1,841	39·9	100	5·4	1,032	22·4	280	230	76	30	21	238	157
4. Whitevale, ...	32,421	970	33,391	1,090	33·6	90	8·3	649	20·0	163	149	37	11	16	156	117
5. Dennistoun, ...	36,915	1,838	38,753	987	26·7	34	3·4	477	12·9	92	67	20	10	12	155	121
6. Springburn, ...	45,079	4,319	49,398	1,775	39·4	71	4·0	842	18·7	223	201	45	24	28	197	124
7. Cowlairs, ...	30,570	...	30,570	1,003	32·8	32	3·2	456	14·9	107	98	46	10	19	114	62
8. Townhead, ...	37,701	38	37,739	1,177	31·2	82	7·0	730	19·4	149	150	45	24	21	212	129
9. Blackfriars, ...	21,576	981	22,557	638	29·6	57	8·9	504	23·4	105	97	29	15	10	158	90
10. Exchange, ...	2,035	456	2,491	31	15·2	5	16·1	36	17·7	6	5	2	4	...	10	9
11. Blythswood, ...	3,263	373	3,636	38	11·6	10	26·3	44	13·5	6	2	...	...	3	18	15
12. Broomielaw, ...	7,482	1,643	9,125	234	31·3	25	10·7	198	26·5	47	25	12	1	9	68	36
13. Anderston, ...	28,990	1,494	30,484	940	32·4	51	5·4	539	18·6	114	118	39	8	9	163	88
14. Sandyford, ...	25,008	316	25,324	568	22·7	56	9·9	471	18·8	102	85	26	9	10	119	120
15. Park, ...	24,623	942	25,565	264	10·7	31	11·7	264	10·7	18	15	7	9	12	78	125
16. Cowcaddens, ...	35,435	1,220	36,655	1,101	31·1	140	12·7	755	21·3	159	131	44	24	16	240	141
17. Woodside, ...	43,433	189	43,622	1,269	29·2	78	6·1	663	15·3	140	93	32	13	24	204	157
18. Hutchesontown, ...	39,449	9	39,458	1,467	37·2	87	5·9	746	18·9	165	160	44	21	20	232	104
19. Gorbals, ...	35,221	844	36,065	923	26·2	69	7·5	621	17·6	139	104	30	17	20	178	133
20. Kingston, ...	33,919	666	34,585	984	29·0	74	7·5	644	19·0	149	114	38	19	20	190	114
21. Govanhill, ...	34,675	...	34,675	1,223	35·3	49	4·0	522	15·1	114	84	22	15	12	144	131
22. Langside, ...	40,953	560	41,513	831	20·3	27	3·2	392	9·6	57	33	15	7	8	141	131
23. Pollokshields, ...	18,529	...	18,529	152	8·2	4	2·6	182	9·8	8	5	...	4	4	66	95
24. Kelvinside, ...	22,444	726	23,170	275	12·3	11	4·0	162	7·2	11	2	10	1	2	49	87
25. Maryhill, ...	39,992	1,542	41,534	1,509	37·7	72	4·8	534	13·4	108	95	54	16	17	151	93
26. Kinning Park, ...	13,367	...	13,367	448	33·5	20	4·5	241	18·0	58	55	11	5	6	67	39
— Institutions and Harbour, ...	...	...	...	61	...	39	...	1,075	...	44	36	18	21	23	475	458
CITY, ...	784,381	22,420	806,801	23,926	29·7	1,518	6·3	14,807	18·4	3,075	2,622	810	362	385	4,356	3,197

TABLE III.—GLASGOW.—DEATHS at all AGES from DIFFERENT DISEASES in each MUNICIPAL WARD during 1907.

MUNICIPAL WARDS.	All Causes.	Smallpox.	Diphtheria and M. Croup.	Scarlet Fever.	Fevers.			Cerebro-Spinal Fever.	Measles.	Whooping-cough.	Diarrhœa.	Septic Diseases.	Tuberculous Diseases.		Cancer, Malignant Diseases.	Diseases of Nervous System.	Diseases of Circulatory System.	Croup.	Influenza.	Pneumonia.	Diseases of Respiratory System.	Violence.	Premature Birth.	Uncertified.	All Other Causes.
					Typhus.	Enteric.	Undefined						Phthisis.	Other than Phthisis.											
1. Dalmarnock, ...	1,141	...	11	5	...	11	...	53	34	125	59	15	69	67	32	68	89	7	2	125	96	21	71	2	179
2. Calton, ...	887	...	9	2	...	6	...	58	33	54	37	2	77	46	34	83	66	2	5	87	87	26	17	5	151
3. Mile-end, ...	1,032	...	10	1	...	4	...	58	53	54	55	12	79	73	33	71	76	1	4	106	98	31	39	2	172
4. Whitevale, ...	649	...	6	2	...	3	...	45	40	27	25	5	44	40	20	54	47	1	2	62	64	18	24	2	118
5. Dennistoun, ...	477	...	3	3	...	3	...	22	12	23	10	3	33	32	34	41	55	1	3	37	27	6	16	...	113
6. Springburn, ...	842	...	13	4	...	2	...	60	34	54	29	4	60	50	25	59	74	2	8	102	70	16	27	...	149
7. Cowlairs, ...	456	...	4	4	...	8	...	18	13	37	13	7	43	44	13	33	29	3	4	45	38	12	8	...	80
8. Townhead, ...	730	...	3	...	...	2	...	37	16	55	20	7	48	45	28	62	54	2	4	69	64	29	34	4	147
9. Blackfriars, ...	504	...	1	1	...	9	...	28	21	25	18	2	48	31	17	34	34	2	...	62	44	14	16	6	91
10. Exchange, ...	36	...	...	...	...	1	...	3	...	...	...	...	5	2	2	2	3	...	1	4	3	1	1	2	6
11. Blythswood, ...	44	...	...	...	...	...	...	1	...	...	...	...	...	3	2	9	6	...	1	3	2	2	3	...	12
12. Broomielaw, ...	198	...	3	2	...	...	...	13	8	12	3	1	17	10	8	11	17	...	...	26	22	5	5	6	29
13. Anderston, ...	539	...	8	2	..	3	...	38	20	46	17	8	35	33	26	32	46	2	1	57	45	19	9	...	92
14. Sandyford, ...	471	...	1	...	...	2	...	19	13	34	11	3	38	31	25	44	41	1	4	37	53	21	17	...	76
15. Park, ...	264	...	1	1	...	2	...	6	...	6	3	...	15	9	13	39	28	...	9	18	26	11	2	...	75
16. Cowcaddens, ...	755	...	3	3	...	5	...	29	5	51	28	6	72	36	29	72	62	...	3	74	80	21	15	...	161
17. Woodside, ...	663	...	3	4	...	4	...	28	12	24	11	7	62	24	30	75	56	2	2	78	59	14	34	...	134
18. Hutchesontown,	746	...	12	3	...	4	...	33	12	65	12	8	58	38	24	59	61	2	4	108	63	30	17	7	126
19. Gorbals, ...	621	...	11	4	...	3	...	18	12	42	13	3	54	28	27	55	56	7	4	98	47	19	19	...	101
20. Kingston, ...	644	...	9	1	...	4	...	36	27	37	20	8	59	39	28	49	71	1	...	46	53	20	21	...	115
21. Govanhill, ...	522	...	6	...	...	1	...	18	8	40	10	7	31	30	26	45	27	7	...	57	35	15	14	1	144
22. Langside, ...	392	...	4	2	...	1	...	5	...	19	6	2	18	25	29	36	49	1	6	29	27	9	10	...	114
23. Pollokshields, ...	182	...	...	...	...	1	...	1	...	3	2	1	12	3	25	17	27	...	3	13	22	1	2	...	49
24. Kelvinside, ...	162	...	1	...	...	1	...	2	2	...	2	...	6	5	11	28	17	...	5	8	10	4	...	...	60
25. Maryhill, ...	534	...	1	1	1	3	...	33	11	17	18	7	55	40	24	36	36	2	4	81	32	12	22	1	97
26. Kinning Park,	241	...	3	...	...	2	...	13	13	18	7	1	16	14	6	22	22	3	...	28	15	11	4	1	42
— Institutions & Harbour,	1,075	...	1	...	1	7	...	8	1	4	12	6	206	34	34	114	165	...	2	100	121	44	5	8	202
CITY, ...	14,807	...	127	45	2	92	...	683	400	872	441	125	1,260	832	605	1,250	1,314	49	81	1,560	1,303	432	452	47	2,835

TABLE IV.—GLASGOW.—DEATH-RATES per MILLION from DIFFERENT DISEASES in each MUNICIPAL WARD during 1907.

MUNICIPAL WARDS.	All Causes.	Smallpox.	Diphtheria and Membranous Croup.	Fevers.					Measles.	Whooping-cough.	Diarrhœa.	Septic Diseases.	Tubercular Diseases.		Cancer, Malignant Diseases.	Diseases of Nervous System.	Diseases of Circulatory System.	Croup.	Pneumonia.	Diseases of Respiratory System.	Violence.	Premature Birth.	Uncertified.	Influenza.	All Other Causes.
				Scarlet.	Typhus.	Enteric.	Undefined	Cerebro-Spinal.					Phthisis.	Other than Phthisis.											
1. Dalmarnock, ...	23,014	...	222	101	...	222	...	1,069	686	2,521	1,190	303	1,392	1,351	645	1,372	1,392	141	2,521	1,936	424	1,432	40	40	3,610
2. Calton, ...	24,936	...	253	56	...	169	...	1,631	928	1,518	1,040	56	2,165	1,293	956	2,333	1,855	56	2,446	2,446	731	478	141	141	4,245
3. Mile-end, ...	22,359	...	217	22	...	87	...	1,257	1,148	1,170	1,192	260	1,712	1,582	715	1,538	1,647	22	2,297	2,123	672	845	43	87	3,488
4. Whitevale, ...	20,018	...	185	62	...	93	...	1,388	1,234	833	771	154	1,357	1,234	617	1,666	1,450	31	1,912	1,974	555	740	62	62	3,640
5. Dennistoun, ...	12,921	...	81	81	...	81	...	596	325	623	271	81	894	867	921	1,111	1,490	28	1,002	731	163	433	...	81	3,061
6. Springburn, ...	18,678	...	288	89	...	44	...	1,331	754	1,198	643	89	1,331	1,109	555	1,309	1,642	44	2,263	1,553	355	599	...	177	3,305
7. Cowlairs, ...	14,916	...	131	131	...	262	...	589	425	1,210	425	229	1,407	1,439	425	1,079	949	98	1,472	1,243	393	262	...	131	2,617
8. Townhead, ...	19,363	...	80	...	...	53	...	981	424	1,459	530	186	1,273	1,194	743	1,644	1,432	53	1,830	1,698	769	902	106	106	3,899
9. Blackfriars, ...	23,359	...	46	46	...	417	...	1,298	973	1,159	834	93	2,225	1,548	788	1,576	1,576	93	2,874	2,039	649	742	278	...	4,218
10. Exchange, ...	17,690	...	...	...	...	491	...	1,474	...	...	...	...	2,457	983	983	983	1,474	...	1,966	1,474	491	491	983	491	2,948
11. Blythswood, ...	13,485	...	...	...	...	...	...	306	...	...	...	...	...	919	613	2,758	1,839	...	919	613	613	919	...	306	3,678
12. Broomielaw, ...	26,463	...	401	267	...	...	...	1,738	1,069	1,604	401	134	2,272	1,337	1,069	1,470	2,272	...	3,475	2,940	668	668	802	...	3,876
13. Anderston, ...	18,593	...	276	69	...	103	...	1,311	690	1,587	586	276	1,207	1,138	897	1,104	1,587	69	1,966	1,552	655	310	...	34	3,174
14. Sandyford, ...	18,834	...	40	...	...	80	...	760	520	1,360	440	120	1,520	1,240	1,000	1,759	1,639	40	1,480	2,119	840	680	...	160	3,039
15. Park, ...	10,722	...	41	41	...	81	...	244	...	244	122	...	609	366	528	1,584	1,137	...	731	1,056	447	81	...	366	3,046
16. Cowcaddens, ...	21,307	...	85	85	...	141	...	818	141	1,439	790	169	2,032	1,016	818	2,032	1,750	...	2,088	2,258	593	423	...	85	4,544
17. Woodside, ...	15,265	...	69	92	...	92	...	645	276	553	253	161	1,427	553	691	1,727	1,289	46	1,796	1,358	322	783	...	46	3,085
18. Hutchesontown,...	18,910	...	304	76	...	101	...	837	304	1,648	304	203	1,470	963	608	1,496	1,546	51	2,738	1,597	760	431	177	101	3,194
19. Gorbals, ...	17,631	...	312	114	...	85	...	511	341	1,192	369	85	1,533	795	767	1,562	1,590	199	2,782	1,334	539	539	...	114	2,868
20. Kingston, ...	18,986	...	265	29	...	118	...	1,061	796	1,091	590	236	1,739	1,150	825	1,445	2,093	29	1,356	1,563	590	619	...	...	3,390
21. Govanhill, ...	15,054	...	173	...	...	29	...	519	231	1,154	288	202	894	865	750	1,298	779	202	1,644	1,009	433	404	29	...	4,153
22. Langside, ...	9,572	...	98	49	...	24	...	122	...	464	147	49	440	610	708	879	1,196	24	708	659	220	244	...	147	2,784
23. Pollokshields, ...	9,822	...	...	...	...	54	...	54	...	162	108	54	648	162	1,349	917	1,457	...	702	1,187	54	108	...	162	2,644
24. Kelvinside, ...	7,218	...	45	...	...	45	...	89	89	...	89	...	267	223	490	1,248	757	...	356	446	178	...	...	223	2,673
25. Maryhill, ...	13,352	...	25	25	25	75	...	825	275	425	450	175	1,375	1,000	600	900	900	50	2,025	800	300	550	25	100	2,425
26. Kinning Park,	18,029	...	224	...	...	150	...	973	973	1,347	524	75	1,197	1,047	449	1,746	1,746	224	2,095	1,122	823	299	75	...	3,142
— Institutions and Harbour,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
CITY, ...	18,353	...	157	56	2	114	...	847	496	1,081	547	155	1,562	1,031	750	1,549	1,629	61	1,934	1,615	535	560	58	100	3,514

TABLE V.—GLASGOW.—CASES of INFECTIOUS DISEASE in each MUNICIPAL WARD, showing those TREATED in HOSPITAL, for the YEAR 1907.

MUNICIPAL WARDS.	INFECTIOUS DISEASE (NOTIFICATION) ACT, 1889.																		OTHER INFECTIOUS DISEASES.														ALL CAUSES.		TOTAL VISITATIONS.		TOTAL CASES.
	FEVERS.								Smallpox.		Scarlet Fever.		Diphtheria and Membranous Croup.		Cerebro-Spinal Fever.		Erysipelas.		Anthrax.		Beri-Beri.		Java Fever.		Measles.		Whooping-cough.		Chickenpox.		Phthisis.							
	Typhus.		Enteric.		Continued and Undefined.		Puerperal.																												For Infectious Diseases	Cases found.	
	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.	Hosp	Home.	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.	Hosp.	Home.				
1. Dalmarnock,	...	...	29	2	1	...	14	3	...	...	82	6	51	4	46	30	27	44	...	...	...	...	...	...	124	567	135	149	3	6	14	63	526	874	7,407	38	1,400
2. Calton, ...	...	...	21	...	1	...	3	1	...	...	56	4	47	3	48	29	31	51	...	...	...	...	...	...	155	539	98	56	10	2	11	66	481	751	6,900	101	1,232
3. Mile-end, ...	...	...	26	1	6	1	13	2	...	...	52	...	54	5	48	32	21	57	...	...	...	...	...	...	217	982	104	120	7	42	26	80	574	1,322	5,864	160	1,896
4. Whitevale, ...	...	...	22	1	3	...	3	2	...	...	59	7	54	7	36	22	22	36	...	...	...	...	...	...	163	693	50	64	4	9	9	48	425	889	4,309	149	1,314
5. Dennistoun, ...	...	...	13	2	1	...	3	...	...	...	83	19	49	18	12	22	4	29	...	...	...	...	...	...	38	563	11	55	6	33	12	39	232	780	9,899	141	1,012
6. Springburn, ...	...	...	26	...	1	...	6	...	...	...	122	4	107	7	39	34	18	32	...	...	...	...	...	...	86	491	87	129	5	10	6	58	503	765	8,242	48	1,268
7. Cowlairs, ...	...	...	19	3	...	...	5	...	...	...	107	3	41	3	20	4	18	42	...	...	...	...	...	...	27	417	54	240	...	22	7	50	298	784	7,218	33	1,082
8. Townhead, ...	...	...	11	2	1	...	6	1	...	...	105	2	29	1	48	10	12	29	...	...	...	...	...	...	99	537	74	77	19	41	19	50	423	750	6,483	61	1,173
9. Blackfriars, ...	...	...	31	1	3	...	1	...	...	...	48	1	33	3	32	16	23	21	...	...	...	...	...	...	92	206	57	40	9	22	13	40	342	350	5,914	8	692
10. Exchange, ...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	2	1	1	1	...	...	...	...	...	...	...	15	5	1	...	1	...	4	10	23	308	1	33
11. Blythswood, ...	...	...	1	...	...	...	...	...	...	...	1	1	...	1	3	...	...	1	...	...	...	...	...	...	2	3	...	...	3	...	...	2	10	8	180	...	18
12. Broomielaw, ...	...	...	7	...	...	...	1	1	...	...	17	1	10	1	13	2	8	7	...	...	...	...	...	...	27	94	12	19	...	1	5	11	100	137	2,967	13	237
13. Anderston, ...	...	...	29	1	...	...	2	2	...	...	65	2	72	13	39	16	14	35	...	...	...	...	...	...	69	333	28	95	7	28	6	30	331	555	7,156	38	886
14. Sandyford, ...	...	...	12	2	...	...	1	...	...	...	39	4	43	7	24	12	8	24	...	...	...	...	...	...	59	208	33	123	2	26	4	34	225	440	5,048	75	665
15. Park, ...	...	...	4	...	1	1	1	...	...	...	21	7	14	13	3	4	2	11	...	...	...	...	...	...	12	26	...	7	...	...	2	14	60	83	1,109	3	143
16. Cowcaddens,	...	...	16	2	1	...	4	...	...	...	42	5	26	1	33	12	24	31	...	...	...	...	...	...	57	108	71	116	7	9	16	81	297	365	11,481	16	662
17. Woodside, ...	...	...	24	2	...	...	6	2	...	...	89	11	28	7	21	16	15	34	...	...	...	...	...	...	80	418	33	133	6	25	8	60	310	708	6,507	24	1,018
18. Hutchesontown,	...	...	23	...	2	...	8	2	...	...	90	3	71	1	38	13	23	57	...	...	...	...	...	...	89	302	73	108	4	33	3	73	424	592	8,656	30	1,016
19. Gorbals, ...	...	...	16	...	2	...	...	3	...	...	80	3	45	4	23	7	14	58	...	...	...	...	...	...	41	186	58	100	3	11	4	66	286	438	8,000	34	724
20. Kingston, ...	...	...	24	2	2	...	4	2	1	...	53	5	50	4	34	14	12	37	...	...	...	...	...	...	136	523	43	107	7	15	1	63	367	772	9,305	288	1,139
21. Govanhill, ...	...	...	9	3	1	...	5	1	...	...	95	5	42	2	17	7	7	32	...	...	...	...	...	...	24	274	34	124	4	4	3	38	241	490	5,116	39	731
22. Langside, ...	...	...	2	4	...	...	...	...	...	...	72	40	28	34	6	2	4	31	...	...	...	...	...	...	15	160	18	88	1	1	2	23	148	383	4,896	...	531
23. Pollokshields,	1	...	1	1	...	...	...	...	...	...	19	27	9	8	1	3	1	11	...	...	...	...	...	...	8	10	11	4	...	3	3	9	54	76	2,133	6	130
24. Kelvinside, ...	...	...	4	5	...	...	...	...	...	...	12	18	13	12	3	...	3	8	...	...	...	...	...	...	10	50	...	8	...	5	1	10	46	116	1,464	32	162
25. Maryhill, ...	2	...	12	1	1	...	4	3	...	...	77	15	40	14	25	24	7	30	...	...	...	...	...	...	15	154	26	212	9	102	6	58	224	613	8,483	92	837
26. Kinning Park,	...	...	9	...	...	...	1	...	...	...	22	...	27	2	15	7	5	20	...	...	...	...	...	...	95	262	6	37	2	9	1	17	183	354	7,893	166	537
— Institutions,	1	...	24	...	...	...	6	...	...	...	54	...	58	...	29	1	102	7	...	...	...	...	...	...	132	...	76	...	83	...	33	4	598	12	541	...	610
— Harbour, ...	1	...	18	1	...	...	...	...	...	...	3	...	2	...	...	...	3	1	...	...	4	...	1	...	5	...	...	...	6	...	...	...	43	2	1,834	...	45
CITY, ...	5	...	434	36	27	2	97	25	1	...	1566	193	1043	175	658	340	429	777	...	...	4	...	1	...	1,877	8,121	1197	2,212	207	460	215	1,091	7,761	13,432	155,313	1,596	21,193

TABLE VI.—GLASGOW.—CASES of INFECTIOUS DISEASE REGISTERED, showing the NUMBER TREATED in HOSPITAL for each MONTH of the YEAR 1907.

MONTHS.	INFECTIOUS DISEASE (NOTIFICATION) ACT, 1889.																						OTHER INFECTIOUS DISEASES.										TOTAL.	
	FEVERS.										SMALLPOX.		SCARLET FEVER.		CEREBRO-SPINAL FEVER.		DIPHTHERIA.		MEMBRANOUS CROUP.		ERYSIPELAS.		BERI-BERI.		JAVA FEVER.		MEASLES.		WHOOPING-COUGH.		CHICKENPOX.		PHTHISIS.			
	TYPHUS.		ENTERIC.		CONTINUED.		PUERPERAL.		UNDEFINED.																											
	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSP.	HOME.	HOSPITAL.	HOME.
Jan.,	...	...	50	5	2	...	7	2	...	...	...	...	104	23	65	43	109	27	8	1	43	89	...	...	...	...	33	194	117	189	17	28	19	97	574	698
Feb.,	...	...	42	3	...	...	9	3	2	...	1	...	117	23	113	61	90	16	5	...	45	91	1	...	...	...	24	236	98	266	16	26	38	106	601	831
March,	...	...	36	2	1	...	9	...	2	...	...	...	69	18	107	74	64	13	2	2	30	53	...	...	...	...	49	260	178	298	23	45	13	106	583	871
April,	...	...	28	1	...	...	10	2	...	...	...	...	103	8	116	54	75	10	3	...	38	48	...	...	...	...	54	272	195	337	20	42	18	136	660	910
May,	1	...	46	3	2	1	7	3	...	...	...	...	120	19	85	32	69	11	4	...	39	79	1	...	...	...	84	293	194	339	26	34	19	125	697	939
June,	...	...	36	1	...	...	11	5	3	1	...	...	86	10	37	15	48	10	4	...	25	60	1	...	...	...	108	362	93	226	17	19	19	96	488	805
July,	2	...	23	3	2	...	7	2	...	...	...	...	84	6	27	11	36	6	2	...	46	51	...	...	...	...	104	363	99	95	19	14	14	90	465	641
Aug.,	...	...	46	3	...	...	7	2	1	...	...	...	106	7	24	12	73	8	3	...	28	60	1	...	...	...	38	189	65	108	12	16	19	56	423	461
Sept.,	...	...	23	4	2	...	7	3	3	...	...	...	144	7	32	18	83	15	6	...	25	56	...	...	...	...	65	231	40	99	22	51	23	60	475	544
Oct.,	2	...	40	3	2	...	9	1	2	...	...	...	216	25	19	13	128	14	5	3	38	61	...	...	...	...	252	737	31	97	7	43	9	80	760	1,077
Nov.,	...	...	39	3	1	...	7	1	2	...	...	...	248	22	18	6	123	24	4	...	37	76	...	...	1	...	410	1,881	45	82	14	83	7	63	956	2,241
Dec.,	...	...	25	5	...	...	7	1	...	...	...	...	169	25	15	1	91	15	8	...	35	53	...	...	...	...	656	3,103	42	76	14	59	17	76	1,079	3,414
TOTAL,	5	...	434	36	12	1	97	25	15	1	1	...	1,566	193	658	340	989	169	54	6	429	777	4	...	1	...	1877	8,121	1197	2,212	207	460	215	1091	7,761	13,432

TABLE VII.—GLASGOW, 1907.—DEATHS CERTIFIED AND OTHERWISE in each MUNICIPAL WARD.

MUNICIPAL WARDS.	DEATHS CERTIFIED AND OTHERWISE.								DEATHS UNDER 5 YEARS.				LEGITIMATE.				ILLEGITIMATE.			
	Certified.		Not Certified.		No Medical Attendance.		Dispensary.		Under 1 year.		1 and under 5 years.		Under 1 year.		1 and under 5 years.		Under 1 year.		1 and under 5 years.	
	Under 5 yrs.	5 yrs. & up.	Under 5 yrs.	5 yrs. & up.	Under 5 yrs.	5 yrs. & up.	Under 5 yrs.	5 yrs. & up.	Number.	Certified.	Number.	Certified.	Number.	Certified.	Number.	Certified.	Number.	Certified.	Number.	Certified.
1. Dalmarnock, ...	577	534	3	3	24	...	...	...	317	292	287	285	295	275	273	271	22	17	14	14
2. Calton, ...	360	500	13	11	1	1	1	...	194	183	181	177	166	156	171	167	28	27	10	10
3. Mile-end, ...	496	516	7	5	7	1	...	...	280	266	230	230	260	246	220	220	20	20	10	10
4. Whitevale, ...	303	336	3	1	5	...	1	...	163	155	149	148	144	137	139	138	19	18	10	10
5. Dennistoun, ...	156	318	...	...	2	...	1	...	92	90	67	66	87	85	65	64	5	5	2	2
6. Springburn, ...	418	418	...	...	3	1	2	...	222	219	201	199	202	199	198	196	20	20	3	3
7. Cowlairs, ...	204	250	...	1	...	...	1	...	107	106	98	98	97	96	98	98	10	10	...	...
8. Townhead, ...	282	428	4	3	11	...	2	...	149	132	150	150	126	109	146	146	23	23	4	4
9. Blackfriars, ...	194	293	4	8	3	1	1	...	105	98	97	96	84	79	87	86	21	19	10	10
10. Exchange, ...	10	23	1	2	...	...	...	...	6	5	5	5	4	4	5	5	2	1	...	...
11. Blythswood, ...	8	36	...	...	...	...	...	...	6	6	2	2	3	3	2	2	3	3	...	...
12. Broomielaw, ...	65	119	5	6	...	...	2	1	47	42	25	23	37	35	25	23	10	7	...	...
13. Anderston, ...	230	305	1	...	1	1	1	...	115	113	118	117	98	96	111	110	17	17	7	7
14. Sandyford, ...	181	284	1	...	1	...	4	...	102	98	85	83	87	85	81	79	15	13	4	4
15. Park, ...	33	228	...	3	...	...	...	...	18	18	15	15	15	15	14	14	3	3	1	1
16. Cowcaddens, ...	265	457	2	3	18	4	5	1	159	136	131	129	139	120	117	116	20	16	14	13
17. Woodside, ...	222	426	...	2	11	1	...	1	140	130	93	92	129	121	91	90	11	9	2	2
18. Hutchesontown, ...	308	415	7	6	5	...	5	...	165	153	160	155	153	142	153	149	12	11	7	6
19. Gorbals, ...	230	376	2	1	9	1	2	...	139	127	104	103	121	113	100	99	18	14	4	4
20. Kingston, ...	251	377	4	2	3	2	5	...	149	139	114	112	136	126	107	105	13	13	7	7
21. Govanhill, ...	194	110	2	3	1	...	1	...	114	110	84	84	105	102	82	82	9	8	2	2
22. Langside, ...	90	298	...	3	...	1	...	...	57	57	33	33	52	52	33	33	5	5	...	...
23. Pollokshields, ...	13	168	...	1	...	...	...	...	8	8	5	5	8	8	5	5	...	...	...	...
24. Kelvinside, ...	13	149	...	...	...	...	...	...	11	11	2	2	11	11	2	2	...	...	...	...
25. Maryhill, ...	199	329	1	2	2	...	1	...	108	105	95	94	100	97	91	90	8	8	4	4
26. Kinning Park, ...	113	126	...	1	...	1	...	...	58	58	55	55	53	53	51	51	5	5	4	4
— Institutions and Harbour,	79	961	1	30	...	4	...	...	44	43	36	36	15	14	28	28	29	29	8	8
CITY, ...	5,494	8,991	61	97	107	19	35	3	3,075	2,900	2,622	2,594	2,727	2,579	2,495	2,469	348	321	127	125

TABLE VIII.—GLASGOW, 1907.—DEATHS in FRIENDLY SOCIETIES in each MUNICIPAL WARD.

MUNICIPAL WARDS.	Under 1 Year.		1 and under 5 Years.		5 Years and over.	TOTAL.
	Legitimate.	Illegitimate.	Legitimate.	Illegitimate.		
1. Dalmarnock, ...	166	1	232	8	481	888
2. Calton, ...	85	3	133	5	386	612
3. Mile-end, ...	141	9	182	7	441	780
4. Whitevale, ...	69	3	106	7	268	453
5. Dennistoun, ...	29	...	52	2	245	328
6. Springburn, ...	105	5	169	1	363	643
7. Cowlairs, ...	58	2	85	1	226	372
8. Townhead, ...	57	4	120	4	351	536
9. Blackfriars, ...	42	2	65	4	216	329
10. Exchange, ...	...	...	4	...	16	20
11. Blythswood, ...	1	...	2	...	17	20
12. Broomielaw, ...	13	2	16	...	94	125
13. Anderston, ...	59	2	92	2	242	397
14. Sandyford, ...	40	1	53	1	207	302
15. Park, ...	6	...	12	...	114	132
16. Cowcaddens, ...	57	...	90	4	348	499
17. Woodside, ...	61	...	70	2	342	475
18. Hutchesontown, ...	71	2	119	3	329	524
19. Gorbals, ...	44	3	70	2	283	402
20. Kingston, ...	61	4	73	4	275	417
21. Govanhill, ...	45	3	66	2	243	359
22. Langside, ...	12	...	18	...	84	114
23. Pollokshields, ...	1	...	4	...	51	56
24. Kelvinside, ...	...	...	...	...	36	36
25. Maryhill, ...	40	2	69	2	241	354
26. Kinning Park, ...	30	1	39	2	98	170
— Institutions and Harbour, ...	5	...	7	3	394	409
CITY, ...	1,298	49	1,948	66	6,391	9,752

TABLE IX.—SHOWING HOSPITAL BED ACCOMMODATION for INFECTIOUS DISEASES in GLASGOW since 1865.

YEAR.	PARISH.			Glasgow Royal Infirmary.	LOCAL AUTHORITY.				Total Beds.	Population in Thousands.	Beds per Thousand.
	City.	Barony.	Govan.		Parliamentary Road.	Belvidere Fever.	Belvidere Small-pox.	Ruchill.			
1865	100	120	54	200	136	...	...	...	610	428	1·4
1866	100	120	54	175	136	...	...	...	585	438	1·3
1867	...	120	54	100	136	...	...	...	410	446	0·9
1869	...	120	54	135	136	...	...	...	445	464	1·0
1870	...	120	54	100	250	250	...	...	774	471	1·7
1872	...	120	...	100	250	250	...	...	720	495	1·4
1875	...	...	...	100	250	250	...	...	600	500	1·2
1876	...	...	...	...	250	250	...	...	500	502	1·0
1878	...	...	...	...	120	250	150	...	520	507	1·0
1880	...	...	...	...	120	250	150	...	520	510	1·0
1881	...	...	...	...	120	370	150	...	640	512	1·2
1882	...	...	...	...	120	220	150	...	490	518	1·0
1887	...	...	...	...	120	390	150	...	660	545	1·2
1893	...	...	...	...	200	390	150	...	740	678	1·1
1900	...	...	...	...	200	390	150	440	1,180	744	1·6
1901	...	...	...	...	200	390	235	440	1,265	764	1·7
1906	...	...	...	...	...	390	235	440	1,065	836	1·3

In addition to the above, 5 temporary pavilions, with accommodation for 75 beds, erected at Belvidere during the smallpox epidemic of 1900-01, are available.

Parliamentary Road Hospital was closed in November, 1901. It was used occasionally, but only in part, for Reception-house purposes, up till April, 1906, on which date it was closed, and it has since been demolished.

TABLE X.—CITY of GLASGOW FEVER and SMALLPOX HOSPITALS.—NUMBER, AVERAGE RESIDENCE, and COST of TREATMENT OF PATIENTS from 1883-84.

Year.	Patients.			Total Ordinary Expenditure.			Average Daily Cost per Patient.			Average Cost of Treatment per Patient.			Average Cost of Bed per Year.		
	Total under Treatment.	Average Daily Number in Hospitals.	Average Residence in Days.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1883-84	3,200	338	41·7	15,772	0	0	0	2	6·6	5	6	4·0	46	10	9·0
1884-85	3,828	355	38·1	19,754	6	7	0	2	11·0	5	11	1·5	53	4	7·0
1885-86	2,154	215	40·3	15,550	6	6	0	3	11·5	7	19	6·2	72	4	9·5
1886-87	2,993	332	43·3	16,504	3	5	0	2	8·7	5	17	11·9	49	14	7·5
1887-88	3,056	327	42·5	17,768	17	10	0	2	11·6	6	6	1·0	54	5	9·6
1888-89	3,459	357	41·7	18,171	15	6	0	2	9·5	5	16	4·9	50	18	11·5
1889-90	3,582	361	36·8	17,899	7	3	0	2	8·6	4	19	11·7	49	11	7·0
1890-91	4,286	460	39·2	21,092	15	11	0	2	6·1	4	18	5·9	45	17	0·7
1891-92	4,850	491	37·1	26,808	9	7	0	2	11·8	5	10	8·2	54	11	10·8
1892-93	6,749	699	37·8	36,263	18	8	0	2	10·1	5	7	5·4	51	17	6·1
1893-94	5,528	624	41·2	34,551	14	3	0	3	0·5	6	5	2·6	55	9	3·5
1894-95	5,482	644	42·9	34,039	19	0	0	2	10·8	6	4	2·2	52	17	3·4
1895-96	5,127	651	46·5	34,892	12	8	0	2	11·1	6	16	1·5	53	11	5·6
1896-97	5,468	627	41·9	34,224	14	9	0	2	11·9	6	5	2·5	54	11	0·5
1897-98	5,687	709	45·5	36,972	18	10	0	2	10·3	6	10	0·3	52	3	5·7
1898-99	5,956	833	45·3	39,261	9	2	0	2	7·0	5	16	11·8	47	2	7·3
1899-1900	6,663	923	44·8	42,020	9	11	0	2	5·9	5	11	10·0	45	10	8·2
1900-01	8,888	1,031	42·3	69,015	8	6	0	3	8·0	7	15	1·9	66	18	9·8
1901-02	6,990	772	40·3	64,265	12	10	0	4	6·7	9	3	10·6	83	5	0·1
1902-03	4,882	592	44·3	53,185	12	10	0	4	11·1	10	17	10·6	89	17	2·8
1903-04	6,799	720	38·8	55,961	2	10	0	4	3·0	8	4	9·6	77	14	7·0
1904-05	5,484	576	36·3	52,558	11	4	0	5	0·0	9	1	5·0	91	5	0·0
1905-06	5,902	620	38·3	52,052	12	7	0	4	7·2	8	16	2·2	83	19	0·0
1906-07	6,803	766	41·1	54,325	19	6	0	3	10·6	7	19	8·5	70	18	4·0
1907-08	8,102	942	40·6	62,659	4	7	0	3	7·6	7	7	7·0	66	10	14·9

N.B.—The above calculations of cost do not include interest on capital expended in erecting Hospitals.

TABLE XI.—CITY of GLASGOW FEVER and SMALLPOX HOSPITALS.—STATEMENT showing PATIENTS CLASSIFIED as to DISEASE, AVERAGE RESIDENCE, and AVERAGE COST per PATIENT for each YEAR from 1883-84.

Year.	Scarlet Fever.		Enteric Fever.		Whooping-Cough.		Typhus.		Measles.		Other Infectious Diseases.*		Smallpox.		All Other Diseases.†	
	Average Residence (Days).	Average Cost per Patient.	Average Residence (Days).	Average Cost per Patient.	Average Residence (Days).	Average Cost per Patient.	Average Residence (Days).	Average Cost per Patient.	Average Residence (Days).	Average Cost per Patient.	Average Residence (Days).	Average Cost per Patient.	Average Residence (Days).	Average Cost per Patient.	Average Residence (Days).	Average Cost per Patient.
		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
1883-84	51·7	6 11 10·0	44·4	5 13 2·6	58·9	7 10 2·3	35·8	4 11 3·5	34·8	4 8 8·9	...	...	27·5	3 10 1·5	26·4	3 7 3·8
1884-85	50·2	7 6 5·0	45·1	6 11 6·5	44·4	6 9 6·0	35·2	5 2 8·0	30·6	4 9 3·0	...	...	19·2	2 16 0·0	22·0	3 4 2·0
1885-86	54·7	10 16 6·2	46·6	9 4 5·5	36·2	7 3 3·5	31·5	6 4 8·2	26·2	5 3 8·5	24·7	4 17 9·2	24·1	4 15 4·7	21·8	4 6 3·5
1886-87	56·1	7 12 10·5	48·7	6 12 8·5	44·3	6 0 8·6	31·3	4 5 3·5	29·5	4 0 4·6	26·5	3 12 2·5	...	...	26·2	3 11 4·7
1887-88	55·2	8 3 9·1	50·3	7 9 2·7	42·1	6 4 10·7	33·2	4 18 5·9	22·2	3 5 10·3	29·0	4 6 0·4	16·5	2 8 11·4	21·3	3 3 2·3
1888-89	56·7	7 18 3·4	52·5	7 6 6·7	50·1	6 19 10·3	34·2	4 15 5·7	26·6	3 14 3·1	28·3	3 19 0·0	18·5	2 11 7·7	23·9	3 6 8·6
1889-90	54·4	7 7 9·4	50·2	6 16 4·5	53·0	7 3 11·8	34·9	4 14 9·7	30·6	4 3 1·6	21·4	2 18 1·6	24·0	3 5 2·4	22·5	3 1 1·5
1890-91	54·3	6 16 5·1	49·0	6 3 1·3	40·3	5 1 3·0	32·4	4 1 4·9	25·4	3 3 9·8	25·2	3 3 3·8	24·0	3 0 3·6	25·4	3 3 9·8
1891-92	53·7	8 0 2·5	49·3	7 7 0·9	43·8	6 10 10·0	31·3	4 13 4·5	26·2	3 18 2·0	22·9	3 8 3·8	38·0	5 13 4·4	20·8	3 2 0·6
1892-93	50·6	7 3 10·0	49·1	6 19 6·8	42·6	6 1 1·1	32·8	4 13 2·8	26·1	3 14 2·3	20·0	2 16 10·2	30·0	4 5 3·3	20·2	2 17 5·0
1893-94	52·7	8 0 2·0	52·5	7 19 6·7	51·0	7 15 0·0	34·8	5 5 9·2	27·7	4 4 2·2	22·4	3 8 0·9	42·2	6 8 3·0	23·1	3 10 2·5
1894-95	57·4	8 6 3·2	51·8	7 10 0·6	61·0	8 16 8·4	34·8	5 0 9·6	27·7	4 0 2·8	26·2	3 15 10·7	30·4	4 8 0·7	27·1	3 18 6·0
1895-96	57·7	8 8 11·0	57·2	8 7 5·4	54·1	7 18 4·5	33·1	4 16 10·8	29·2	4 5 5·8	31·2	4 11 4·1	30·1	4 8 1·4	29·4	4 6 0·8
1896-97	58·1	8 13 8·0	55·3	8 5 3·6	53·5	7 19 11·0	28·8	4 6 1·1	29·3	4 7 7·0	32·6	4 17 5·4	31·5	4 14 1·9	28·1	4 3 11·9
1897-98	59·9	8 11 2·9	54·7	7 16 4·5	58·1	8 6 1·2	43·1	6 3 2·6	29·2	4 3 5·7	36·3	5 3 9·3	31·0	4 8 7·5	31·3	4 9 5·8
1898-99	58·7	7 11 7·1	55·4	7 3 0·8	54·9	7 1 9·3	35·7	4 12 2·3	29·6	3 16 5·3	33·8	4 7 3·5	...	...	29·6	3 16 5·3
1899-1900	59·3	7 7 11·4	55·7	6 18 11·7	54·4	6 15 8·7	33·4	4 3 4·0	27·8	3 9 5·3	34·9	4 7 0·9	22·6	2 16 4·6	28·6	3 11 4·3
1900-01	58·7	10 15 3·7	56·7	10 7 11·7	51·1	19 7 5·2	33·2	6 1 9·3	26·0	4 15 4·4	38·7	7 1 11·4	28·1	5 3 0·9	30·0	5 10 0·5
1901-02	53·5	12 4 0·6	53·8	12 5 5·0	58·9	3 8 8·2	30·4	6 18 8·1	30·5	6 19 1·6	35·2	8 0 6·9	30·4	6 18 8·1	32·8	7 9 7·5
1902-03	57·9	14 5 1·3	51·6	12 14 1·0	60·8	14 19 4·7	44·0	10 16 8·0	31·6	7 15 7·2	35·5	8 14 9·7	26·1	6 8 6·3	31·4	7 14 7·4
1903-04	55·9	11 17 5·2	56·3	11 19 1·6	49·2	10 8 11·7	33·9	7 3 11·9	27·8	5 18 1·0	33·7	7 3 1·7	29·6	6 5 8·7	27·9	5 18 6·1
1904-05	54·3	13 11 5·0	57·3	14 6 5·0	43·4	10 17 0·0	32·0	8 0 0·0	27·0	6 15 0·0	34·5	8 12 5·0	27·3	6 16 5·0	29·2	7 6 0·0
1905-06	53·9	12 17 11·3	57·6	13 14 11·5	44·7	10 5 7·4	38·4	8 16 7·7	34·0	7 16 4·8	29·3	6 14 9·4	60·6	13 18 9·1	30·1	6 18 5·5
1906-07	50·7	9 16 10·7	49·8	9 13 8·0	47·5	9 4 8·8	80·5	15 12 9·7	27·3	5 6 0·3	43·3	8 8 0·7	74·5	14 9 5·9	13·3	2 11 7·7
1907-08	56·2	10 4 5·0	55·7	10 2 6·1	49·4	8 19 8·6	25·9	4 13 11·6	30·9	5 12 3·0	37·3	6 15 7·5	35·0	6 7 2·7	25·8	4 13 9·8

* Includes Erysipelas, Diphtheria, Chickenpox, and Puerperal Fever; prior to 1885-86 these are included in "Other Diseases." † Includes Nursing Mothers, besides persons sent in by mistaken Diagnosis.

N.B.—The above Calculations do not include Interest on Capital expended in erecting Hospitals.

TABLE XII.

City of Glasgow Fever and Smallpox Hospitals.

RETURN BY THE MEDICAL OFFICER OF HEALTH

Shewing Number, Average Residence, and Cost of Treatment of Patients, 1907-1908.

ORDINARY NETT EXPENDITURE, as per Treasurer's Statement * :—

Fever Hospital, Belvidere, ...	£32,004 1 7	
Smallpox Hospital, Belvidere, ...	906 4 11	
Fever Hospital, Ruchill, ...	29,748 18 1	
		£62,659 4 7

* The Ordinary Expenditure on all the Hospitals has been thrown together. There is a certain amount of community in the Expenditure which could not be unravelled without trouble quite out of proportion to any result.

Average daily number of Patients in Fever Hospital, Belvidere, ...	469
Average daily number of Patients in Smallpox Hospital, Belvidere, ...	22
Average daily number of Patients in Fever Hospital, Ruchill, ...	451
Average daily number of Patients in Hospitals, ...	942

	Belvidere Fever Hospital.	Belvidere Smallpox Hospital.	Ruchill Hospital.	Total.
Patients remaining at 31st May, 1907, ...	419	41	525	985
Patients admitted during 1907-1908, ...	4,468	184	3,450	8,102
Total under Treatment, 1907-1908, ...				9,087
Average Residence, ...		40·6 days.		

Average Daily Expenditure, ...	£171	4	0
Average Daily Cost per Patient, ...	0	3	7·62
Average Cost of Treatment per Patient, ...	7	7	6·97
Average Cost of Bed per Year, ...	66	10	4·92

STATEMENT SHEWING PATIENTS CLASSIFIED AS TO DISEASE, AVERAGE RESIDENCE IN EACH CASE SO FAR AS DISMISSED UP TO 1ST JULY, 1908, AND AVERAGE COST AT THE DAILY RATE GIVEN ABOVE—

Disease.	No. Admitted.	Average Residence.	Average Cost.
Scarlet Fever, ...	1,955	56·23 days.	£10 4 4·95
Enteric Fever, ...	394	55·71 „	10 2 6·07
Whooping-cough, ...	661	49·44 „	8 19 8·57
Typhus Fever, ...	7	25·85 „	4 13 11·57
Measles, ...	2,940	30·88 „	5 12 2·98
Other Infectious Diseases,*	1,565	37·31 „	6 15 7·46
Smallpox, ...	1	35·00 „	6 7 2·70
All other Diseases,†	579	25·81 „	4 13 9·83
All Cases, ...	8,102		

* Includes Erysipelas, Diphtheria, Chickenpox, and Puerperal Fever.
† Includes Nursing Mothers, besides Persons sent in by mistaken diagnosis.

The above calculations of cost do not include Interest on Capital expended in erecting Hospitals.

A. K. CHALMERS.

SANITARY DEPARTMENT,
GLASGOW, *3rd July, 1908.*