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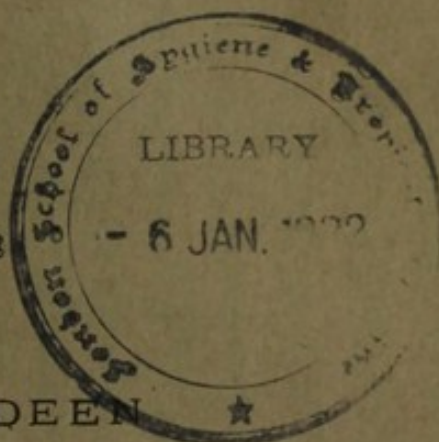
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CITY OF ABERDEEN

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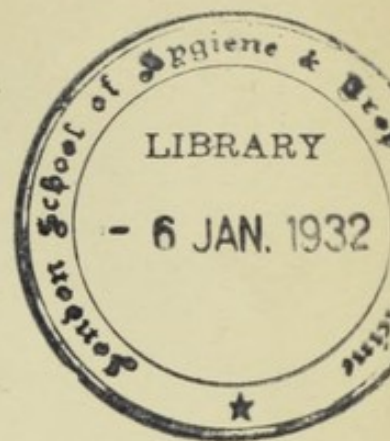
MEDICAL OFFICER OF HEALTH

AND

SANITARY INSPECTOR

For the Years 1922 and 1923.





CITY OF ABERDEEN

REPORTS

BY THE

MEDICAL OFFICER OF HEALTH

AND

SANITARY INSPECTOR

For the Years 1922 and 1923.



G. CORNWALL & SONS, Aberdeen and London

REPORT

BY THE

MEDICAL OFFICER OF HEALTH

J. PARLANE KINLOCH, M.D.

For the Years 1922 and 1923.

REPORT

ANNUAL REPORT OF THE

COMMISSIONER OF THE

LAND OFFICE

CONTENTS.

Chapter	I.—STATISTICAL COMMENTARY.	PAGE
	1. Population,	7
	2. Births,	10
	3. Marriages,	13
	4. Deaths,	17
Chapter	II.—MORBIDITY, MORTALITY, AND PREVENTION OF INFECTIOUS DISEASES.	
	1. Scarlet Fever,	31
	2. Diphtheria,	35
	Diphtheria Immunisation,	35
	3. Typhoid and Para-Typhoid Fevers,	39
	4. Food Poisoning,	42
	Milk Infection,	43
	Meat Poisoning,	46
	Diarrhœa due to Sonne Bacillus,	46
	5. Bacillary Dysentery,	49
	6. Typhus Fever,	49
	7. Small-pox,	50
	Vaccinations,	50
	8. Chicken-pox,	52
	9. Measles,	52
	10. Whooping-Cough,	53
	11. Erysipelas,	53
	12. Puerperal Fever,	53
	13. Acute Poliomyelitis,	54
	14. Epidemic Encephalitis,	54
	15. Epidemic Cerebro-Spinal Meningitis,	55
	16. Acute Primary and Influenzal Pneumonia,	55
	17. Malaria,	55
	18. Trench Fever,	55
	19. Venereal Diseases,	55
	20. Ophthalmia Neonatorum,	55
	21. Influenza,	55
	22. Tuberculosis,	56
	23. Infectious Jaundice,	56

CONTENTS—continued.

	PAGE
Chapter III.—COMPARISON BETWEEN ABERDEEN AND OTHER TOWNS,	58
Chapter IV.—SPECIAL HEALTH SERVICES,	65
1. City Hospital Services,	65
2. Tuberculosis Services,	71
3. Venereal Diseases Services,	83
4. Blind Persons Services,	93
5. Mother and Child Welfare Services,	103
6. Port Sanitary Services,	155
7. Veterinary Services,	157
8. Laboratory Services,	165
Chapter V.—THE CONTROL OF FOOD AND ENVIRONMENTAL CONDITIONS.	
1. Control of Food,	171
2. Atmospheric Conditions and Smoke Abatement.	
(a) Weather and Disease,	172
(b) Smoke Abatement,	173
3. Housing Conditions,	176
4. Drainage,	188
5. Workshops and Inspection of Plans,	197
6. Offensive Trades,	197
7. Water Supply,	211

PREFACE.

In presenting the first of my Annual Reports as Medical Officer of Health, it is pleasant and proper to acknowledge the great public health heritage that has been bequeathed to me and to my successors in office by Professor Matthew Hay, who has retired from the post of Health Officer of the Local Authority after a period of service extending over thirty-five years.

The Medical Officers of Health of the generation to which Professor Hay belongs are undoubtedly responsible for the new sanitary era in which we live and which makes life so much more worth living. When Professor Hay's work began, the powers under the existing Health Acts had only comparatively recently been secured for the larger cities, and were non-existent or entirely inadequate elsewhere. The whole machinery of modern public health had to be devised and the Town Councils of that time had to be instructed in the new duties devolving upon them as a result of the statutory health enactments. Not only so, but with increasing knowledge new statutes had to be devised and Parliament had to be educated to the point of passing them. In the earlier days of the modern sanitary era, it was the abatement of gross environmental pollution which had to be secured, so that conditions more favourable to health and life and to increasing resistance to disease could be attained. With the bringing of the environment under control, there followed the recognition that man himself was the chief reservoir from which infection flowed, and that epidemics of disease would continue to defy environmental sanitation so long as infectious persons and susceptible individuals exist. This led to the development of the idea of communal responsibility for the welfare of the individual and for the development of new methods of protection from disease, resulting in the great modern health services with their immunising and hospital facilities.

This is not the place to attempt any appreciation of Professor Hay's contribution to this health effort, but it is universally acknowledged that he stands among the foremost workers of his generation, and if it be permitted to me or to my successors to add but a tithe to the heritage he has bequeathed us then we may be abundantly content.

J. PARLANE KINLOCH,
Medical Officer of Health.

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City of Aberdeen.

REPORT BY THE MEDICAL OFFICER OF HEALTH

For the Years 1922 and 1923.

CHAPTER I.

STATISTICAL COMMENTARY.

POPULATION.

The populations as estimated at the middle of each of the years 1922 and 1923, and including the inmates of Oldmill Hospital and Kingseat Mental Hospital chargeable to Aberdeen, were 160,536 and 160,673 respectively. The estimates are based on the census population for 1921; and the subsequent increase or decline is calculated from any change in the number of occupied houses since 1921, the number of such houses being obtainable from the Assessor's Roll.

This method of estimating the population was adopted by the Scottish Registrar-General in 1911, and assumes that the population varies directly with the number of occupied houses in the City. In 1911, this method was tested by application to the figures of previous censuses, and was then found to be satisfactory. War and post-war conditions, however, and in particular the acute shortage of houses in the City, make this method of estimating the population of more limited reliability in recent years, as was clearly shown by the 1921 census figures. Thus the population of the City in 1921, as estimated on the basis of the number of inhabited houses, and always including the inmates of Oldmill Hospital and Kingseat Mental Hospital chargeable to Aberdeen, was 166,500 as calculated from the 1911 census figures, whereas the population as enumerated at the 1921 census was found to be 159,915, a difference of 6,585. But the population as enumerated at the 1911 census and calculated to the middle of the year was 165,426, as compared with 159,915 measured by the 1921 census, and accordingly during the decennium 1911-1921, there was an actual loss of population amounting to 5,511, or 3 per cent.—this decrease being in contrast with the increase that each successive census previously revealed since the enumeration of the population was begun in 1801. Further examination of the census figures showed that the average number of persons to each occupied house in 1921 was 4.39 as compared with an average of 4.53 in 1911, these figures forming the factors by which the yearly number of inhabited houses has to be multiplied in the 1911-1921 and 1921-1931 decennia respectively for the purpose of estimating intercensal populations.

In view of these circumstances, it has appeared desirable to further analyse the figures made available by the 1911 and 1921 censuses, with special relation to their house density figures of 4.53 and 4.39 respectively. As compared with the total

number of inhabited houses in the City it may properly be assumed from the census data that despite the statutory overcrowding at the lower end of the housing scale, which was known to exist in 1921, and which did not exist in 1911, the number of houses with a high density of population was strictly limited, and had but little influence on the average house density. This indicates that the low figure of house density of population at the upper end of the housing scale much more than compensated for any overcrowding since it permitted a distinctly lower average house density figure in 1921 as compared with the average figure for 1911. If the average number of persons per house had continued to be 4.53 as in 1911, then, since there were 36,209 occupied houses, the population of Aberdeen, excluding Oldmill and Kingseat, would have been 164,027 in 1921, instead of 158,963, as is the case when the average number of persons per house had fallen to 4.39. In other words, this fall in the house-density of population means that the occupied houses were accommodating 5,064 less people than they would have under the 1911 average. The Assessor's Roll gives the number of inhabited houses in 1922 as 37,864, as compared with 36,209 determined by the 1921 census, and this figure multiplied by the average house-density factor of 4.39 gives an estimated population of 166,223 for 1922. So also, the Assessor's Roll gives the number of inhabited houses in 1923 as 37,898, as compared with 36,209 determined by the 1921 census, and this figure gives an estimated population figure of 166,372 for 1923. It has to be noted that the estimates based on the number of inhabited houses in the City, as multiplied by the house-density factor 4.39, indicate an increase of population of 7,260 for 1922 and 7,409 for 1923, whereas the Registrar-General uses an average house-density factor of 4.21451, which, multiplied by the number of inhabited houses included in the Assessor's Annual Returns, estimates an increase of population of only 621 and 758 respectively in these years. The difference between these factors of 4.39 and 4.21 depends on the fact that in calculating the 4.21 density factor, the Registrar-General has excluded institutions and houses of 25 rooms and upwards.

In Aberdeen the increased number of habitable houses has been almost wholly met in recent years by the building of new houses of four rooms and upwards, houses in which the house density of population may reasonably be presumed to be below the average house density of the City. As a matter of fact, and with the exception of 68 three-roomed houses built at Torry under the 1919 housing scheme, the only houses that have been erected to accommodate people at the lower end of the housing scale are 18 houses in Park Road, which were built to provide alternative accommodation for tenants displaced from houses of a similar description in Blackfriars Street, the demolition of the Blackfriars Street houses being required to permit of the building of the City War Memorial contiguous to the Art Gallery.

It would appear, therefore, that the estimation of the population at the present time on a basis of the number of inhabited houses seems particularly unreliable.

In addition to the housing facts as stated, the continued distress arising from a large amount of unemployment, the dearth of houses—making it difficult if not impossible for an intending immigrant to the City to obtain any house whatsoever—together with the known increase of emigration, a diminishing marriage-rate and birth-rate, and a high infantile mortality, all afford ground for the belief that the decrease of population as measured in the 1911-1921 decennium has continued throughout 1922 and 1923, and that

the increase of population to the extent of 621 and 137 persons in 1922 and 1923 respectively, as estimated by the Registrar-General, is fallacious.

Prior to 1911 the method in use by the Registrar-General of estimating the population was based on the assumption that the rate of increase or decrease shown by censal figures which occurred during the previous intercensal period continues during the subsequent post-censal period, and was carried out by calculating a series in geometrical progression starting with the most recent census population and having a difference proportional to the intercensal rate of increase or decrease. In the special circumstances as described above as applicable to Aberdeen, it is suggested that an estimate of population based on the geometrical decrease is more likely to approximate to the actual facts. Estimated in this way by logarithms, the population of Aberdeen as estimated to the middle of 1922 is 159,374, and to the middle of 1923, 158,835, giving a decrease of population of 541 during 1922, and 539 during 1923, instead of increases of 621 and 137 respectively, which the estimates on the basis of the number of inhabited houses provide.

In order to elucidate the matter further, an estimate of the population of Aberdeen has been made for 1922 and 1923 by adding each year the excess of births over deaths and subtracting the decrease of population lost by emigration, as obtained from the local emigration agents, and adjusting the previous year's estimate accordingly. Estimated in this fashion the population of Aberdeen for 1922 is 159,289, and for 1923, 156,598, being a decrease of 626 and 2,691 respectively in each of these years.

While the above considerations would appear to indicate that the various rates referred to in the text should be calculated either on the basis of the geometrical decrease, or by adding each year the excess of births over deaths and subtracting the decrease of population lost by emigration, as either being nearer the truth, nevertheless, in the interest of uniformity, the population figures of 160,536 for 1922, and 160,673 for 1923, as estimated by the Registrar-General from the number of inhabited houses, have been retained as a basis for calculating the various rates in this report.

The accompanying Table gives the percentage and number of the population at each of the principal age-periods.

TABLE I.—ABERDEEN.—POPULATION AT VARIOUS AGE-PERIODS—1922 AND 1923.

(As estimated from *Proportions at Census of 1921.*)

		Under 1 year.	1 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 years and upwards.	ALL AGES.
Percentage of Population at each Age (accord- ing to Census)	1911	2.23	9.03	22.13	19.13	26.84	15.31	5.33	...
	1921	2.35	6.66	19.41	20.00	27.00	18.42	6.16	...
Estimated Popula- tion at each Age- Period in . . .	1923	3,776	10,791	31,187	32,134	43,382	29,596	9,897	160,673
	1922	3,772	10,692	31,160	32,107	43,345	29,571	9,889	160,536

BIRTHS.

(Table II.)

The annual number of births as stated in Table II. has been corrected since the year 1911 by in-transfers of all births outside the City occurring among women whose usual place of residence was inside the City, and by out-transfers among women within the City whose usual place of residence was outside the City. It is not unusual for the prospective mothers of illegitimate children to come into the City for the purpose of being confined. On the other hand, since the establishment of Oldmill Hospital outside the City boundaries, the births taking place within Oldmill Hospital fall naturally to be added to the births in the City, since the mothers belong to the City. These transfers have been undertaken by the Registrar-General, and it is possible from his reports to obtain the corrected numbers.

Thus estimated, the total number of births during the year 1922 was 3,969, and during 1923, 3,766, equivalent to rates of 24·7 and 23·4 per 1,000 of the population. In 1921, the births amounted to 4,254 and were at the rate of 26·6 per 1,000 of population. In 1920, the births were 4,868, equivalent to a rate of 30·3 per 1,000 of the population—a birth-rate that was remarkable in that it exceeded the birth-rate of 27·6 for 1906, uncorrected for transfers, from which year the birth-rate of the City steadily declined to 16·8 per 1,000 in 1918.

The increase of human fertility which had its maximum expression during the first half of 1920, namely a birth-rate of 33·8 per 1,000, has, with few exceptions, been experienced in the years immediately succeeding former periods of war, and the coincident period of trade prosperity in 1919-1920 was much too brief to have any measurable effect, while the trade depression in 1921, 1922 and 1923, as expressed by the decline in the marriage-rate from 13·9 and 13·2 in 1919 and 1920 respectively to 10·9, 10·1 and 9·7 in 1921, 1922, and 1923 respectively, indicates the influence of such conditions in determining the birth-rate. Apart from such local or national influences having their reflection on the birth-rate, a study of the birth-rate figures from 1856 to 1923 merely emphasises the importance of biological factors in determining human fertility.

Proportion of Males to Females.—The number of male infants to every 100 female infants born in Aberdeen during each of the past ten years was as follows:—

Year.	Males to 100 females.	Year.	Males to 100 females.
1914 . .	105	1919 . .	105
1915 . .	101	1920 . .	104
1916 . .	101	1921 . .	106
1917 . .	102	1922 . .	100
1918 . .	105	1923 . .	95

The proportion of males to females has varied from 95 males to 100 females in 1923 to 106 males to 100 females in 1921.

TABLE II.—ABERDEEN.—MARRIAGE, BIRTH, AND DEATH-RATES—1856 TO 1923.
Per 1,000 of population.

Year.	Population.	Marriages.		Births.†			Deaths.‡			Excess of Birth-Rate over Death-Rate.
		Number.	Rate per 1,000 of Population.	Number.	Rate per 1,000 of Population.	Illegit. Births per 100 Total Births.	Number.	Rate per 1,000 of Population.	Average Age at Death.	
1923	160,673	1,564	9·7	3,766	23·4	7·7	2,157	13·4	45·1	10·0
1922	160,536	1,616	10·1	3,969	24·7	9·7	2,595	16·2	41·5	8·5
1921	159,915	1,751	10·9	4,254	26·6	9·2	2,292	14·3	44·1	12·3
1920	160,466	2,122	13·2	4,868	30·3	9·3	2,398	14·9	40·1	15·4
1919	161,017	2,235	13·9	3,379	21·0	10·6	2,469	15·3	43·4	5·7
1918	161,568	1,626	10·1	2,721	16·8	11·4	2,573	15·9	40·6	0·9
1917	162,119	1,341	8·3	2,880	17·8	11·8	2,387	14·7	41·2	3·1
Mean of 1917-1921	161,017	1,815	11·4	3,620	22·5	10·5	2,424	15·0	41·9	7·5
1916	162,670	1,446	8·9	3,546	21·8	10·1	2,367	14·6	43·3	7·2
1915	163,222	1,878	11·5	3,784	23·2	10·0	3,075	18·8	36·3	4·4
1914	163,773	1,536	9·4	4,006	24·5	9·4	2,752	16·8	39·5	7·7
1913	164,324	1,348	8·2	3,852	23·4	10·6	2,859	17·4	36·7	6·0
1912	164,875	1,350	8·2	4,145	25·1	10·4	2,564	15·6	40·5	9·5
Mean of 1912-1916	163,773	1,512	9·2	3,867	23·6	10·1	2,723	16·6	39·3	7·0
1911-1915	164,324	1,489	9·1	3,959	24·1	10·2	2,752	16·8	38·1	7·4
1906-1910	163,620	1,360	8·3	4,505	27·5	9·7	2,512	15·4	37·6	12·2
1901-1905	158,082	1,428	9·0	4,872	30·8	8·5	2,763	17·5	34·9	13·3
1896-1900	145,740	1,356	9·3	4,636	31·8	8·3	2,644	18·1	33·3	13·7
1891-1895	131,627	1,099	8·4	4,114	31·3	9·8	2,539	19·3	32·9	12·0
1886-1890	117,587	911	7·8	3,827	32·5	10·4	2,370	20·2	...	12·3
1881-1885	108,959	848	7·8	3,712	34·1	10·6	2,159	19·8	...	14·3
1876-1880	100,419	788	7·9	3,480	34·7	10·9	2,100	20·9	...	13·8
1871-1875	91,941	705	7·7	3,169	34·5	12·1	2,063	22·4	...	12·1
1866-1870	84,234	684	8·1	3,010	35·7	12·9	1,978	23·5	...	12·2
1861-1865	77,040	624	8·1	2,663	34·6	...	1,915	24·9	...	9·7
1856-1860	73,458	524	7·1	2,397	32·6	...	1,772	24·1	...	8·5

† Corrected for transferred births for 1911 and subsequent years.

‡ Corrected for transferred deaths for 1904 and subsequent years.

Illegitimate Births.—In 1922, the number of illegitimate births, after correction for transfers, was 386, and amounted to 9·7 per cent. of the total births; in 1923, illegitimate births numbered 291, equal to a rate of 7·7 per cent. ; the average rate for the 1917-1921 quinquennium being 10·5.

Births in Proportion to Women of Child-bearing Ages (15-45 years).—The ordinary method of stating the birth-rate in proportion to the total population does not afford so accurate a measure of the fertility of the population as when the births are compared with the number of women of fertile ages in the population. The fertile period is usually assumed to extend from the age of 15 to the age of 45. Thus estimated, the number of legitimate births among married women in 1922 and 1923 respectively amounted to 206 and 200 per 1,000 of such women at the ages specified. In 1921 the rate was 230.

Similarly stated, the illegitimate birth-rate among unmarried and widowed women of the fertile ages was 15·9 per 1,000 in 1922, and 12·0 in 1923. In 1921, it was 16·5.

Still-Births.—Information regarding still-births has been made increasingly available since the adoption of the Notification of Births Act by the Town Council in June 1909. During 1922 and 1923, the notification of still-births may be regarded as fairly complete, the notifications being made by the doctors and midwives in attendance. The number of registered births, the number of still-births, and the still-birth rate per 1,000 of registered births, for the years 1917 to 1923 inclusive, were as follows:—

STILL-BIRTHS.

YEAR.	No. of Registered Births (including Oldmill).	No. of Still-births.	Rate per 1,000 Registered Births.
1923	3,863	159	41·2
1922	4,057	181	44·6
1921	4,336	189	43·6
1920	5,010	170	33·9
1919	3,458	179	51·8
1918	2,794	143	51·2
1917	2,946	134	45·5
Mean of 1917-1921 . . .	3,709	163	45·2

The still-birth rate per 1,000 of registered births would appear to correspond to the higher of similar rates recorded in countries where the notification of still-births has for long been the practice. Such comparisons are commonly unreliable, however, since the height of the figures frequently represents the degree of completeness of notification.

MARRIAGES.

(Tables II. and III.)

During the year 1922, there were 1,616 marriages within the City, equivalent to a rate of 10·1 per 1,000 of the population; and during 1923, 1,564 marriages, equivalent to a rate of 9·7. In the preceding year (1921) there were 1,751 marriages, with a rate of 10·9, as compared with 2,122 with a rate of 13·2 and 2,235 with a rate of 13·9 in 1920 and 1919 respectively—the years in which the highest marriage-rates were recorded in Aberdeen since civil registration began. The marriage-rate, which was 8·1 in 1911, and remained at 8·2 in 1912 and 1913, rose in the early years of the War to 9·4 in 1914 and 11·5 in 1915. In 1916 and 1917 it declined to 8·9 and 8·3 respectively per 1,000 of the population. It is noteworthy that these two periods of increase in the marriage-rate, namely in 1914-15 and 1919-20, were coterminous with the beginning and end of the War. It is natural to conclude that the increase in the number of marriages from 1,335 in 1911 to 1,878 in 1915, and again to 2,235 in 1919, would have a definite influence in determining family distribution within the City, and be reflected to some degree in the house-density of population.

The following information (Table III) in regard to marriages during the years 1913 to 1923 inclusive is compiled from the entries of the Registrars, and contains much interesting information relating to sex, status, occupation and residence.

Residence.—In 1922, 1,083 of the males married were ordinarily resident in Aberdeen, the remaining 533 coming from outwith the City. In 1923, the corresponding numbers were 1,073 and 491.

As regards the females, in 1922, 1,180 were ordinarily resident in the City, and 436 lived outside the City, the corresponding numbers for 1923, being 1,201 and 363.

Irregular Marriages.—The number of irregular marriages in 1922, was 367, and in 1923, 306. In 1921, it was 399; in 1920, 537; in 1919, 620; in 1918, 471; in 1917, 411; in 1916, 476; in 1915, 685; in 1914, 261; and in 1913, 133. It is obvious, therefore, that the two periods of increase in the irregular marriage-rate, as also the ordinary marriage-rate, merely anticipated the two periods of increase in the birth-rate as demonstrated at the beginning and end of the War, while the marked increase of irregular marriages from 1915 to 1921 would appear to be due to war and post-war conditions. It is interesting to consider whether the re-establishment of pre-war conventions or the unemployment resulting from trade depression is mainly responsible for the decline in marriages, both regular and irregular. The evidence available strongly indicates that the prevailing unemployment is the dominant factor.

Status.—In the 1,616 marriages in 1922, the persons married included 167 widowers and 118 widows. In 1923, the numbers of widowers and widows remarrying were 138 and 99 respectively.

TABLE III.—ABERDEEN.—MARRIAGES IN YEARS 1913-23.

	YEAR.										
	1923.	1922.	1921.	1920.	1919.	1918.	1917.	1916.	1915.	1914.	1913.
A.—MEN.											
<i>Status :—</i>											
BACHELORS,	1426	1449	1605	1916	2043	1475	1208	1316	1740	1399	1221
WIDOWERS,	138	167	146	206	193	150	133	130	138	137	127
ALL,	1564	1616	1751	2122	2236	1625	1341	1446	1878	1536	1348
<i>Occupation :—</i>											
Labouring and Artisan,	1113	1110	1260	1609	1637	1175	986	1090	1472	1158	981
Commercial,	286	334	314	288	325	256	195	288	298	292	283
Professional,	165	170	176	224	273	186	148	61	102	79	78
Other or No Occupation,	0	2	1	1	1	8	12	7	6	7	6
<i>Residence :—</i>											
In Aberdeen,	1073	1083	1190	1427	1411	1001	829	1046	1304	1137	957
Not in Aberdeen,	491	533	561	695	825	624	521	400	574	399	391
B.—WOMEN.											
<i>Status :—</i>											
SPINSTERS,	1465	1498	1605	1931	2026	1480	1249	1340	1794	1451	1280
WIDOWS,	99	118	146	191	210	145	92	106	84	85	68
ALL,	1564	1616	1751	2122	2236	1625	1341	1446	1878	1536	1348
<i>Occupation :—</i>											
Domestic Servants,	326	374	347	397	502	369	348	401	487	370	334
Dressmakers and Milliners,	61	79	118	108	112	115	95	83	123	83	93
Workers in other Workshops and in Factories,	517	466	509	707	720	534	439	430	628	567	486
Saleswomen (incl. Dealers),	158	158	208	221	199	155	120	104	135	107	90
Clerks and Typists,	139	121	133	127	122	101	71	73	80	61	41
Teachers and Nurses,	77	100	99	102	92	76	75	87	72	60	63
Other Occupation,	38	30	19	35	43	45	21	23	14	14	12
No stated Occupation,	248	288	318	425	446	230	172	245	339	274	229
<i>Residence :—</i>											
In Aberdeen,	1201	1180	1348	1586	1721	1273	1061	1128	1433	1255	1070
Not in Aberdeen,	363	436	403	536	515	352	280	318	445	281	278
IRREGULAR MARRIAGES.											
Number,	306	367	399	537	620	471	411	476	685	261	133
Percentage,	19·6	22·7	22·8	25·3	27·7	29·0	30·6	32·9	36·5	17·0	9·9

Occupations of Men.—Of the total marriages in 1922, 1,110 were of men belonging to the labouring and artisan classes, and in 1923, the figure was 1,113. In the commercial classes there were 334 marriages in 1922, and 286 in 1923, and in the professional classes 170 in 1922, and 165 in 1923.

The decrease of marriages has, therefore, been largely confined to males of the artisan and labouring classes.

Occupations of Women.—As usual, the class of women among whom the greatest number of marriages took place was that of workers employed in workshops and factories. This class of workers provided 466 marriages in 1922, and 517 in 1923. The next largest group was that of domestic servants, with 374 marriages in 1922, and 326 in 1923. The third group was that of women without stated occupation. In this group there were 288 in 1922, and 248 in 1923. Next came saleswomen (including dealers), with 158 marriages for 1922, and the same number for 1923. Next came clerks and typists, with 121 marriages in 1922 and 139 in 1923; teachers and nurses, with 100 in 1922, and 77 in 1923; and dressmakers and milliners, with 79 in 1922, and 61 in 1923.

Percentages of Marriages.—But the numbers of marriages in each occupation group gives no indication of the opportunity of marriage to men in different occupation groups, or of the chance of marriage belonging to women in the different groups. To measure the probability of marriage, it is necessary to measure the number of marriages against the total number of men and women respectively belonging to each occupation group per 100 of such men and women. The following Table indicates the relative percentage of marriages in the various groups.

TABLE III (A).—ABERDEEN.—PERCENTAGE OF MARRIAGES OF PERSONS EMPLOYED IN DIFFERENT OCCUPATIONS.

A. MEN.

Occupation.	No. employed in Aberdeen (Census 1921).	No. of Marriages Registered in Aberdeen.					Percentage to No. employed.				
		1919	1920	1921	1922	1923	1919	1920	1921	1922	1923
(1) Labouring and Artisan,	36,661	1637	1609	1260	1110	1113	4.5	4.4	3.4	3.0	3.0
(2) Commercial, . . .	8,522	325	288	314	334	286	3.8	3.4	3.7	3.9	3.4
(3) Professional, . . .	4,516	273	224	176	170	165	6.0	5.0	3.9	3.8	3.6

B. WOMEN.

Occupation.	No. employed in Aberdeen (Census 1921).	No. of Marriages Registered in Aberdeen.					Percentage to No. employed.				
		1919	1920	1921	1922	1923	1919	1920	1921	1922	1923
(1) Domestic Servants,	4391*	502	397	347	374	326	11.4	9.0	7.9	8.5	7.4
(2) Workers in Workshops and Factories (excluding Dressmakers and Milliners), . . .	7628	720	707	509	466	517	9.4	9.3	6.7	6.1	6.8
(3) Saleswomen (including Dealers),	2787	199	221	208	158	158	7.1	7.9	7.5	5.7	5.7
(4) Teachers and Nurses,	1810	92	102	99	100	77	5.1	5.6	5.5	5.5	4.3
(5) Clerks and Typists,	3159	122	127	133	121	139	3.9	4.0	4.2	3.8	4.4
(6) Dressmakers and Milliners,	1646	112	108	118	79	61	6.8	6.6	7.2	4.8	3.7

* Including waitresses and laundry workers (excluding factory laundries).

Opportunity and Chance of Marriage.—Analysing the number of marriages and not percentages, it was formerly argued that the men who most frequently married were those engaged in occupations in which a period of training is not required or is completed at a comparatively early age of life, with the result that the rates of wages for adults in such occupations are early available, thus permitting of marriage. So, also, marriages were commonly found to be most rare among men occupied in such work as necessitates training to a later age-period, and whose opportunity of earning an income permitting of marriage is accordingly delayed. Analysing marriage returns some forty-five years ago, Dr. Farr demonstrated, among other things, that, while the number of marriages in a nation fluctuated independently of external causes, marriage returns increased as the result of peace after war and during periods of prosperity, and diminished during war and during periods of industrial depression. At the same time Farr demonstrated that in periods of industrial depression the decline in the marriage-rate affected almost wholly the labouring and artisan population. At first sight, the Aberdeen marriage returns relating to the recent war and post-war periods appear to support Farr's deductions. Thus the marriage-rates of 13.9 and 13.2 per 1,000 of the population in Aberdeen in 1919 and 1920 respectively had fallen to 10.9, 10.1, and 9.7 per 1,000 of population in 1921, 1922 and 1923 respectively; and the above Table clearly indicates that the economic conditions affecting the men employed as labourers and artisans are probably responsible for a large part of the decline in the marriage-rate in 1922 and 1923. When, however, the figures of the percentages of marriages of men employed in different occupations, as set forth in Table IIIA., are analysed, it is seen that the percentage of marriages is greatest in the professional classes, and that the influence of war and trade depression affects all classes.

As regards women, the chance of marriage would at first sight appear to be greatest among domestic servants, who provide the highest percentage of marriages. It is not possible, however, to determine the relative influence of status on the one hand, and occupation on the other hand, in producing this high percentage incidence of marriage among domestic servants, since those women who remain at home until they marry, and who are presumably occupied in domestic work, are included in the Registrar-General's group of "no stated occupation", and are accordingly not available for comparison. The factors determining the chance of marriage in the various occupation groups are obviously very complex, but information concerning such factors as age distribution and social circumstances in the various occupational groups is too meagre to permit of detailed analysis.

DEATHS.

(Table II.)

The total number of deaths during 1922 was 2,595, equivalent to a death-rate of 16·2 per 1,000 of the population; and for 1923, 2,157, equal to a death-rate of 13·4. For the quinquennium 1917-1921, the average number of deaths was 2,424, with a rate of 15·0.

These rates have been obtained after adjustment for the transfers, between this or other districts, of deaths of persons occurring in districts outside their usual place of residence. In Table II., and in all the other tables in which deaths or death-rates are given, the numbers have been corrected for these transfers since the beginning of 1904.

The death-rate for 1922 was the highest recorded since 1915, when the rate was 18·8. The death-rate for 1923 is the lowest Aberdeen death-rate yet recorded, the previous lowest being one of 14·2, which occurred in 1910. The Scottish death-rate for the year 1923 was 12·9, being also the lowest on record. The average rate for the ten years 1912-1921 was 15·8. At the commencement of civil registration, about 70 years ago, the death-rate in Aberdeen was about 24 to 25, so that the rate at the present time is slightly more than half of what it was in these earlier times.

The *average age at death* of all persons dying during 1922 was 41·5 years, and during 1923 the average age was 45·1. In the 1917-1921 quinquennium it was 41·9 years. As the average for the five years 1891-1895 was 32·9 years, there has been since 1891-1895 an extension of the age at death of about ten years. The average age at death of 45·1 years in 1923 was the highest recorded since civil registration began.

Excess of Birth-Rate over Death-Rate.—In Table II. will be found a column giving the excess of the birth-rate over the death-rate since the commencement of registration. The excess in 1922 was 8·5, and in 1923 it was 10·0. For the quinquennium 1917-1921 the excess was 7·5. The excess of birth-rate over death-rate in the 1912-1921 decennium averaged 7·2. The usual excess of birth-rate over death-rate for many years prior to 1911 was about 11 to 14.

TABLE IV.—ABERDEEN.—MORTALITY FROM ALL CAUSES AT VARIOUS AGE-PERIODS*
(per 1,000 of population at each age).

Year.	INFANTILE MORTALITY. Deaths of Infants under 1 year per 1,000 Births.	AGE PERIOD.						All Ages.
		0—5 years. (Pre-School Period.)	5—15 years. (School Period.)	15—25 years. (Adolescent Period.)	25—45 years. (Early Mature Period.)	45—65 years. (Late Mature Period.)	65 years and upwards. (Post-mature Period.)	
1923 . . .	104	37·8	1·3	2·8	4·8	15·5	82·1	13·4
1922 . . .	133	56·1	2·0	2·8	5·9	17·4	87·4	16·2
1921 . . .	108	37·5	2·4	3·6	5·9	16·9	82·2	14·3
1920 . . .	121	49·6	2·2	3·8	6·7	16·1	73·6	14·9
1919 . . .	118	36·6	3·2	4·4	6·7	17·2	91·7	15·3
1918 . . .	143	41·9	3·6	5·4	7·8	17·3	83·8	15·9
1917 . . .	139	41·6	2·9	3·2	6·2	17·5	80·6	14·7
Mean of 1917-1921 (Five years).	126	41·4	2·9	4·1	6·7	17·0	82·4	15·0
1916 . . .	112	35·1	2·8	3·4	6·4	18·9	84·1	14·6
1915 . . .	173	62·5	4·5	4·1	7·0	21·3	91·8	18·8
1914 . . .	121	43·0	5·6	4·5	7·2	20·4	88·3	16·8
1913 . . .	153	55·7	3·9	4·5	6·9	19·4	86·1	17·4
1912 . . .	127	41·9	2·9	3·4	6·5	20·2	87·4	15·6
Mean of 1912-1916 (Five years).	137	47·6	3·9	4·0	6·8	20·0	87·5	16·6
1911-1915 .	143	49·7	4·0	4·1	6·7	20·0	86·5	16·8
1906-1910 .	128	42·5	2·9	3·5	7·0	19·5	84·2	15·4
1901-1905 .	143	52·2	3·1	4·6	7·4	21·3	83·3	17·1
1896-1900 .	144	54·2	3·4	5·0	9·2	22·2	81·6	18·1
1891-1895 .	147	57·5	4·5	5·8	9·3	22·7	86·5	19·3
1886-1890 .	140	52·9	4·8	7·0	10·5	22·9	88·1	20·2
1881-1885 .	126	50·9	5·4	6·4	10·1	23·8	86·3	19·8
1876-1880 .	129	53·1	6·2	7·7	11·3	22·1	86·6	20·9
1871-1875 .	133	57·5	7·7	8·2	12·0	22·6	91·5	22·4
1866-1870 .	133	68·0	7·2	8·9	12·4	22·2	91·2	23·5
1861-1865 .	130	68·9	8·1	10·5	13·4	24·7	98·7	24·9
1856-1860 .	126	67·8	9·3	9·8	12·6	21·8	97·5	24·1

* Corrected for transferred deaths in 1904 and subsequent years.

ANALYSIS OF THE DEATH-RATE.

Mortality in Relation to Age and Causes (Tables IV., V., VI., VII., and VIII.).

Infant Mortality.—During the year 1922, there were 527 deaths among children under one year of age, and 391 during 1923, as compared with an average of 448 during the 1917-1921 quinquennium. The infant-mortality rate expressed as deaths per 1,000 births, was 133 during 1922 and 104 during 1923, as against an average of 126 during the 1917-1921 quinquennium. The excessive infantile mortality during 1922 as compared with the preceding quinquennium was wholly due to the considerable prevalence of whooping-cough early in 1922, and the extensive epidemic of measles that occurred in the later months of the year. Thus, in 1922, whooping-cough caused 48 deaths in infants, as compared with an annual average of 14 deaths in the preceding quinquennium; measles caused 40 deaths, as compared with an annual average of 10 deaths in the preceding quinquennium; and bronchitis and pneumonia were responsible for 111 deaths of infants in 1922, as compared with an annual average of 88 deaths in the preceding five years. It is a common experience to find that deaths of infants registered as due to diseases of the respiratory system are markedly increased during the epidemic prevalence of whooping-cough and measles. But even if the excess of deaths due to measles and whooping-cough and the complications associated with them are deducted, the infant-mortality rate for Aberdeen nevertheless remains abnormally high. It is difficult to find a satisfactory explanation of the continual excessive rate of infant-mortality in Aberdeen as compared with the distinctly lower infantile mortality figures in the industrial towns of the west, such as Greenock, Paisley, and Glasgow, wherein the environmental conditions are known to be of an inferior order; but it is noteworthy that after eliminating excessive mortality due to intercurrent epidemics of whooping-cough and measles, the main causes of the higher mortality in Aberdeen are developmental diseases.

In both years under review, as appearing in Table V., prematurity caused 92 deaths. More than half of these deaths took place within the first week of birth. In the 1917-1921 quinquennium there was an average of 90 deaths from prematurity.

In 1922, marasmus, debility, and icterus caused 91 deaths, and in 1923, 101 deaths. More than half of these deaths occurred during the first three months of life. There was an average of 90 deaths from these diseases during the preceding five years.

Pneumonia caused 72 deaths in 1922 and 36 deaths in 1923, as compared with an annual average of 54 deaths for the preceding quinquennium. The excessive number of deaths from pneumonia in 1922, as already indicated, was due to the prevalence of whooping-cough and measles.

In 1922, whooping-cough caused 48 deaths, and in 1923, 3 deaths, as compared with an annual average of 14 deaths during the preceding five years.

Measles caused 40 deaths in 1922, and 12 deaths in 1923, as compared with an annual average of 10 deaths in the preceding quinquennium.

Bronchitis caused 39 deaths in 1922, and 30 deaths in 1923, as compared with an average of 34 during the preceding five years.

TABLE V (A).—ABERDEN.—CAUSES OF DEATH AMONG CHILDREN UNDER FIVE YEARS OF AGE.—Year 1922.
(Corrected for transferred deaths.)

CAUSES OF DEATH.	AGE.																	Average for Preceding 5 Years. (1917-21.)	
	FIRST YEAR.										SECOND TO FIFTH YEARS.								
	First Four Weeks.				First Three Months.			The Four Quarters.			Total	SECOND TO FIFTH YEARS.				Total			
	First Four Weeks.				First Three Months.			The Four Quarters.			Total	SECOND TO FIFTH YEARS.				Total			
	0-1	-2	-3	-4	0-1	-2	-3	0-3	-6	-9	-12	Total	-2	-3	-4	-5	Total		
Congenital Malformations	6	...	1	1	9	2	...	11	1	2	14	1	2	...	...	3	10	1
Prematurity	58	19	5	1	83	7	1	91	...	...	92	...	...	...	...	...	90	0.2
Atelectasis and Diseases of Early Infancy	13	1	...	2	16	...	...	16	...	...	16	...	...	...	...	...	19	...
Marasmus, Debility, and Icterus	8	4	4	6	22	14	14	50	36	4	91	2	...	...	...	2	90	1
Diseases of Digestive System, incl. Diarrhoea . . . . .	...	2	...	1	3	7	2	12	14	4	36	8	1	...	...	9	48	13
Urinary Diseases . . . . .	...	...	...	...	...	1	...	1	...	...	1	1	1	...	...	2	0.4	1
Diseases of Circulation . . . . .	...	...	...	...	1	...	...	1	...	...	1	...	...	...	2	2	1	...
Pneumonia . . . . .	...	2	...	4	6	6	5	17	15	20	72	35	9	2	...	46	54	35
Bronchitis . . . . .	...	1	...	3	4	4	3	11	15	9	39	6	2	...	...	8	34	7
Convulsions	4	3	1	...	8	2	3	13	1	3	19	2	...	1	...	3	22	8	
Inflammation of Brain and Membranes . . . . .	...	...	...	...	...	...	...	...	2	1	4	...	...	...	...	...	5	5
Epidemic Cerebro-Spinal Meningitis . . . . .	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	1
Measles . . . . .	...	...	...	2	...	...	...	...	5	14	40	61	20	8	4	93	10	23
Whooping Cough . . . . .	...	...	...	...	2	4	4	10	15	8	48	32	12	6	1	51	14	17
Scarlet Fever . . . . .	...	...	...	...	...	...	...	...	...	1	...	1	2	...	3	6	0.2	3
Diphtheria . . . . .	...	...	...	...	...	...	...	...	...	...	1	2	6	...	1	9	2	13
Typhoid Fever . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis of { (a) Brain (b) Abdomen (c) Lungs (d) Other forms . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	...	...	...	...	...	...	...	...	1	...	2	6	3	...	...	9	4	12
	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	4	1	9
	...	...	...	...	...	...	...	...	...	1	1	2	3	2	...	6	2	6
Syphilis . . . . .	...	...	1	2	3	5	2	10	4	...	14	1	...	...	...	1	13	0.2
Burns and Scalds . . . . .	...	...	...	...	...	...	...	...	...	...	...	2	3	3	...	8	2	7
Suffocation . . . . .	...	...	1	...	2	...	...	2	1	...	3	...	...	...	...	...	4	0.2
Other Accidents . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	2	0.2	3
Other Causes	4	...	...	1	5	7	4	16	4	3	27	11	4	1	...	16	20	15
ALL CAUSES	93	32	13	23	164	59	38	261	115	72	79	527	177	71	22	14	284	448	184
Average for preceding 5 years	92	22	23	19	161	48	44	253	101	49	45	448	100	40	26	18	184		

* This column includes all deaths in preceding columns.

TABLE V (B).—ABERDEEN.—CAUSES OF DEATH AMONG CHILDREN UNDER FIVE YEARS OF AGE.—Year 1923.
(Corrected for transferred deaths.)

CAUSES OF DEATH.	A G E.																Average for Preceding 5 Years. (1918-22.)	
	FIRST YEAR.										SECOND TO FIFTH YEARS.				Total			
	First Four Weeks.				First Three Months.			The Four Quarters.			Total							
	First Four Weeks.				First Three Months.			The Four Quarters.										
	0-1	-2	-3	-4	*0-1	-2	-3	*0-3	-6	-9		-12						
Congenital Malformations	3	1	1	1	6	2	...	8	...	1	...	9	...	...	...	...	11	2
Prematurity	70	11	6	...	87	3	1	91	1	...	...	92	...	...	...	...	99	...
Atelectasis and Diseases of Early Infancy	8	1	2	...	11	1	...	12	...	...	...	12	...	...	...	...	19	...
Atrophy, Debility, and Icterus	13	7	8	7	37	12	16	65	29	5	2	101	2	1	...	...	97	2
Diseases of Digestive System, incl. Diarrhoea	1	1	1	...	3	4	7	14	14	5	3	36	4	...	1	1	42	10
Urinary Diseases . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	2
Diseases of Circulation . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	0.4
Pneumonia . . . . .	...	...	1	2	4	1	2	7	12	6	11	36	19	5	2	1	27	36
Bronchitis . . . . .	...	...	...	4	4	1	4	9	11	4	6	30	1	2	1	...	4	6
Convulsions	3	...	...	...	3	...	2	5	5	4	5	19	5	...	...	...	21	7
Inflammation of Brain and Membranes . . . . .	...	...	...	...	...	...	...	...	3	...	1	4	4	...	...	...	5	3
Epidemic Cerebro-Spinal Meningitis . . . . .	...	...	...	...	...	...	...	...	...	...	1	1	1	1	...	...	1	1
Measles . . . . .	...	...	...	...	...	...	...	...	1	6	5	12	17	10	...	1	14	30
Whooping Cough . . . . .	...	...	...	...	...	...	...	...	2	...	1	3	1	1	...	...	20	22
Scarlet Fever . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	0.2	2
Diphtheria . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	4	1	...	...	2	13
Typhoid Fever . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis of— (a) Brain (b) Abdomen (c) Lungs (d) Other forms . . . . .	...	...	...	...	...	...	...	...	4	1	...	5	11	4	6	...	3	9
	...	...	...	...	...	...	...	...	...	1	2	3	3	1	3	...	1	6
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	5
	...	...	...	...	...	...	...	...	1	...	1	2	...	1	...	...	1	3
Syphilis	1	1	1	1	4	4	...	8	3	1	...	12	...	1	...	...	13	0.4
Burns and Scalds . . . . .	...	...	...	...	...	...	...	...	...	...	1	1	11	7	4	...	1	7
Suffocation	1	...	...	...	1	...	...	1	1	...	...	2	...	2	...	...	3	0.2
Other Accidents . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.2	3
Other Causes	1	...	...	2	3	2	1	6	2	2	1	11	3	1	...	1	22	17
ALL CAUSES	101	22	20	17	163	30	33	226	89	36	40	391	89	40	17	10	473	187
Average for preceding 5 years	98	26	21	20	170	52	43	265	106	53	49	473	105	42	23	17		

* This column includes all deaths in preceding columns.

Diseases of the digestive system, including diarrhoea, caused, both in 1922 and 1923, 36 deaths, as against an average of 48 for the 1917-1921 quinquennium. The main reason, however, for the remarkable decline in infant deaths from diseases of the digestive system during recent years has been the absence of zymotic diarrhoea. The attempt to formulate a theory that will account for the disappearance of this specific infectious disease during the past decennium provides a fascinating problem for the epidemiologist.

Another important cause of death was convulsions, which led to 19 deaths of infants both in 1922 and 1923. The average number of deaths was 22 for the preceding five years. Convulsions are, of course, a symptom of disease, and not a disease in themselves. The frequency of convulsions, and their association with death in certain diseases such as whooping-cough and gastro-intestinal intoxications, supported the old idea that convulsions are a separate entity and one of the chief complications causing death in such diseases. There is now good reason to believe that convulsions, although a reflex phenomenon due to a variety of intoxications, are really an index of the conditions of the nervous system at each point of growth. Diseases associated with convulsions become less mortal with each year of life, and the curve of the death-rate from convulsions decreases uniformly from birth onwards. So far it may be said that the incidence of convulsions is intimately associated with the physiological processes of the growing child.

Atelectasis and diseases of early infancy were certified as the cause of 16 infant deaths in 1922 and 12 deaths in 1923, as compared with a yearly average of 19 deaths in the preceding quinquennium. Congenital malformations accounted for 14 deaths in 1922 and 9 deaths in 1923. Syphilis caused 14 deaths in 1922 and 12 deaths in 1923. Suffocation was the cause of 3 deaths in 1922 and 2 deaths in 1923, as compared with an average of 4 deaths in the preceding five years.

In Table VI. the causes of death are somewhat differently grouped from those in Table V. Causes such as prematurity, congenital defects, and diseases of early infancy, which are probably to be associated with prenatal or parturient conditions, are brought together into one group; while another group is constituted by diseases of the digestive system, wasting and debility, and convulsions—causes which may be dependent on the care of the infant after birth. In 1922 and 1923, it will be observed that there was a very considerable fall in both groups, the fall being more marked in the latter than in the former group. As contrasted with the averages for the preceding ten years, the first group showed scarcely any decline, the deaths for 1922 being 122, and for 1923, 113, as against an average of 127. The latter group, however, showed a more decided fall, the deaths numbering 146 in 1922 and 156 in 1923, as compared with an average of 169 in the preceding decennium.

The Table also allows of a ready comparison being made between the past two years and the preceding ten years, in respect not only of the two groups referred to but also in regard to certain other important causes of death, including each of the principal zymotics. It will be seen that deaths from lung diseases (bronchitis and pneumonia), measles, and whooping cough were much above the average in 1922. Deaths from diphtheria were much below the average in both years, as were also, although in less degree, deaths from tuberculosis.

TABLE VI.—ABERDEEN.—INFANT MORTALITY.—Years 1912-1923.
(Corrected for transferred deaths.)

YEAR.	No. of Births.	Births per 1,000 of Population.	Deaths of Infants under 1 year.	Deaths of Infants under 1 year per 1,000 Births.	No. of Survivors.	Survivors per 1,000 of Population.	No. of Deaths among Children Dying under 1 Year of Age from Chief Causes.										No. of Deaths from All Causes at Ages		
							Prematurity, Congenital Defects, and Dis. of Early Infancy.	Dis. of Digest. System, Wasting and Debility, Convulsions.	Bronchitis and Pneumonia.	Common Zymotic Diseases.						Syphilis.				Suffocation.
										Measles.	Whooping Cough.	Diphtheria.	Scarlet Fever.	Tuberculosis.					
1923 . .	3766	23.4	391	104	3375	21.0	113	156	66	12	3	0	0	10	2	123	192	76	
1922 . .	3969	24.7	527	133	3442	21.4	122	146	111	40	48	1	0	8	3	125	251	151	
1921 . .	4254	26.6	460	108	3794	23.7	129	178	94	2	2	3	0	2	2	130	254	76	
1920 . .	4868	30.3	591	121	4277	26.7	161	206	123	15	20	1	1	9	3	153	337	101	
1919 . .	3379	21.0	399	118	2980	18.5	135	126	72	1	12	4	0	8	6	134	182	83	
1918 . .	2721	16.8	390	143	2331	14.4	91	147	72	12	19	2	0	9	2	78	213	99	
1917 . .	2880	17.8	399	139	2481	15.3	76	142	81	20	17	2	0	15	6	76	210	113	
Average } 1917-1921 }	3620	22.5	448	126	3173	19.7	118	160	88	10	14	2	0.2	8	4	114	239	94	
1916 . .	3546	21.8	398	112	3150	19.4	122	124	59	5	15	5	1	6	9	116	200	82	
1915 . .	3784	23.2	654	173	3130	19.2	123	216	132	44	40	7	8	22	12	127	306	221	
1914 . .	4006	24.5	487	121	3519	21.5	137	183	78	2	8	5	4	14	8	132	239	116	
1913 . .	3852	23.4	591	153	3261	19.8	148	198	111	47	15	7	3	11	7	158	250	183	
1912 . .	4145	25.1	530	127	3615	21.9	143	164	102	12	30	4	1	9	8	142	275	113	
Average } 1912-1916 }	3867	23.6	532	137	3335	20.4	135	177	96	22	22	6	3	12	9	135	254	143	
Average } 1912-1921 { ten years }	3744	23.1	490	132	3254	20.0	127	169	92	16	18	4	2	11	6	125	247	119	

In this Table the infants have been divided, in respect of age, into three specially arranged groups, namely, one of under two weeks old, representing the period most reflecting the effect of ante-natal conditions; another of between two weeks and under six months, covering the period before the commencement of teething and increased pancreatic activity, during which, in ordinary circumstances, the infant should continue to be wholly dependent for its food on the mother's milk; and third, the remaining six months of the first year of life, during which, as a rule, the use of other kinds of food, supplementary or substitutionary, begins. It will be seen that at the earliest period there was in 1922 and 1923, as compared with the average for the preceding ten years, practically no difference in the number of deaths, as has already been noted for the prematurity group of diseases. For 1922, during the second period the number of deaths was slightly increased as compared with the ten years' average, and during the third period the increase was very great, amounting to 27 per cent. As has already been indicated, these increased deaths in the later months of the first year of life are wholly attributable to the prevalence of whooping-cough and measles. During 1923, for these two last mentioned age groups the number of deaths was considerably below the average for the 1912-1921 decennium.

The infant-mortality rate during the year 1923 (104) is the lowest yet recorded in Aberdeen, the previous lowest being one of 108 in 1921. This lowered infant-mortality rate is accounted for by the fact that during 1923 there were no epidemics of infectious diseases, with the result that the numbers of deaths from measles, whooping-cough, and respiratory diseases were comparatively low.

In Table VI., also, two interesting columns show the number of infants surviving at the end of one year from birth, and the proportion which the survivors bear to the population. This rate, which represents the net gain to the population after the perils peculiar to the first year of life have been passed, was, in 1922, 21·4 per 1,000 of population, and in 1923, 21·0, as compared with 14·4 for 1918 (the year of low birth-rate and high infantile mortality), as compared with 26·7 for 1920 (the year of high birth-rate and reduced infantile mortality), and as compared with an average of 20·0 for the ten years 1912-1921. This rate is a more exact indication than the birth-rate of the real internal addition to the population.

Mortality at Pre-School Age-Period (1 to 5 years), excluding Infant Period (Tables IV., V., and VII.).—The number of deaths at this age-period during 1922 was 284, equivalent to a death-rate of 26·6 per 1,000 of the population at this age, and during 1923, 156, equivalent to a death-rate of 14·6. The average rate for the decennium 1912-1921 was 18·7.

In 1922, the excessive mortality was wholly due to deaths from measles and whooping-cough. The lowered mortality in 1923 was due to the absence of these diseases in epidemic form. During 1923, there were 21 deaths from tubercular meningitis, as compared with an average of 9 for the preceding quinquennium; and 22 deaths from burns and scalds, as compared with an average of 7.

Mortality at School Age-Period (5 to 15 years) (Tables IV. and VII.).—The deaths at this age-period during the year 1922 amounted to 62, or 2·0 per 1,000 of

the population at this age, and during 1923 there were 40 deaths, equivalent to a rate of 1.3. As will be seen from Table IV., the mortalities at this age-period during the years 1922 and 1923 were the lowest recorded since civil registration was begun. Not only so, but the lowering of this mortality is noticeable throughout the quinquennium 1917-1921, the average mortality being 2.9 per 1,000 of the population at this age, as against an average yearly mortality of 3.9 during the 1912-1916 quinquennium. The lowering of mortality is particularly noticeable in the group of ordinary zymotic diseases. It is obvious, therefore, that while there has been no increase in the tuberculosis death-rate in this age-period in 1922 and 1923 to correspond with the increase noted in the earlier years of life, nevertheless the remarkable and continuous diminution of grave tuberculous disease in children in the 5-15 year period has meantime been arrested.

Mortality at Adolescent Age-Period (15 to 25 years) (Tables IV. and VII.).—The deaths at this age-period both for 1922 and 1923 were 89, or 2.8 per 1,000 of the population, being the lowest death-rate recorded at this age-period since civil registration was begun. The average mortality-rate for the preceding ten years was 4.0 per 1,000 of the population. The lowering of this mortality in 1922 and 1923 was due to the diminution of the common zymotics.

Mortality at Early-Mature Age-Period (25 to 45 years) (Tables IV. and VII.).—The number of deaths at this age-period in 1922 was 254, giving a rate of 5.9 per 1,000 of the population at this period, and in 1923 there were 209 deaths, equal to a rate of 4.8. These rates are substantially below the average for the 1917-1921 quinquennium, which was 6.7. The rate for 1923 is the lowest recorded since civil registration began.

Mortality at Late-Mature Age-Period (45 to 65 years) (Tables IV. and VII.).—The deaths at this period in 1922 were 515, with an equivalent rate of 17.4 per 1,000 of the population at this period, and in 1923 there were 459 deaths, equal to a rate of 15.5. During the 1917-1921 quinquennium the rate was 17.0. During 1922 there was a very considerable increase of deaths from zymotic diseases, due entirely to influenza, which prevailed early in the year. The deaths from circulatory diseases in both years show a substantial decrease.

Mortality at Post-Mature Age-Period (65 years and upwards) (Tables IV. and VII.).—The deaths at this period in 1922 amounted to 864, with an equivalent rate of 87.4 per 1,000 of the population at this period, and in 1923 there were 813 deaths, equal to a rate of 82.1. The average for the 1917-1921 quinquennium was 82.4. By far the most common cause of death at this period was diseases of the circulatory system, accounting for about one-fourth of all the deaths. Malignant disease was responsible for about one-eighth of the deaths, and was above the average. In 1922, deaths from zymotics were distinctly above the average, the increase being due entirely to deaths from influenza in the early months of the year.

Mortality at All Ages (Tables II., IV., and VII.).—The death-rate from all causes has already been referred to.

TABLE VII. (A).—ABERDEEN.—MORTALITY AT VARIOUS AGE-PERIODS FROM VARIOUS CAUSES.
(Corrected for transferred deaths.)

AGE.	ALL CAUSES.	Zymotic Diseases.			Tuber- culous Diseases.		Respiratory Diseases.			Diseases of Circulatory System	Diseases of Genito- Urinary System.	Nervous Diseases.		Dis. of Digest. Syst. incl. Diarrhoea.	Malignant Diseases.	Developmental Diseases(ex. old age)	Accident and Violence.	Debility, Atrophy, Inanition.		Miscellaneous.	
		Ordinary.	Venereal.	Septic.	Respiratory.	Other Tuberculous	Pneumonia.	Bronchitis.	Other Respiratory.			Cereb. Haemo., Thrombosis Em- bolism, & Hemip.	Convulsions					Other Nervous.	Under age of 1 year.		Above age of 65 years.
A.—NUMBER OF DEATHS—YEAR 1922.																					
Under 1 year,	527	99	16	2	2	6	72	39	1	1	1	2	19	5	36	0	116	3	91	0	16
1—5 years,	284	165	1	2	6	17	46	9	2	2	2	0	3	2	8	0	3	11	0	0	5
5—15 „	62	19	0	0	6	5	5	1	1	6	2	0	0	5	4	0	2	4	0	0	2
15—25 „	89	4	0	2	28	7	3	1	0	9	3	0	0	5	5	4	0	8	0	0	10
25—45 „	254	16	2	4	61	2	17	2	3	24	17	6	0	17	14	25	0	16	0	0	28
45—65 „	515	28	0	4	36	3	32	15	9	78	37	58	0	23	32	108	0	14	0	0	38
65+ „	864	42	1	1	4	1	32	92	18	187	43	126	0	14	26	109	0	23	0	116	29
ALL AGES, .	2595	373	20	15	143	41	207	159	34	307	105	192	22	71	125	246	121	79	91	116	128

B.—DEATH-RATE PER 100,000 OF POPULATION AT EACH AGE—YEAR 1922.

Under 1 year,	13971	2625	424	53	53	159	1909	1034	27	27	27	53	504	133	954	0	3075	80	2413	...	424
1—5 years,	2656	1543	9	19	56	159	430	84	19	19	19	0	28	19	75	0	28	103	...	...	47
5—15 „	199	61	0	0	19	16	16	3	3	19	6	0	0	16	13	0	6	13	...	...	6
15—25 „	277	12	0	6	87	22	9	3	0	28	9	0	0	16	16	12	0	25	...	...	31
25—45 „	586	37	5	9	141	5	39	5	7	55	39	14	0	39	32	58	0	37	...	...	65
45—65 „	1742	95	0	14	122	10	108	51	30	264	125	196	0	77	108	365	0	47	...	...	129
65+ „	8737	425	10	10	40	10	324	930	182	1891	435	1274	0	142	263	1102	0	233	...	1173	293
ALL AGES, .	1616	232	12	9	89	26	129	99	21	191	165	120	14	44	78	153	75	49	...	...	80

C.—DEATH-RATE PER 100,000 OF POPULATION AT EACH AGE—AVERAGE FOR TEN YEARS—1912-1921.

Under 1 year,	13150	1188	357	30	56	228	1465	1015	113	21	16	16	744	218	1660	3	3255	210	2132	...	425
1—5 years,	1868	786	4	2	46	199	316	52	15	7	15	5	75	51	132	5	11	88	...	...	60
5—15 „	340	112	0.3	2	26	51	25	2	2	15	9	1	2	22	25	1	1	23	...	...	21
15—25 „	403	46	1	2	123	25	32	2	5	32	9	2	0	26	24	6	0.6	30	...	...	38
25—45 „	674	62	2	4	166	14	52	12	6	65	38	16	0.2	44	36	45	0.2	49	...	...	63
45—65 „	1852	69	4	14	134	13	106	93	29	330	129	227	0	76	106	321	0	75	...	...	127
65+ „	8454	235	4	33	65	16	382	922	121	1735	444	1357	0	165	315	920	0	175	...	1298	319
ALL AGES, .	1584	164	10	7	106	43	124	100	19	184	63	122	24	53	104	121	76	58	...	...	83

TABLE VII. (B).—ABERDEEN.—MORTALITY AT VARIOUS AGE-PERIODS FROM VARIOUS CAUSES.
(Corrected for transferred deaths.)

Age.	ALL CAUSES.	Zymotic Diseases.			Tuber- culous Diseases.		Respiratory Diseases.			Diseases of Circulatory System.	Diseases of Genito-Urinary System.	Nervous Diseases.		Dis. of Digest. Syst. incl. Diarrhoea.	Malignant Diseases.	Developmental Diseases (ex. old age).	Accident and Violence.	Debility, Atrophy, Inanition.		Miscellaneous.	
		Ordinary.	Veneral.	Septic.	Respiratory.	Other Tuberculous	Pneumonia.	Bronchitis.	Other Respiratory.			Cereb. Haemo- Thrombosis, Em- bolism, & Hemip.	Convulsions					Other Nervous.	Under age of 1 year.		Above age of 65 years.
A.—NUMBER OF DEATHS—YEAR 1923.																					
Under 1 year,	391	16	12	4	0	10	36	30	2	0	0	0	19	5	36	0	107	3	101	0	10
1—5 years,	156	38	1	0	1	32	27	4	1	2	2	0	6	5	6	0	0	25	0	0	6
5—15 „	40	6	0	0	1	10	4	0	1	3	1	0	0	1	4	0	2	6	0	0	1
15—25 „	89	4	0	0	32	8	0	1	2	7	2	0	0	7	5	2	0	12	0	0	7
25—45 „	209	4	4	4	59	4	12	0	3	23	7	1	0	16	14	11	1	11	0	0	35
45—65 „	459	3	0	2	30	3	25	13	5	65	41	51	0	21	41	102	0	19	0	0	38
65+ „	813	6	0	3	5	1	17	60	18	213	45	136	0	8	32	96	0	27	0	123	23
ALL AGES, .	2157	77	17	13	128	68	121	108	32	313	98	188	25	63	138	211	110	103	101	123	120
B.—DEATH-RATE PER 100,000 OF POPULATION AT EACH AGE—YEAR 1923.																					
Under 1 year,	10355	424	318	106	0	265	953	794	53	0	0	0	503	132	953	0	2834	79	2675	...	265
1—5 years,	1458	355	9	0	9	299	252	37	9	19	19	0	56	47	56	0	0	234	...	...	56
5—15 „	128	19	0	0	3	32	13	0	3	10	3	0	0	3	13	0	6	19	...	...	3
15—25 „	277	12	0	0	100	25	0	3	6	22	6	0	0	22	15	0	6	37	...	...	22
25—45 „	482	9	9	9	136	9	28	0	7	53	16	2	0	37	32	25	2	25	...	...	81
45—65 „	1551	10	0	7	101	10	84	44	17	220	139	172	0	71	139	344	0	64	...	...	128
65+ „	8215	61	0	30	51	10	172	606	182	2152	455	1374	0	81	323	970	0	273	...	1243	232
ALL AGES, .	1342	48	11	8	80	42	75	67	20	195	61	117	16	39	86	131	68	64	...	...	75
C.—DEATH-RATE PER 100,000 OF POPULATION AT EACH AGE—AVERAGE FOR TEN YEARS—1913-1922.																					
Under 1 year,	13113	1312	351	35	59	223	1494	1005	99	24	16	21	691	201	1580	3	3205	193	2208	...	394
1—5 years,	1973	876	3	4	50	199	327	56	15	7	15	5	73	48	129	4	14	91	...	...	59
5—15 „	331	110	0.3	1	25	47	25	3	2	16	10	1	2	22	24	0.6	2	22	...	...	18
15—25 „	396	45	0.6	3	121	26	30	2	4	31	8	0.9	0	25	24	7	0.6	29	...	...	38
25—45 „	667	62	2	5	166	13	51	12	6	62	40	16	0.2	43	35	45	0.2	46	...	...	61
45—65 „	1825	75	2	14	133	12	104	58	28	321	126	222	0	72	101	329	0	68	...	...	128
65+ „	8495	267	4	33	61	14	369	925	118	1762	431	1358	0	160	298	929	0	181	...	1274	310
ALL AGES, .	1590	175	10	8	105	42	124	101	18	186	63	123	22	51	100	125	75	56	...	...	82

The percentage fall in the death-rate from the decade of 1861-1870 up to the end of 1923 is for each age-period as follows, namely:—45 for the pre-school (including the infant) period, 83 for the school period, 71 for the adolescent period, 63 for the early-mature period, 34 for the late-mature period, and 13 for the post-mature period.

In 1922, the four chief causes of death were as follows:—Ordinary zymotics, 373 deaths; diseases of the circulatory system, 307; malignant diseases, 246; and pneumonia, 207.

During 1923, the diseases responsible for the largest number of deaths were as follows:—Diseases of circulatory system, 313 deaths; malignant diseases, 211; cerebral hæmorrhage, 188; and diseases of the digestive system, 138.

VARIATIONS IN MORTALITY FROM SELECTED CAUSES SINCE 1856.

The variations in the mortality from selected causes at all ages since the year 1856—the second year of civil registration—can be conveniently followed in Table VIII. Table VIII. gives the death-rate from each of the principal infectious diseases, including tuberculosis, since the commencement of registration. In Table IX. the number of cases and deaths for each disease is stated for the successive months of the years 1922 and 1923. In Table X. the cases and deaths, together with the case-mortality, or percentage of deaths to sicknesses, in certain diseases, are supplied for each of the years 1913 to 1923, as also the annual averages for the decennia 1903-1912 and 1913-1922 respectively.

Infectious Diseases.—These, including tuberculosis, are dealt with in greater detail in the part of the report devoted especially to the morbidity, mortality, and prevention of infectious diseases.

Cancer and Other Malignant Diseases.—The death-rate has risen from about 56 per 100,000 of the population in the first years of registration to a rate of 153 in 1922 and had thus become nearly three times higher. This rate for 1922 is very distinctly the highest on record. For 1923, the rate had fallen to 131. During the 1917-1921 quinquennium, the rate was 121. This intensified increase in the cancer mortality in 1922 will be further referred to when comparison is made between Aberdeen and other large towns in Scotland in respect of some of the more important features of their vital statistics. The cancer death-rate remained practically unaltered for the first twenty years of registration, but from 1875 it began to grow fairly rapidly, and since then has almost trebled itself.

It is a somewhat curious fact that the mid seventies, which marked the beginning of the modern decline in several diseases, was, on the contrary, associated with the commencement of the increase of malignant diseases. Research in regard to cancer has continued to be actively prosecuted, and, while no results have yet been achieved of any practical moment in the cure of the disease, a notable advance has been made in preventing recurrence after operation and in the alleviation of certain inoperable cases by the application of X-rays and radium therapy. Surgical

TABLE VIII.—ABERDEEN.—DEATHS AT ALL AGES FROM SELECTED CAUSES
(per 100,000 of population).—Years 1856-1923.*

Year.	Small-pox	Scarlet Fever.	Diphtheria and Croup.	Measles.	Whooping Cough.	Influenza.	Typhus Fever.	Typhoid Fever.	Tuberculous Diseases.		Dis. of Digest. Sys. (incl. Diarrhoea).	Cancer and other Malignant Diseases.	Bronchitis.	Pneumonia.	Dis. of the Circul. System, † excluding Cerebral Embolism & Thrombosis.
									Respiratory.	Other Tuberculous.					
1923,	0	2	5	26	3	7	0	2	80	42	86	131	67	75	195
1922,	0	6	9	88	63	64	0	0	89	26	78	153	99	129	191
1921,	0	5	23	1	1	18	0	0	89	17	94	129	96	98	193
1920,	0	2	17	26	17	34	0	1	98	32	92	130	104	129	169
1919,	0	2	20	1	20	126	0	3	88	43	66	124	100	120	170
1918,	0	2	13	27	33	168	0	9	111	51	81	111	100	157	177
1917,	0	7	11	52	29	22	0	1	116	57	104	112	101	118	175
Average 1917-1921,	0	4	17	21	20	74	0	3	100	40	87	121	100	124	177
1916,	0	17	21	6	18	17	0	1	116	34	93	126	89	86	198
1915,	0	86	30	90	43	21	0	1	135	45	126	129	123	141	200
1914,	1	51	81	4	7	22	0	2	104	51	141	113	96	118	200
1913,	0	19	66	90	27	17	0	5	104	60	128	125	98	139	182
1912,	0	19	21	22	37	12	0	9	95	43	114	109	95	131	176
Average 1912-1916,	0·2	38	44	42	26	18	0	4	111	47	120	120	100	123	191
„ 1911-1915,	0·2	38	42	56	32	16	0	4	111	49	124	116	101	128	184
„ 1906-1910,	0	6	15	26	42	20	0	2	116	61	115	103	105	116	180
„ 1901-1905,	0·1	8	9	41	47	20	2·6	3·6	138	69	162	87	145	125	179
„ 1896-1900,	0	23	18	35	53	29	0·2	9	167	70	210	87	172	109	167
„ 1891-1895,	0·4	21	22	63	52	56	1·0	10	181	72	190	81	210	100	156
„ 1886-1890,	0·8	14	10	80	66	9	1·4	15	184	67	202	68	216	100	175
„ 1881-1885,	0·2	13	15	36	67	1	6	13	204	74	185	69	251	82	159
„ 1876-1880,	0·6	35	30	28	66	2	19	29	223	101	194	61	286	72	146
„ 1871-1875,	48	68	30	53	68	5	20	35	243	107	214	56	281	60	136
„ 1866-1870,	3·6	71	5	50	62	8	62	49	298	130	259	59	238	70	122
„ 1861-1865,	36	93	49	51	62	12	176		274	128	280	57	220	59	122
„ 1856-1860,	40	118	54	70	69	12	109		322	179	203	56	182	58	111

* Corrected for transferred deaths in 1904 and subsequent years. † From 1911 onwards.

procedure still remains practically the only effective means of extirpating malignant growths, and the sooner it is resorted to the more easily can the growths be removed and the return of the disease prevented. It is of the utmost importance that persons suffering from indications of malignant disease should at once seek competent surgical advice. As will be seen from Table VII., it is mainly after middle life that malignant disease manifests itself.

Pneumonia.—In 1922, the death-rate from pneumonia was 129 per 100,000 of the population, and in 1923 the rate was 75 per 100,000. During the 1917-1921 quinquennium, the rate was 124. The rate for the year 1923 is the lowest on record since the quinquennium 1876-1880, when it averaged 72.

Bronchitis.—Bronchitis has declined as a cause of death during the registration period, the death-rate for 1922 being 99 per 100,000 of the population, and for 1923, 67, which is the lowest yet recorded. The average rate for the 1917-1921 quinquennium was 100.

Diseases of the Digestive System gave, during 1922, a death-rate of 78 per 100,000 of population, and during 1923, a death-rate of 86. During the 1917-1921 quinquennium the death-rate averaged 87, and during the 1912-1916 quinquennium it averaged 120. There has been throughout the registration period a decided tendency for the death-rate from diseases of the digestive system to decline. In the 1861-1865 quinquennium, it averaged 280 per 100,000.

Diseases of the Circulatory System.—The death-rate from these diseases in 1922 was 191 per 100,000 of the population, and in 1923 it was 195 per 100,000. In the 1917-1921 quinquennium this death-rate averaged 177 per 100,000. In 1856-1860, the average annual rate was 111.

The increase since the commencement of registration is probably largely, if not wholly, due to the increasing proportion of the population surviving to the later ages, in which circulatory diseases always take a prominent place among the causes of death, owing to the slow degeneration so commonly met with in the walls of the blood vessels of persons beyond middle life.

CHAPTER II.

MORBIDITY, MORTALITY, AND PREVENTION OF INFECTIOUS DISEASES.

An historical review of the development and variation in the practice of compulsory notification of infectious disease in Aberdeen is given in the Medical Officer of Health's report for the years 1916-1921, and accordingly it is only necessary to indicate those alterations in the compulsory notification of disease that have been made during the two years under review. Thus, epidemic encephalitis, which on the recommendation of the Board of Health in 1921 was made compulsorily notifiable by the Local Authority for a period of two years under the Notification Act, was in September, 1923, made permanently compulsorily notifiable within the City of Aberdeen, in view of the continued occurrence of cases in various parts of the country, and in view of its similarity to acute poliomyelitis and epidemic cerebro-spinal meningitis, with which diseases it is apt to be confused. In 1923, also, on the recommendation of the Board of Health, chicken-pox was made compulsorily notifiable from July to December of that year, with the object of securing an accurate differential diagnosis of small-pox and chicken-pox, in view of the remarkable epidemic of small-pox that was then in progress in Gloucester and many other districts of England.

Table VIII. gives the death-rate from each of the principal infectious diseases since the commencement of registration. In Table IX. the number of cases and deaths for each disease is stated for the successive months of the year 1922 and 1923. In Table X., the cases and deaths, together with the case-mortality or percentage of deaths to sicknesses in certain diseases, are supplied for each of the years 1913 to 1923, as also the averages for the 1903-1912 and 1913-1922 decennia.

Charts are supplied giving information as to attack incidence and case-mortality of the principal infectious diseases. In addition, Charts give information regarding the case-mortality from certain diseases in different sizes of houses.

Scarlet Fever.—In connection with recent work published in relation to scarlet fever immunisation, viz., Dick testing and active immunisation with scarlet fever streptococcus toxin, laboratory work has been initiated with a view to the investigation and application of this preventive immunisation in Aberdeen, and the results of the work will be recorded in due course.

The number of cases of this disease recorded during 1922 was 310, with a case-mortality of 2.9 per cent.; and in 1923 there were 271 cases with a case-mortality of 1.5 per cent. During the 1903-1912 and 1913-1922 decennia, the

TABLE IX (A).—PROGRESS OF CERTAIN INFECTIOUS AND OTHER DISEASES IN YEAR 1922.
(Not corrected for transferred deaths.)

DISEASE.		1922.												Whole Year.	
		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.		
A. Compulsorily Notifiable.															
Small-pox	{ Cases	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	{ Cases	22	17	19	19	42	19	17	16	26	36	45	32	310	
	{ Deaths	3	2	...	...	1	...	1	...	...	...	...	2	9
Diphtheria.....	{ Cases	35	23	22	15	17	23	20	11	35	34	25	32	292	
	{ Deaths	2	4	...	...	1	1	...	...	1	2	1	2	14
Typhus Fever	{ Cases	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhoid and Para-typhoid	{ Cases	*2	3	...	...	...	...	1	...	1	...	1	...	8
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery ..	{ Cases	...	1	...	1	...	1	...	...	...	...	...	3	6
	{ Deaths	...	...	...	...	...	1	...	...	...	...	...	...	1
Acute Poliomyelitis...	{ Cases	1	...	...	...	...	3	...	3	1	...	...	1	9
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...
Epidemic Cerebro-Spinal Meningitis	{ Cases	...	...	...	...	1	...	1	...	...	...	1	...	3
	{ Deaths	...	...	...	...	...	...	1	...	...	...	...	1	2
Encephalitis Lethargica	{ Cases	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute { Primary—Cases	60	75	31	74	33	29	14	10	14	23	22	19	404		
Pneumonia { Influenzal—Cases	73	60	3	...	2	1	...	...	...	...	1	1	141	
	{ Pulmonary { Cases	28	44	38	34	30	34	26	22	23	20	22	32	353	
		{ Deaths	19	16	23	19	15	17	13	7	7	11	7	9	154
Tubercle { Other ... { Cases	6	9	5	5	14	13	5	13	8	8	8	11	105		
		{ Deaths	4	4	4	3	6	2	6	4	4	4	3	4	48
Erysipelas	{ Cases	17	7	9	10	8	7	11	3	9	13	9	7	110	
	{ Deaths	2	...	1	2	2	...	3	...	1	...	...	...	11
Puerperal Fever ...	{ Cases	4	...	3	1	2	2	...	...	...	...	1	3	16
	{ Deaths	4	...	2	2	2	1	...	...	...	...	...	2	13
Ophthal. Neonatorum—Cases	4	6	4	3	5	6	6	3	2	2	2	4	47		
Malaria	{ Cases	...	...	...	...	...	2	1	1	...	...	1	5	
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
B. Not Compulsorily Notifiable.															
† Measles	{ Cases	4	...	2	9	2	13	45	61	199	1006	1610	733	3684	
	{ Deaths	...	...	...	...	...	...	3	2	3	27	58	49	142
German Measles	{ Cases	...	...	...	...	...	4	...	...	...	1	2	4	11
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...
† Whooping Cough.....	{ Cases	293	427	361	139	85	53	4	14	9	25	23	11	1444	
	{ Deaths	25	32	17	11	8	4	2	...	1	...	1	...	101	
Chicken Pox	{ Cases	1	...	3	2	2	1	9	4	6	7	8	3	46	
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	{ Cases	550	672	500	312	243	209	161	161	334	1175	1780	897	6994	
	{ Deaths	59	58	47	28	35	26	29	13	17	44	70	69	495	
Influenza.....Deaths	11	9	6	2	1	0	0	0	0	0	0	1	0	30	
Do. and Pneumonia, do.	28	32	3	0	1	0	0	0	0	0	0	0	0	64	
Do. and Bronchitis, do.	3	7	0	0	0	0	0	0	0	0	0	0	0	10	
† Pneumonia	Deaths	31	43	16	38	19	9	7	5	6	9	19	13	215	
† Bronchitis	do.	27	22	23	24	9	4	5	6	9	10	18	7	164	

* Including 1 from Para-typhoid.

† Compulsorily notifiable from 1881 to 1903 ; now reported mainly by School Attendance Officers.

TABLE IX (B) —PROGRESS OF CERTAIN INFECTIOUS AND OTHER DISEASES IN YEAR 1923
(Not corrected for transferred deaths.)

DISEASE.		1923.												Whole Year.
		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
A. Compulsorily Notifiable.														
Small-pox	{ Cases	...	...	1	...	...	...	...	...	...	...	...	1
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	{ Cases	48	33	32	15	31	23	15	15	9	23	16	271	
	{ Deaths	1	...	...	...	1	...	...	...	1	1	...	4
Diphtheria	{ Cases	23	24	14	22	16	14	10	7	17	17	11	189	
	{ Deaths	...	1	1	...	2	...	...	2	...	1	1	8
Typhus Fever	{ Cases	...	...	...	...	...	...	...	...	...	...	...	...
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Typhoid and Paratyphoid	{ Cases	3	...	...	8	...	*5	1	...	...	3	1	21
	{ Deaths	...	...	...	1	...	1	...	...	...	1	...	3
Dysentery	{ Cases	...	...	...	...	...	...	...	...	...	...	...	...
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Acute Poliomyelitis	{ Cases	...	...	...	...	...	...	...	...	...	...	...	...
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Epidemic Cerebro-Spinal Meningitis	{ Cases	1	...	...	...	1	...	...	1	...	1	1	5
	{ Deaths	1	...	...	...	...	...	...	1	...	1	...	3
Encephalitis Lethargica	{ Cases	...	...	...	...	...	...	...	...	...	...	...	...
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Acute Pneumonia	{ Primary—Cases	43	35	29	30	21	27	26	18	22	37	27	335	
	{ Influenzal—Cases	...	1	...	2	...	1	...	...	1	1	7	17
Tubercle	{ Pulmonary—Cases	27	22	27	25	25	24	19	20	22	17	16	264	
	{ Deaths	19	15	10	13	12	14	10	9	8	8	7	137	
	{ Other—Cases	5	10	5	12	26	18	8	10	8	17	6	134	
	{ Deaths	7	6	6	7	14	15	7	7	2	6	3	82	
Erysipelas	{ Cases	8	9	10	4	10	7	8	9	7	11	12	110	
	{ Deaths	1	...	...	...	1	...	1	...	1	...	...	4
Puerperal Fever	{ Cases	...	2	1	1	4	...	...	...	...	3	1	15
	{ Deaths	...	1	1	...	3	...	...	...	2	...	1	8
Ophthal. Neonatorum	{ Cases	4	4	6	5	2	5	8	4	8	9	1	63	
Malaria	{ Cases	...	...	...	1	1	...	...	...	...	1	...	3
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
B. Not Compulsorily Notifiable.														
†Measles	{ Cases	353	77	27	5	21	4	7	10	3	23	41	594	
	{ Deaths	28	6	1	...	3	...	1	2	...	...	...	41
German Measles	{ Cases	...	...	1	...	...	...	...	...	...	1	...	2
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
†Whooping Cough	{ Cases	11	12	21	19	2	...	...	...	1	4	10	87
	{ Deaths	1	1	...	2	...	...	...	...	...	...	...	5
†Chicken Pox	{ Cases	7	6	7	8	7	17	24	43	21	34	38	255	
	{ Deaths	...	...	...	...	...	...	1	...	...	...	...	1
TOTAL	{ Cases	533	235	181	157	167	145	126	137	119	201	189	2366	
	{ Deaths	58	30	19	22	35	31	20	19	15	17	13	296	
Influenza	{ Deaths	1	1	1	1	0	0	0	0	0	0	0	5	
Do. and Pneumonia, do.	{ Deaths	0	0	0	2	0	0	0	0	0	0	2	6	
Do. and Bronchitis, do.	{ Deaths	0	0	0	0	0	0	0	0	0	0	0	0	
†Pneumonia	{ Deaths	15	13	17	17	11	13	8	7	6	18	7	136	
†Bronchitis	{ do.	12	17	10	8	13	6	4	6	3	7	9	110	

* Including 1 from Para-typhoid.

† Compulsorily notifiable from 2nd July to 31st December, 1923.

‡ Compulsorily notifiable from 1881 to 1903; now reported mainly by School Attendance Officers.

TABLE X—ABERDEEN.—MORBIDITY AND MORTALITY OF INFECTIOUS DISEASES
(Excluding Tuberculosis)

DURING EACH YEAR FROM 1913 TO 1923.

(Not corrected for transferred deaths.)

DISEASE.		1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	ANNUAL AVERAGE	
													1913 to 1922.	1903 to 1912.
A. Compulsorily Notifiable.														
Small-pox,	No. of Cases,	1	0	0	0	0	8	0	0	0	6	0	1.4	0.4
	No. of Deaths, ...	0	0	0	0	0	0	0	0	0	1	0	0.1	0
	Percent. of Deaths	0	0	0	0	0	0	0	0	0	16.7	0	7.1	0
Scarlet Fever, ...	No. of Cases,	271	310	706	409	270	290	283	917	1873	1552	1110	772.0	723.6
	No. of Deaths, ...	4	9	8	4	4	3	11	27	142	83	31	32.2	15.0
	Percent. of Deaths	1.5	2.9	1.1	1.0	1.5	1.0	3.9	2.9	7.6	5.3	2.8	4.2	2.1
Diphtheria,	No. of Cases,	189	292	733	560	561	357	338	572	675	1627	2062	777.7	297.5
	No. of Deaths, ...	8	14	36	29	32	21	18	34	51	132	111	47.8	22.5
	Percent. of Deaths	4.2	4.8	4.9	5.2	5.7	5.9	5.3	5.9	7.5	8.1	5.4	6.1	7.6
Typhus Fever, ...	No. of Cases,	0	0	0	0	0	0	0	0	0	0	0	0	13.5
	No. of Deaths, ...	0	0	0	0	0	0	0	0	0	0	0	0	2.3
	Percent. of Deaths	0	0	0	0	0	0	0	0	0	0	0	0	17.0
Typhoid and Paratyphoid,	No. of Cases,	21	8	7	8	23	102	1	10	13	15	33	22.0	35.4
	No. of Deaths, ...	3	0	0	2	5	14	1	2	1	3	9	3.7	4.9
	Percent. of Deaths	14.3	0	0	25.0	21.7	13.7	100	20.0	7.7	20.0	27.3	16.8	13.8
†Dysentery,	No. of Cases, ...	0	6	24	17	7	...	...	...	...	...	...	...	...
	No. of Deaths, ...	0	1	7	4	0	...	...	...	...	...	...	...	...
*Acute Poliomyelitis,...	No. of Cases,	0	9	8	5	1	2	10	79	2	2	4	12.2	...
	No. of Deaths, ...	0	0	2	0	1	1	0	4	0	0	0	0.8	...
Epidemic Cerebro-Spinal Meningitis,	No. of Cases,	5	3	5	3	12	4	2	5	19	1	0	5.4	...
	No. of Deaths, ...	3	2	3	1	10	4	2	2	14	1	0	3.9	...
†Encephalitis Lethargica,	No. of Cases, ...	0	0	3	...	...	...	...	...	...	...	...	...	...
	No. of Deaths, ...	0	0	1	...	...	...	...	...	...	...	...	...	...
†Acute Pneumonia,	Pri- mary, { No. of Cases, ...	335	404	354	393	109	...	...	...	...	...	...	...	...
	Influ- enzal, { No. of Deaths, ...	107	179	131	190	50	...	...	...	...	...	...	...	...
	enzal, {	No. of Cases, ...	17	141	56	87	15	...	...	...	...	...	...	...
		No. of Deaths, ...	6	64	10	32	1	...	...	...	...	...	...	...
Erysipelas,	No. of Cases,	110	110	170	158	141	102	129	125	198	395	229	175.7	188.3
	No. of Deaths, ...	4	11	4	6	2	6	9	4	7	14	4	6.7	6.3
Puerperal Fever, ...	No. of Cases,	15	16	13	13	10	8	12	11	11	24	10	12.8	10.0
	No. of Deaths, ...	8	13	6	5	1	6	8	5	8	15	7	7.4	5.6
*Ophthalmia Neonatorum	No. of Cases,	63	47	100	112	99	39	42	40	40	47	41	60.7	...
†Malaria,	No. of Cases,	3	5	55	138	77	...	...	...	...	...	...	...	...
	No. of Deaths, ...	0	0	1	1	0	...	...	...	...	...	...	...	...
†Trench Fever, ...	No. of Cases,	0	0	0	2	4	...	...	...	...	...	...	...	...
	No. of Deaths, ...	0	0	0	0	0	...	...	...	...	...	...	...	...
B. Not Compulsorily Notifiable.														
|| Measles, ...	No. of Cases,	594	3684	44	1072	306	788	1800	183	1750	69	1559	1125.5	1576.9
	No. of Deaths, ...	41	142	2	41	2	43	86	10	147	6	149	62.8	61.7
	Percent. of Deaths	6.9	3.9	4.5	3.8	0.7	5.5	4.8	5.5	8.4	8.7	9.6	5.6	3.9
German Measles,	No. of Cases,	2	11	4	73	42	21	357	9	4	8	361	89.0	...
	No. of Deaths, ...	0	0	0	0	0	1	2	0	0	0	0	0.3	...
|| Whooping Cough, ...	No. of Cases,	87	1444	305	325	713	777	956	307	1068	116	678	668.9	829.2
	No. of Deaths, ...	5	101	2	28	31	54	48	29	70	12	45	42.0	70.9
	Percent. of Deaths	5.7	7.0	0.7	8.6	4.3	6.9	5.0	9.4	6.6	10.3	6.6	6.3	8.6
§Chicken Pox,	No. of Cases,	255	46	725	256	...	...	...	...	...	...	...	...	...
	No. of Deaths, ...	1	0	3	0	...	...	...	...	...	...	...	...	...

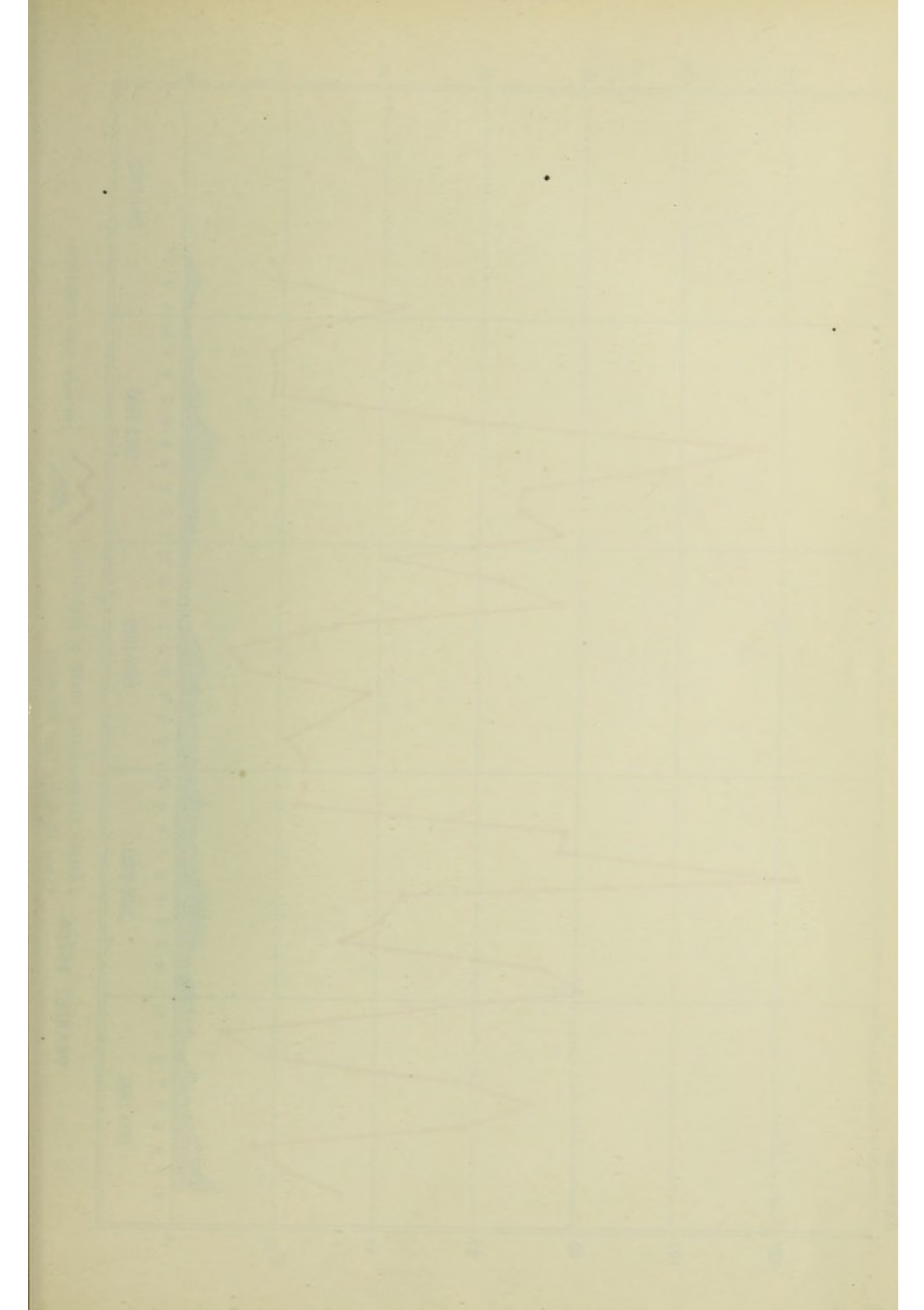
* Notification commenced May, 1913.

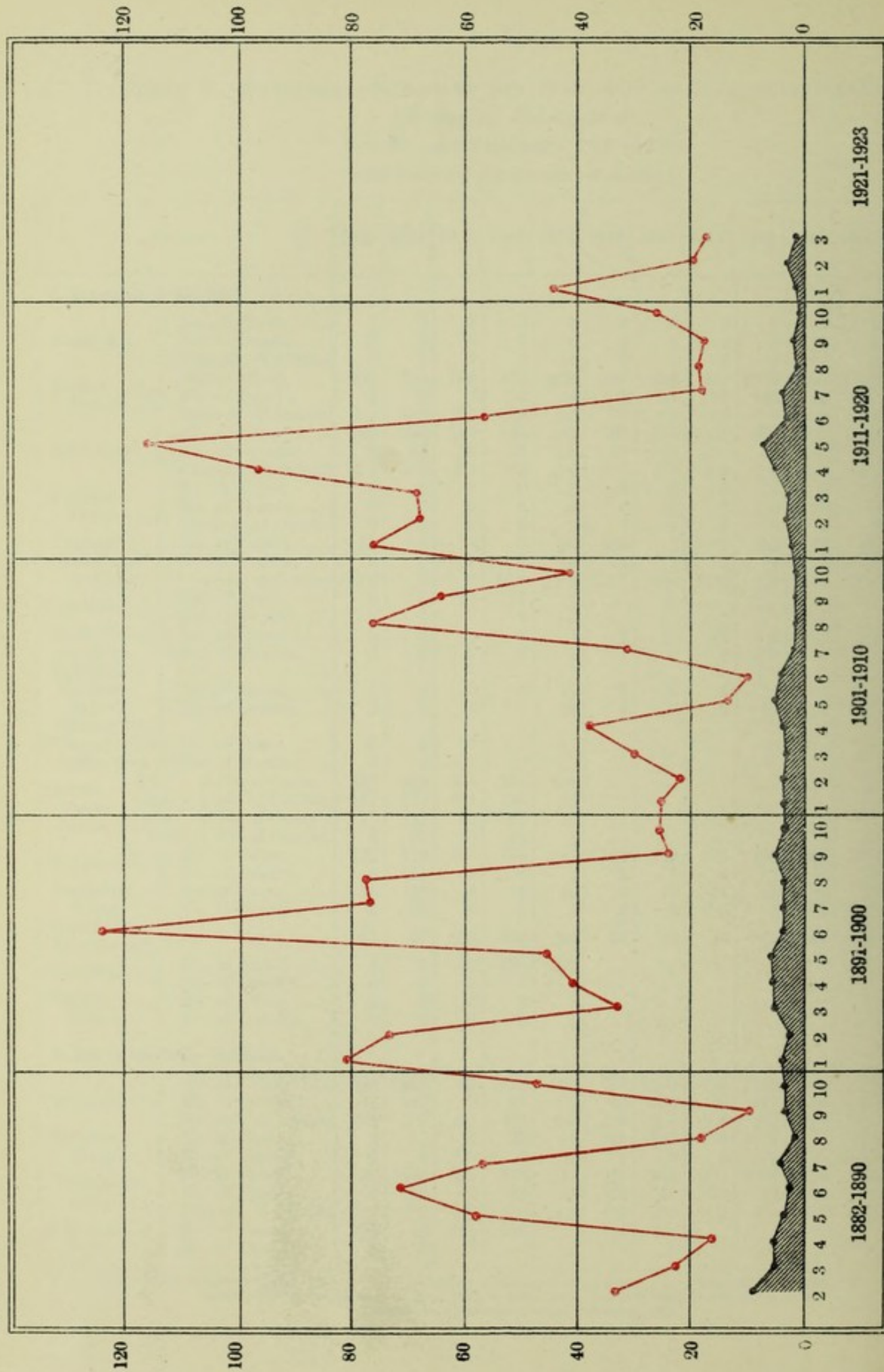
† Notification commenced Aug., 1919.

‡ Notification commenced Aug., 1921.

§ Compulsorily notifiable from May, 1920, to Sept., 1921, and from July to December, 1923.

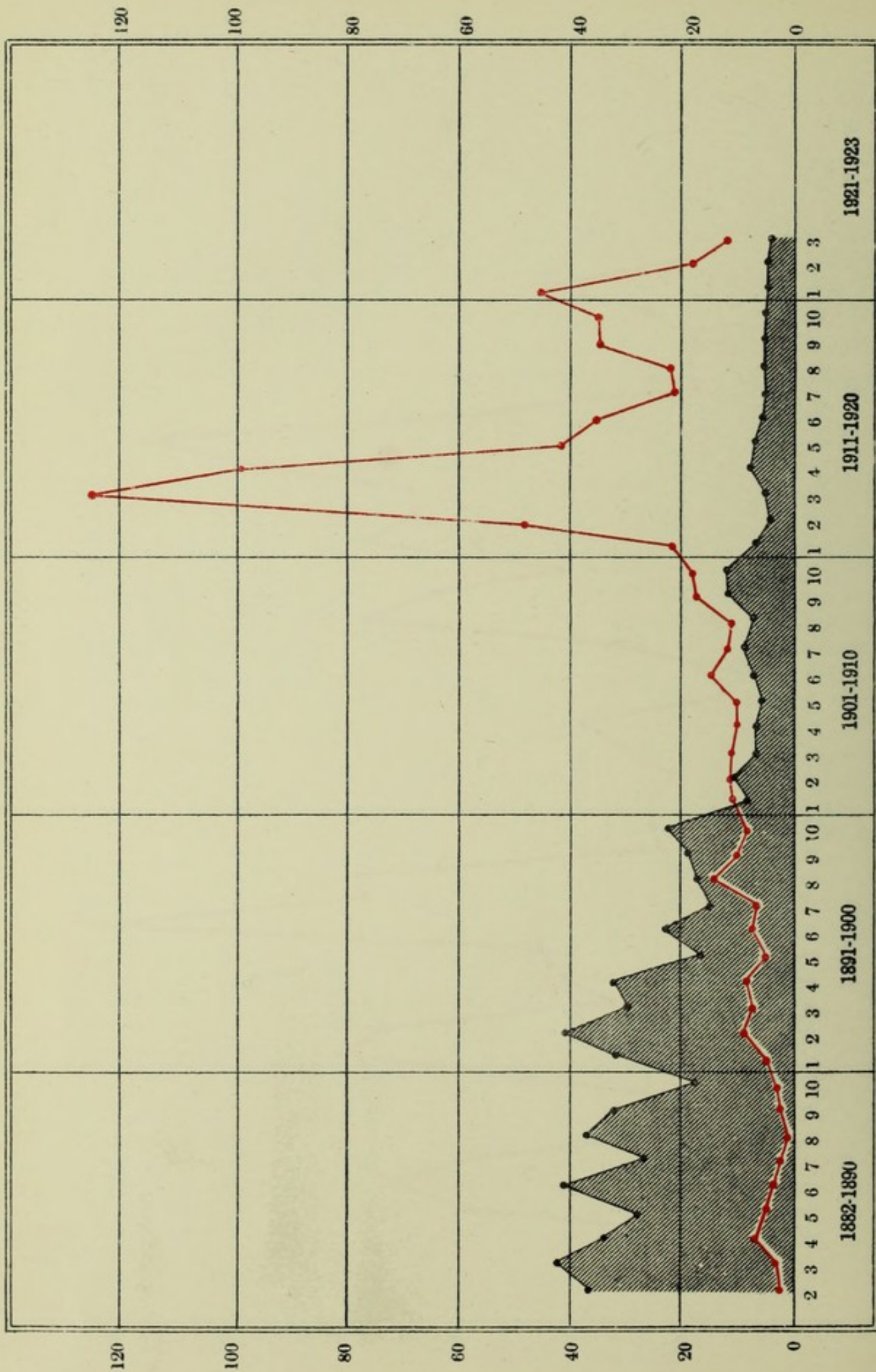
|| Compulsory notification ceased February, 1903.





SCARLET FEVER { Attack Incidence (per 10,000 of population)
Case Mortality (per 100 cases) } in each year 1882-1923.





DIPHTHERIA— { Attack Incidence (per 10,000 of population)
 { Case Mortality (per 100 cases) } in each year 1882-1923.

average yearly numbers of cases were 724 and 772 respectively, and the case-mortalities 2.1 and 4.2 respectively.

During 1922 a group of 15 cases occurring within a few days was traced to the infection of the milk supply from a small farm in the vicinity of the City, where two persons engaged in milking were found to be suffering from scarlet fever. Steps were at once taken through the County Medical Officer to have the supply temporarily stopped until the necessary preventive measures had been secured.

Chart 1 shows the attack incidence and case-mortality of Scarlet Fever from 1882-1923.

Diphtheria.—The prevalence of this disease has very definitely diminished during the years 1922 and 1923, the numbers of cases occurring in the City being for each of these years 292 and 189 respectively, with case-mortalities of 4.8 and 4.2 per cent. The average yearly number of cases during the 1913-1922 decennium was 778, with a case-mortality of 6.1.

In order to discover possible diphtheria carriers and such cases in infected households as had not been recognised on account of the absence of clinical symptoms, swabbings from the throat and nose, for bacteriological examination, have continued to be taken from the contacts in all houses in which definite cases had been notified. These swabbings gave a positive finding bacteriologically in 0.8 per cent. of the cases thus examined in 1922, and in 1.2 per cent. of the cases in 1923. During the 1913-1922 decennium, when the number of diphtheria cases was much greater, the average percentage of positive swabbings was 4.3. It is now a generally accepted conclusion that when any carrier disease gains epidemic proportions, the number of healthy carriers of the infection is correspondingly increased.

Chart 2 shows the attack incidence and case-mortality of Diphtheria from 1882 to 1923.

DIPHTHERIA IMMUNISATION:—SCHICK TESTING AND TOXIN-ANTITOXIN PROPHYLAXIS.—Prophylactic immunisation with toxin-antitoxin against diphtheria in the City was sanctioned by the Town Council in October, 1922, and the following letter was addressed to the medical practitioners of the City:—

Public Health Department,
41½, Union Street,
Aberdeen, 17th November, 1922.

Dear Sir,

Prevention of Diphtheria.

Authority has been given to make available free of charge to medical practitioners the necessary materials for diphtheria toxin-antitoxin immunisation.

Three doses of toxin-antitoxin, each of 1 c.c., injected subcutaneously at intervals of one week, appear to give the best immunity results. Such a series of injections will produce marked, if not absolute, protection against diphtheria in about 85 per cent. of susceptible children or older persons. The toxin-antitoxin in 1 c.c. doses can be obtained from the Chief Medical Resident, City Hospital, on request.

It has been found that while children show considerable immunity to diphtheria during the first six months of life, they then become very susceptible for some years, and only slowly develop immunity as age advances, and it is suggested that the active immunity induced by toxin-antitoxin vaccination leads to an earlier development of this natural immunity. It

would appear desirable, therefore, to confer active immunity by means of toxin-antitoxin injections as soon as possible on every child aged six months. The duration of such immunity in at least 90 per cent. of the children is for more than six years, and probably for the remainder of life.

Active immunity takes from six weeks to six months to develop, and accordingly there must be delay before the Schick test for immunity is again performed. The test depends on the local irritant action of diphtheria toxin when injected intradermally in a susceptible person—no reaction following injection when immunity exists. Some experience is required in the technique of the test and the estimation of the result, and as the supply of toxin for the purpose kept at the City Hospital requires dilution for use, it may be considered desirable to make use of the services of the City Hospital medical staff in this connection.

Arrangements have been made to hold clinics at the City Hospital on Thursdays at 4 p.m., and at the Castlegate Mother and Child Welfare Centre on Mondays at 4 p.m., to carry out the necessary injections and tests.

So susceptible are children from six months to six years of age, that no preliminary Schick test appears to be necessary in their case. In this age-period, the annoyance from toxin-antitoxin injections is slight. In older children, a preliminary test of immunity is indicated. There is practically no danger from allergy in repeating the injections of toxin-antitoxin.

Owing to the time required to secure active immunity by toxin-antitoxin injections, this method cannot be substituted for prophylactic injections of antitoxic serum in dealing with immediate contacts.

The provision of a bacteriological test for diphtheria and of antitoxin for the treatment of the disease, while reducing its mortality, has not diminished its incidence. The active immunity conferred by toxin-antitoxin injections provides a definite prospect of controlling diphtheria. The effort will, at its beginning, have chiefly an educational effect. Its ultimate success is largely in the hands of the medical practitioner.

Yours faithfully,

J. PARLANE KINLOCH,

Deputy Medical Officer of Health.

Up to the date of writing, however, very little advantage has been taken of this preventive provision by the medical practitioners of the City.

Prophylactic immunisation against diphtheria was commenced among the staff of the City Fever Hospital about the end of 1921, and the following is a record of the work done in this connection by Dr. James S. Anderson, Senior Resident Medical Officer, during the years 1922-1923.

During the two years, diluted diphtheria toxin, control and prophylactic diphtheria toxin-antitoxin have been obtained from the Wellcome Physiological Research Laboratories. For the Schick test, a tuberculin syringe graduated in tenths of a c.c. and fitted with Messrs. Burroughs Wellcome's rustless No. 214 needle, has been found to give the most satisfactory results and to be the most easily manipulated.

For the Schick test, 0.2 c.c. of a diluted diphtheria toxin representing 1/50 m.l.d. for a guinea-pig weighing 250 gm. has been injected intracutaneously into the flexor aspect of the left forearm. Into the right forearm in a similar situation has been injected as a control the same amount of diluted toxin, which had been previously heated. The reaction has been read after 48 hours, and has been finally recorded after 5 days. Susceptible individuals, as indicated by a positive Schick reaction, have received three doses of 1 c.c. each of prophylactic diphtheria toxin-antitoxin at seven days' intervals, the injection being made subcutaneously into the upper arm about the insertion of the deltoid muscle.

In the course of the two years, 80 individuals belonging to the hospital staff were tested, 66 being females, with an average age of $19\frac{1}{2}$ years. In the remaining 14 cases, all males, the average age was about 30 years. It is to be noted further that 44 of the cases came from urban areas, while 36 came from rural areas.

In addition, demonstrations have also been given to over 200 students preparing for M.B. and D.P.H. examinations. These have been allowed to familiarise themselves with the technique of intracutaneous injection by being afforded the opportunity of performing the Schick test on each other. Owing to the experimental nature of such tests and to the difficulty in following up the cases, none is included in the present report.

Of the 80 individuals examined, 33 were found to be susceptible at the first test, and of these 26 received a series of prophylactic injections. The remainder were not available owing to resignation, illness, or other cause. Of the 26 cases mentioned, 5 were awaiting the expiry of an interval of six months before retesting, thus leaving 21 in whom a second Schick test had been performed. Only 5 were found to retain their susceptibility after the first series of inoculation, and these were awaiting a second series of prophylactic injections.

Reactions were noted in 7 cases—which is equivalent to 26.9 per cent. of the individuals inoculated. None of these was unduly severe—all, with one exception, being local and somewhat similar to the moderately severe local reaction frequently encountered in anti-typhoid inoculation. In the exception, a moderate general reaction with slight pyrexia, malaise, and headache, was noted. In four cases, the reaction followed the first injection only, while in the remaining three, including the exception mentioned, it occurred after the second injection.

With regard to the subsequent occurrence of diphtheria in tested individuals, 4 cases were noted. In two of these diphtheria was diagnosed on clinical grounds, but *without bacteriological confirmation* despite intensified bacteriological examination, nine months after a negative Schick test. There is thus reasonable ground for dubiety as to the specific nature of the disease in these two cases. In the third case, clinical diphtheria with bacteriological confirmation occurred three days after the second injection of toxin-antitoxin; while in the fourth, clinical diphtheria, also with bacteriological confirmation, occurred 127 days after the completion of the series of prophylactic injections. In all these cases, retests were performed eighteen months after the original Schick test, with negative results except in one of the first two cases mentioned. In this case the possibility of a flaw in the technique of the original test must be borne in mind.

The results of this investigation are encouraging and furnish evidence to the effect that 72.2 per cent. of individuals susceptible to diphtheria have been actively immunised by one series of injections of toxin-antitoxin. Moreover, since the hospital draws a large proportion of its staff from rural areas, and as such members are on the whole more susceptible, this method of immunisation, so far as tested, has been subjected to this wider application. So far, no disastrous results have been noted to follow the administration of toxin-antitoxin, and apparently, unless in exceptional cases, no incapacity for duty need be anticipated.

At the same time, it should be noted that this survey covers a comparatively small number of people, and that during the period involved both the morbidity and mortality of diphtheria have been low in the City of Aberdeen.

The results of the investigation are tabulated below:—

Table A.—This gives an analysis of the results of the Schick tests of all members of the staff on appointment since 1921.

Table B.—In this table the same results are given with reference to the urban or rural origin of the individuals tested.

Table C.—This table is included by way of comparison with Table A, and gives an indication of the relative decrease of susceptibility to diphtheria among the staff. It is compiled from the results of the *latest* Schick tests in all available members of the staff appointed since 1921. The percentage of susceptible individuals is rather exaggerated owing to the inclusion of 7 cases in all of which the results of prophylactic inoculation have not been definitely determined—viz., 5 cases await further retesting after administration of toxin-antitoxin, and 2 cases have been found to be hypersensitive to protein injections at the first test and have not received further prophylactic injections.

Table D.—An analysis is given of Schick retests at intervals of 9 to 18 months after the administration of toxin-antitoxin.

Table E.—This table demonstrates in parallel columns the yearly incidence of diphtheria in (a) the staff, and (b) the City, along with the percentage case-mortality in each year. It may be mentioned that at least 95 per cent. of all cases of diphtheria in the City receive treatment in the hospital.

Table A.

Positive reaction,	31 or 38·75%
Pseudo-positive reaction,	2 or 2·5 %
<i>Total positive reaction,</i>	<i>33 or 41·25%</i>
Pseudo-negative reaction,	6 or 7·5 %
Negative reaction,	41 or 51·25%
<i>Total negative reaction,</i>	<i>47 or 58·75%</i>

Table B.

Number from urban districts—44.

Positive reaction,	14 or 31·4%
Negative reaction,	30 or 68·6%

Number from rural districts—36.

Positive reaction,	19 or 52·7%
Negative reaction,	17 or 47·3%

Table C.

Number examined—57.

Positive reaction,	14
Pseudo-positive reaction,	2
<i>Total positive reaction,</i>	<i>16 or 28·0%</i>

Pseudo-negative reaction,	9
Negative reaction,	32
<i>Total negative reaction,</i>	<i>41 or 72.0%</i>

Table D.

Number retested—21.

Positive reaction,	5
Pseudo-positive reaction,	0
<i>Total positive reaction,</i>	<i>5 or 23.8%</i>
Pseudo-negative reaction,	2
Negative reaction,	14
<i>Total negative reaction,</i>	<i>16 or 76.2%</i>

Table E.

INCIDENCE.

Year.	Staff.	City.	Case Mortality.
1912	7	791	4.5
1913	19	2062	5.4
1914	19	1627	8.1
1915	11	675	7.5
1916	13	572	5.9
1917	13	338	5.3
1918	8	357	5.9
1919	6	561	5.7
1920	22	560	5.2
1921	23	733	4.9
1922	3	292	4.8
1923	0	189	4.2

Diphtheria immunisation has also been practised during 1923 to a considerable extent among the patients in the City Hospital, and a beginning has been made with this immunisation among the children coming under the survey of the Maternity and Child Welfare Department. A survey of these immunising activities will be submitted at a later date.

Typhoid and Para-Typhoid Fevers.—The number of cases of typhoid fever reported during 1922 was 7, with no deaths, and during 1923 there were 20 cases, with 3 deaths. The average annual number of cases during the 1913-1922 decennium was 22.0, including the figures of the 1918 epidemic of 97 cases; and the average annual number of deaths during that period was 3.7.

Of para-typhoid fever, there was 1 case in 1922, and 1 case in 1923.

In 1923, a limited outbreak of typhoid fever with 13 cases occurred in the Guestrow area of the City, the outbreak having several features of interest. All the cases were inmates of or connected with a lodging-house in the Guestrow. The first cases were discovered by the Health Department in April, and in all a total of 13 cases, with 2 deaths, was recorded. As to the origin of the outbreak, it was ascertained, on 5th July, and as a consequence of the bacteriological examination of

contacts of previous cases, that the blood of a man, whose father had recently been removed to the City Hospital as an undoubted case of typhoid, showed typhoid agglutinins in a dilution of 1 in 2,000 of the serum; and since this man had at no time been vaccinated against typhoid, it was evident that he had suffered at a comparatively recent date from a typhoidal infection. On inquiry, it was further ascertained that the man in question had been resident at the Guestrow lodging-house prior to this outbreak of typhoid fever, and had been removed to the Royal Infirmary as a case of illness of unknown origin early in March. He left the Royal Infirmary very soon after admission, and although admitted to the Infirmary again in April, he stayed there only a week, and on both occasions practically refused examination or treatment. There could be no doubt, however, that this man had recently suffered from typhoid fever; and since the first known case of the Guestrow outbreak sickened about the middle of March, it was believed that this man was the source of the outbreak and had remained a temporary carrier on his return to the Guestrow lodging-house from the Royal Infirmary. His temporary residence with other people in houses adjacent to the Guestrow, who later developed typhoid fever, explained also the source of infection in the cases from such houses. This man, who on epidemiological evidence, was regarded as a carrier, was admitted to the City Fever Hospital on 5th July, and while there his blood showed the same evidence of recent typhoidal infection; but the negative results obtained from the examination of the faeces and urine over a period of nine days indicated that either the carrier condition had ceased or that he had become an intermittent carrier. Since typhoid bacilli had not been isolated from the faeces, however, bacteriological proof of his carrier condition was not available, and as the man resented detention in hospital, it was not considered advisable to detain him compulsorily under the Public Health (Infectious Disease Carriers) Regulations. The first 8 cases of the outbreak were notified during April. Certain anomalous symptoms had apparently given occasion for a mistaken diagnosis, and all the 8 cases had been regarded as cases of influenza. One of the cases had been recommended for admission to Oldmill Hospital, and in this way the outbreak was brought to the notice of the Health Department. Bacteriological examination of this patient, and of the other 7 patients, clearly revealed that they were all cases of typhoid fever, and they were transferred forthwith to the City Hospital. The first case had sickened about the middle of March, and the period of onset of illness in the other 7 cases indicated that they had almost certainly received the infection from this case. Five of the cases occurred in one family, 2 others were mother and daughter, and the eighth case was a man aged 20 years. Four other cases were notified during the month of June, and these cases were also removed to hospital. A further case, a married woman, was notified on 9th July, and inquiry revealed that this patient had been infected from earlier cases in the lodging-house in the Guestrow, in which the majority of the cases had occurred. Her baby, seven months old, was not infected, nor was her husband, but the patient and her baby were removed to the City Hospital and separately isolated. The ages of the cases ranged from $2\frac{1}{2}$ years to 61 years. There were two deaths connected with this outbreak. One of the patients—a boy aged 8 years—died five

days after admission to hospital. He, however, had been suffering from advanced pulmonary tuberculosis, the symptoms of which had been acute for a period of three years; and the typhoidal infection was superimposed on the grave tuberculous condition, and caused death. The other death was that of a woman aged 33 years, who had been severely ill from the first onset of her illness. All contacts were examined bacteriologically and preventive typhoid vaccination was made available for those who had been exposed to infection.

A further group of 3 cases of typhoid fever, all occurring in one family, was brought to the knowledge of the Health Department during the month of October, 1923. The first case, a girl aged 19 years, had sickened about 4th September, but on account of certain anomalous symptoms had been regarded as a case of influenza. This initial attack of typhoid had apparently subsided by 10th October; but it was followed in a few days by a very definite relapse, during which the true nature of the disease was recognised, and the patient was admitted to hospital on 17th October. A brother of this patient, aged 17 years, sickened on 16th October, having contracted the infection from his sister, and was admitted to hospital on 18th October. The mother of these two patients sickened with enteric fever on 18th October, having also contracted the infection from her daughter, and she was admitted to hospital on the 19th. All three cases proved to be of a very severe type of the disease, and the boy aged 17 years died on 22nd November. This group of cases had no connection with the Guestrow outbreak. As regards the original source of the infection in this family, it is practically certain that the infection was contracted from a carrier case, who had suffered from typhoid fever 24 years previously, and who has suffered from recurrent enteritis since that time. The first of the three cases had been closely associated with this carrier until about three weeks before her illness.

The abstract notes of the following case, out of the 20 cases occurring in 1923, as recorded by Dr. James S. Anderson, Senior Resident Medical Officer at the City Hospital, are worthy of mention:—

A male, aged 17, came of a family with a marked history of mental instability on the mother's side. He was admitted to hospital on the third day of his illness, having contracted the disease from his sister, who had already sickened of it. The onset was acute, with marked prostration. For the next fortnight the temperature remained continuously between 101° and 105° F., the pulse-rate varying between 110 and 124. The blood gave a pure culture of *B. typhosus*, and an agglutination of the same organism to 1 in 30. On the seventh day of the disease low muttering delirium set in, while carphology and subsultus tendinum were invariably present. Hydrotherapy, with ice cold water, only partially controlled the fever, and sleep, usually of short duration, could only be obtained by intensive administration of chloral hydrate and ammonium bromide. For five days the delirium was very marked, and then gradually disappeared. On the twenty-third day delirium of suspicion was noted, but only for one day. Bowel hæmorrhage occurred between the fifteenth and twenty-first days, intermittent in character, and never amounting to more than a few clots. On the twenty-seventh day symptoms of periostitis developed in an unusual position—the right wing of the sacrum being involved. The temperature, which had almost reached normal, simultaneously began to rise. The sacral region was explored on the thirty-third day, and from the pus a pure culture of *B. typhosus* was obtained. Meanwhile, on the thirtieth day, trismus appeared. Tonic, apparently painless, contraction of the jaw muscles gradually increased in intensity, and was

accompanied by difficulty in deglutition and tonic contraction of the extremities, and of the muscles of the back and the nape of the neck. The trismus was constant, and at most the teeth could only be separated to the extent of a quarter of an inch, but there were no convulsions typical of tetanus. In view of the possibility of meningitis, lumbar puncture was performed on the thirty-first day, when a slight increase of pressure of the cerebro-spinal fluid was noted. The cytology and chemistry of the fluid were normal, while the culture remained sterile. Prior to the development of trismus no broken sores were visible on the body, and no history of recent injury was elicited. No urinary changes were detected. Tonic contracture remained a constant feature, trismus being so marked at times that the patient could not separate the teeth. Death occurred on the thirty-eighth day of the disease.

According to Curschmann, the occurrence in adults of trismus and a tetanus-like condition in enteric fever is a rare event, and is an expression either of a most profound toxic action upon the central nervous system, or of especially severe complications.

Chart 3 shows the attack incidence and case-mortality of Typhoid and Paratyphoid Fevers from 1882 to 1923.

Food Poisoning.—In opportune fashion the Scottish Board of Health, having reference to the interest aroused by the tragic experience of botulism at Loch Maree, requested Local Authorities in a letter dated 13th October, 1922, to report forthwith to the Board all cases of food poisoning with a view to their fuller investigation. The following circular letter from the Health Department to the medical practitioners indicates the Board's requirements:—

Public Health Department,
41½, Union Street,
Aberdeen, 15th November, 1922.

Dear Sir,

Food Poisoning.

Attention has been directed afresh to the dangers of food poisoning, especially arising from the use of tinned foods, by the recent outbreak of food poisoning at Loch Maree.

In November of last year, in this City, there was an outbreak of about thirty cases of poisoning in the Footdee district, attributable to a tin of boiled beef prepared in South America by a well-known firm of meat canners; although, happily, in this outbreak there were no deaths—the symptoms terminating mostly within forty-eight hours.

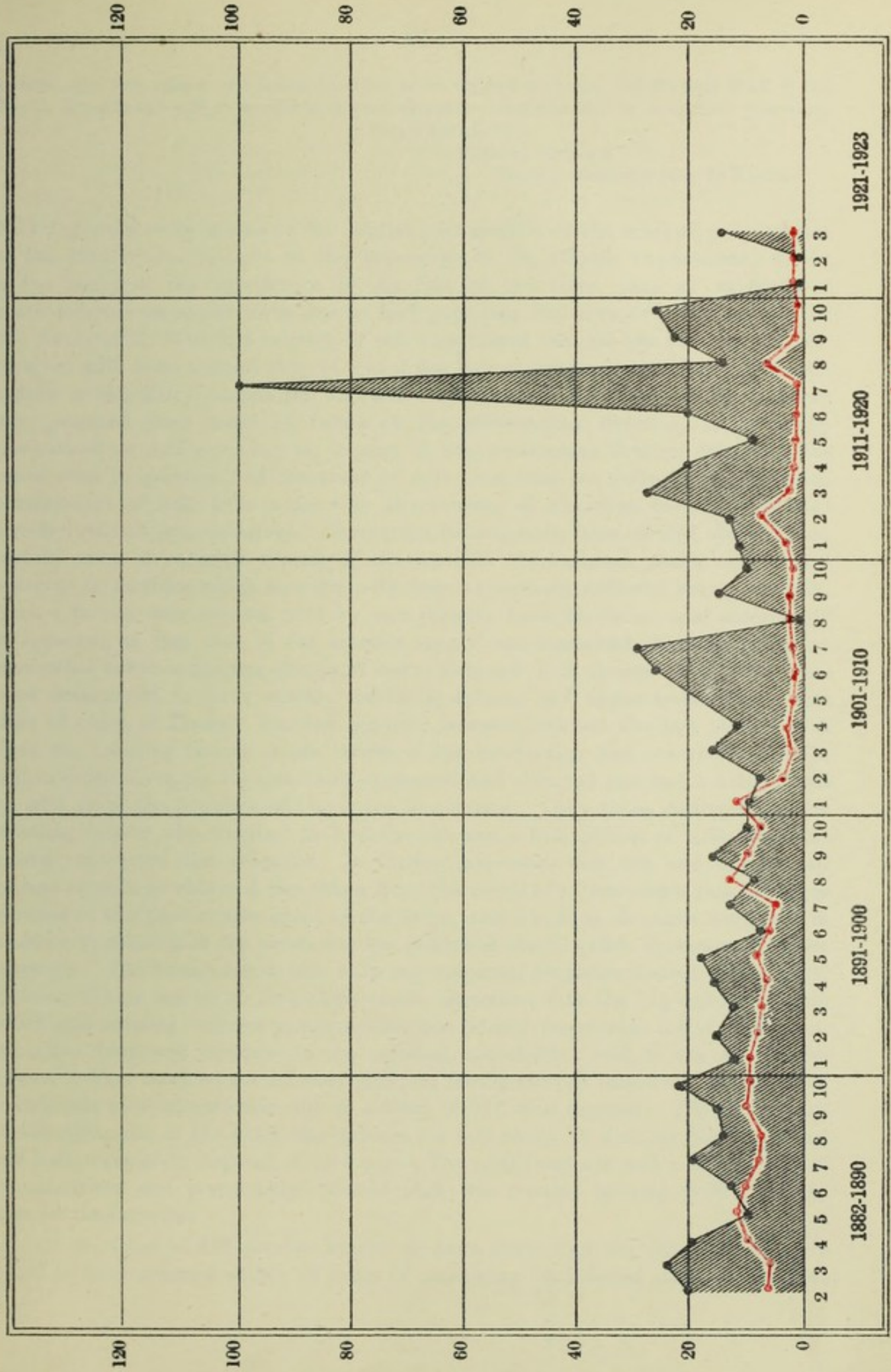
In these Aberdeen cases, the symptoms of vomiting, diarrhoea, and prostration were those usually associated with infection by organisms or toxins of the Gaertner Group bacilli—the commonest form of bacterial food poisoning.

The food poisoning at Loch Maree was attributed to infection with *Botulinus* toxins, the symptoms of which (interference with vision, speech, swallowing, &c.) are quite different from those occurring in Gaertner infections. The symptoms in botulism are referable to lesions of the central nervous system. In this connection, the Scottish Board of Health have now made available at the City Hospital a supply of *Botulinus* Antitoxin for the early treatment and prevention of botulism. (Board of Health Circular I.D.B. No. 7, 1922, attached.)

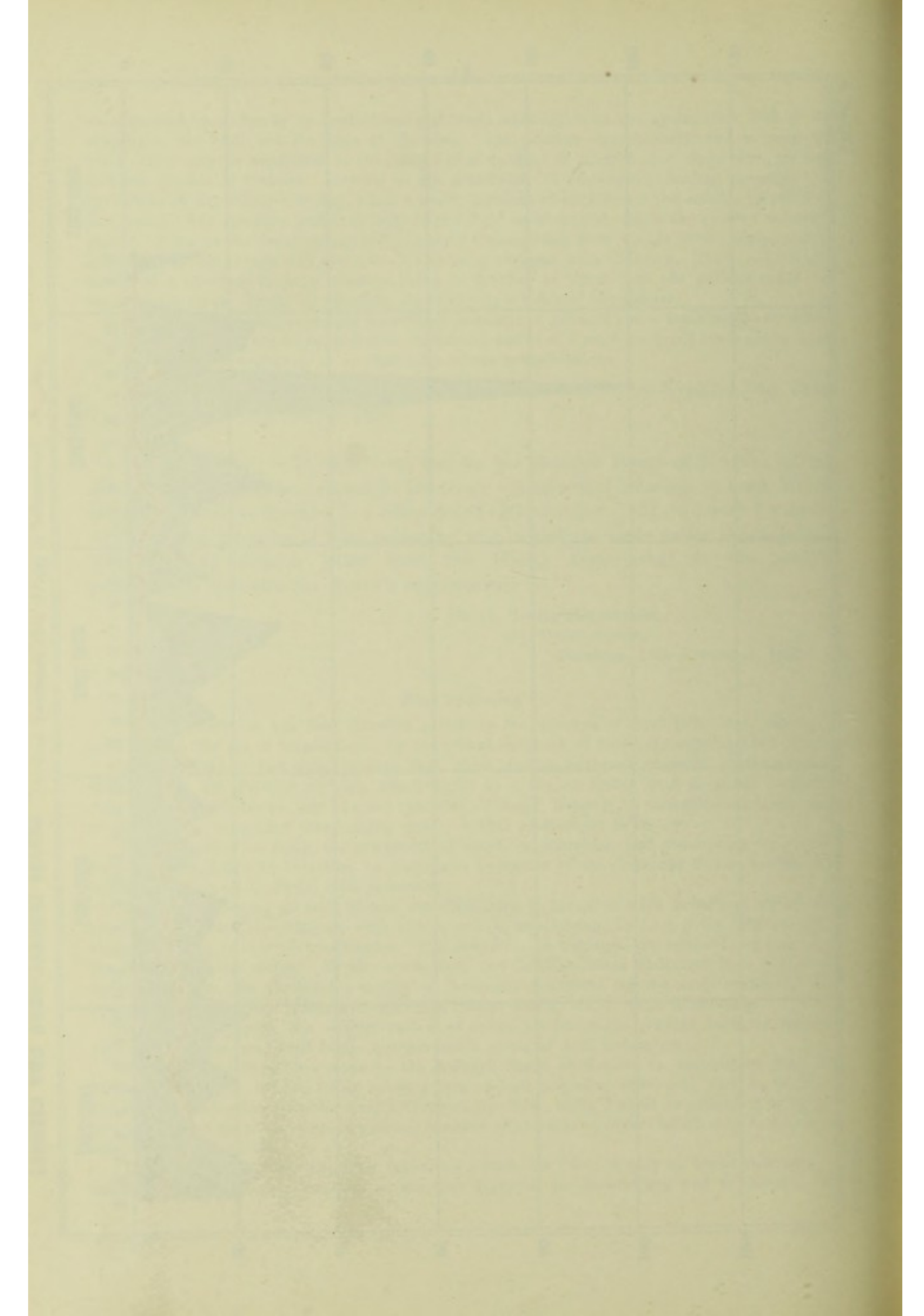
As you are aware, the contamination of foods by inorganic poisons such as arsenic, antimony, copper, and lead forms another main cause of food poisoning.

Arrangements have been made by the Scottish Board of Health, in conjunction with the Ministry of Health, for the fuller investigation of food poisoning outbreaks, and, in terms of the Board's instruction (Public Health Circular No. XII., 1922), I shall be obliged if in future you will inform me at the earliest possible moment of all cases of illness which may be attributable to food poisoning.

In most cases of food poisoning occurring within the City, it may be found desirable to have the patient at once removed to the City Hospital for observation and treatment. If,



TYPHOID AND PARA-TYPHOID FEVERS — { Attack Incidence (per 10,000 of population)
Case-Mortality (per 100 cases) } in each year 1882-1923.



however, for any reason you desire the case to be treated at home, the Medical Staff of the Health Department will be available to give whatever assistance may be considered necessary.

Yours faithfully,

J. PARLANE KINLOCH,

Deputy Medical Officer of Health.

Milk Infection.—By means of the cordial co-operation of the medical practitioners of the City it was brought to the knowledge of the Health Department, within a few hours of the appearance of the first of the cases, that an outbreak of acute enteritis suspected to be due to food poisoning had occurred in Aberdeen on 6th June, 1923. On first inquiry, it was ascertained that all the known cases had received milk from a retail shop of one of the largest dairies in the City. The milk supply of this dairy, amounting on an average to about 2,000 gallons of milk per day, received from some 34 farms in the surrounding districts, is commonly pasteurised on delivery; but on inquiry it was ascertained that on 6th June the retail shop in question had run short of milk, and that ten gallons of a 20-gallon consignment of milk from a farm in the vicinity of Aberdeen had been retailed directly without pasteurisation. Concurrent investigation later elicited the fact that certain cases of enteritis typical of the cases in the outbreak under review had occurred in families which received milk from an entirely different source, namely, from a farmer who retailed milk by cart directly from his farm; and accordingly it appeared at first that so far as milk supply was concerned there could be no connection between the two groups of cases, although both groups of enteritis cases were determined to have exactly similar symptoms and approximately the same time of onset of illness. Further inquiry, however, elicited the fact that on 6th June the retailing farmer in the course of his distribution had run short of milk, and in order to supply his remaining customers had obtained one and a half gallons of milk from the premises of the dairy in question. Only those customers of the retailing farmer who received part of the one and a half gallons of milk from this source contracted the enteritis. It further appeared that the one and a half gallons of milk so obtained was taken from the receptacle from which raw milk was pumped to the pasteurising plant of the dairy, and which at the time contained in addition to other milk the remaining ten gallons of the 20-gallon consignment under suspicion. The remainder of this milk was subjected to pasteurisation in the usual fashion. There can be no reasonable doubt, therefore, that the $11\frac{1}{2}$ gallons of milk which was retailed without pasteurisation was wholly responsible for the infection. No other food was common to the infected households; and of the 43 families known to have received the infected milk, no family escaped infection, although 127 individuals escaped infection out of a total of 237 thus exposed. The ten gallons of infective milk in the dairy was exposed for sale about 10 a.m. on 6th June, and had been completely disposed of by 5 p.m. The additional one and a half gallons of unpasteurised and presumably infected milk was retailed between 8.30 and 9.30 a.m. on the same day.

Of the total of 110 persons known to have contracted the enteritis, 14 were found to have sickened within 12 hours of consuming the infected milk, the shortest

incubation period determined being five hours. An additional 47 persons were found to have sickened in from 12 to 24 hours after taking the milk; nine persons sickened in from 24 to 36 hours; and five persons were found to have sickened within from 36 to 48 hours; leaving 35 persons concerning whom the interval elapsing between the time of the consumption of the milk and the onset of illness was not determined. Of the 110 known cases of enteritis, eight sickened on the 6th June, 87 on the 7th, nine on the 8th, one on the 9th, and one on the 10th. The two latter cases were probably cases of contact infection, since original cases in these families occurred on the 6th or 7th June. In four cases the date of onset was not accurately determined.

As regards sex distribution, 47 of the 110 cases were males, and 63 were females, giving a proportion of 43 per cent. of males to 57 per cent of females.

With reference to age distribution, four of the total cases were under 2 years of age; seven were in the 2 to 5 year age-period; 27 in the 5 to 15 year age-period; 21 in the 15 to 25 year age-period; 31 in the 25 to 45 year age-period; 17 in the 45 to 65 year age-period; and three above 65 years.

Inquiry and examination at the dairy supplying the milk revealed no evidence that the 11½ gallons of milk causing the enteritis could have been infected on the dairy premises. Inquiry at the farm producing the 20-gallon consignment of milk from which the 11½ gallons of infected milk was derived, elicited the fact that all the children of the farmer had suffered from an acute diarrhoea within a fortnight of the time the enteritis had appeared in the City. The farmer's wife and sister living with the children were engaged in the production of this milk, but since the dairyman had intimated to the farmer that his milk supply was under suspicion as a cause of the enteritis outbreak in the City, the reticence of the farmer was such that on inquiry no accurate information could be obtained of the nature or of the distribution of the diarrhoea in the farmer's family.

The symptoms were remarkably uniform in the cases under observation, and clinically were those attributable to bacillary dysentery infections, variation of clinical appearance having reference to intensity rather than to type. There was rise of temperature from 101° to 103° F., with pulse and respiratory rate in proportion. The onset was acute with obvious shivering or sweating accompanied by abdominal pain localised mainly in the epigastric region. Vomiting, quickly followed by diarrhoea, developed in from one to four hours of the onset of illness, and the epigastric pain thereafter appeared to subside. Headache and backache were present in most cases, and within 24 hours the majority of the cases showed a considerable degree of collapse. Purging was intense in most instances, some patients having as many as 24 stools in the first 24 hours. Intermittent abdominal cramps were noted with occasional rectal tenesmus. Blood appeared in the stools of the vast majority of cases, but the most striking faecal feature was the amount of mucus, some of the stools in many of the cases being almost entirely composed of mucus and epithelial debris. In the great majority of cases acute symptoms abated in from 36 to 48 hours. There were no deaths.

In four cases admitted to the City Fever Hospital polyvalent anti-dysenteric serum was given intravenously along with the oral administration of sodium

sulphate. The remaining great majority of cases, however, received only aperient treatment and recovered with equal facility.

Opposed to the conclusion on clinical evidence that this enteritis had the essential features of a bacillary dysentery are the facts that out of an ascertained 110 cases none died, and that out of 106 of the 110 cases that received no specific therapy no case manifested the symptoms of chronic bacillary dysentery.

BACTERIOLOGICAL INVESTIGATION.

1. Cases in Aberdeen.

A. *Fæces from patients*.—Thirty samples of fæces obtained from 21 patients at the height of illness gave negative results for non-lactose fermenting colonies of the paratyphoid-dysentery group. As it has been suggested by some British and American workers that streptococci may cause outbreaks of enteritis of this description, films were made from each sample of fæces. Streptococci were seen in some of the films, but in others none was found. Six samples of fæces were plated on blood-agar, but only from two were streptococci obtained—*Streptococcus faecalis* and *S. viridans*.

Twenty strains of Gram-negative bacilli were isolated from McConkey plates and blood-agar plates. Some of these strains produced acid in lactose and in others sugars, without the formation of gas; others were non-lactose fermenters which did not conform to the sugar reactions of the paratyphoid group otherwise than in producing acid and gas in glucose and mannite, and they did not react to any known serum. The sera of the four individuals in hospital gave negative results against the strains of organisms isolated from the various specimens of fæces.

B. *Blood Cultures*.—Three blood cultures were taken from patients in the acute stage of the disease. All were found to be sterile.

C. *Agglutination reactions*.—Four samples of blood were taken in the second week from cases which had suffered severely from the enteritis. The sera were tested against *B. paratyphosus* B., *B. paratyphosus* B. (Mutton), *B. paratyphosus* B. (Newport), *B. dysenteriae* (Flexner) V, W, X, Y, Z and *B. dysenteriae* Shiga. No agglutination was obtained in any diagnostic dilution even after incubation at 55° C. for 24 hours.

In view of the fact that in a previous dysenteric outbreak agglutinins had been found to be present in the blood serum of cases in the fourth week of illness although such agglutinins had not been demonstrated at an earlier stage of illness, blood serum specimens were obtained from six typical cases four weeks after they had suffered from the infection, but no agglutinative results of diagnostic significance were obtained in any of the cases. In general, these negative laboratory findings were confirmed by Dr. Savage and Mr. Bruce White working with similar laboratory specimens delayed in transit.

2. Cases at Farm.

A. *Agglutination reactions*.—The sera of the five individuals at the farm who were capable of originating directly or indirectly the infection, were tested against paratyphoid, Gaertner, dysentery organisms. No agglutinations were obtained.

B. Faeces.—The faeces of these five individuals, directly or indirectly capable of milk infection at the farm, were not found to contain any known pathogenic non-lactose fermenting organism.

The nature of the infection in this outbreak of milk poisoning remains, therefore, entirely undetermined, although the cases were subject to complete clinical and bacteriological investigation from their first onset.

Dr. Savage is of opinion that this milk-borne enteritis was due to a living bacillus of unrecognised type of a strain allied to *B. dysenteriae*.

CONCLUSION.—In view of the Aberdeen experience, it seems reasonable to suggest, (a) that, even under the most advantageous conditions, modern bacteriological methods not infrequently fail to provide proof of the nature of Gaertner-dysenteric group infections, or (b) that viruses hitherto undetected can originate diarrhoeal outbreaks simulating clinically Gaertner-dysenteric infections.

Meat Poisoning.—A small outbreak of meat poisoning occurred in a family on 5th April, 1923, involving 3 out of 5 members of the family. The food causing the poisoning was 1 lb. of corned beef obtained from a 6-lb. tin of beef prepared in South America by a well-known firm of meat canners. All the members of the family complained of the taste of the meat, and the mother and daughter rejected it on this account. The father and two sons were all taken ill about three hours after partaking of the meat, the son who had taken the largest portion of the meat being most severely ill. The symptoms began with vomiting, and the vomiting was accompanied by profuse sweating followed by acute diarrhoea and shivering. The acute symptoms of vomiting and diarrhoea continued for about four hours, and left the patients considerably collapsed. Within 24 to 48 hours recovery was apparently complete. The remainder of the meat from the tin that had caused the poisoning was secured for examination, as also specimens of blood and faeces from the three patients. All these specimens were submitted to a complete bacteriological and chemical examination at the City Hospital Laboratory, but with negative results.

Diarrhoea Due to the Sonne Bacillus.—An interesting outbreak of enteritis due to infection with the Sonne Bacillus occurred in the marasmus ward of the City Hospital. The report of the bacteriological investigation of this outbreak, as recorded by Dr. John Smith, City Bacteriologist, is herewith submitted:—

In recent years outbreaks of dysentery and enteritis have been found, on occasion, to be due to late lactose fermenting organisms allied to the Flexner dysentery group. Sonne (1915) found that the main cause of dysentery in Copenhagen was a late lactose fermenting bacillus. D'Herelle (1916) in France and Ohnell (1918) in Sweden also found this atypical organism to be associated with cases of dysentery. Andrewes (1918) suggested the name *B. dispar* for lactose fermenting members of the dysentery group, which he obtained from cases of suspected dysentery and from convalescents. Thjotta (1919) in Norway while investigating cases of dysentery obtained 40 strains of Flexner dysentery bacilli (Thjotta group II.) and 25 strains of the Sonne type (Thjotta group III.). He explained that the less frequent finding of the Sonne type was due to the fact that this organism often caused a mild diarrhoea that was not sufficiently serious to necessitate the services of a physician, with the result that the cases were not subjected to bacteriological investigation. He showed that the Sonne bacilli had the following characteristics, viz.: Large irregular crenated colonies grew on litmus lactose agar

plates; acid was produced in maltose and glucose, and occasionally in lactose; no indol was produced; and serologically the group showed no relationship to the other groups of dysentery bacilli (Flexner and Shiga).

In Japan, Mita (1921) isolated from children who clinically were suffering from dysentery, bacilli similar in their cultural characteristics to the type described by Sonne. These strains he called para-dysentery bacilli. In a further paper Thjotta and Sundt (1921) showed that the Sonne bacillus produced both an endotoxin and an exotoxin. The endotoxin was the most marked in effect and produced intestinal symptoms in rabbits and mice. The exotoxin was mild in its action as compared with the exotoxin of *B. dysenteriae* Shiga and produced paresis in rabbits while mice reacted non-specifically to it. In Australia, Paterson and Williams (1922) recovered the Sonne bacillus from patients suffering from enterocolitis, dysentery, and summer diarrhoea. They found that this organism produced acid in lactose peptone water in from seven to ten days, but after repeated sub-culture the acid production occurred earlier. The bacilli were agglutinated in low dilution by a monovalent serum prepared from the X strain of Flexner dysentery bacilli of Andrewes and Inman (1919), but the absorption test showed that the homologous agglutinins were not removed. More recently Bamforth (1924) has described a small outbreak of dysentery due to a late lactose fermenting type. The serological relationship of the causative organism to the Sonne bacillus was not established.

Clinical Features of Cases.—In December, 1923, a small outbreak of enteritis occurred in a ward of the City Hospital, involving within a period of 24 hours four infants whose ages ranged from 5 to 15 months.

The first case occurred on the evening of 28th December and the remaining three in the course of the next day. Attention was drawn to the condition by an elevation of temperature accompanied by a corresponding acceleration of the pulse rate. The maximum temperature was attained within 24 hours and varied from 100·4° to 101·8°. Abdominal distension and subsequent passage of mucus were common features, while two of the cases showed traces of blood in the stools. Abdominal pain was not a noticeable symptom, nor was diarrhoea a prominent feature. The symptoms lasted from 36 hours to 4½ days and recovery took place in every case, only one patient showing loss of weight as a result.

Bacteriological Findings.—From the faeces of two out of the four cases non-lactose fermenting colonies were obtained on M'Conkey plates at the first examination. The colonies were not numerous, two colonies being obtained on one plate and one on another. The colonies were larger than those of the true dysentery bacilli, and when the strains were replated on agar showed markedly crenated edges. Growth on an agar slope showed no special characteristics. The two strains, tested immediately after isolation, gave the following fermentation reactions:—

	Allan Strain.				Hendry Strain.			
Day of incubation	1	8	10	...	1	8	10	
Lactose	0	S.A.	A.	...	0	S.A.	A.	
Mannite	A.	A.	A.	...	A.	A.	A.	
Glucose	A.	A.	A.	...	A.	A.	A.	
Dulcitol	0	0	0	...	0	0	0	
Saccharose	0	0	0	...	0	0	0	
Sorbitol	0	0	0	...	0	0	0	
Salicin	0	0	0	...	0	0	0	
Milk	A.	A.	A.	...	A.	A.	A.	
A. = Acid. S.A. = Slight Acid. 0 = No change.								

The organisms were found to be non-motile. They did not produce indol, and did not liquefy gelatin. Lead acetate medium showed definite blackening and both strains were capable of reducing nitrates to nitrites.

Two months after the Allan and Hendry strains had been isolated, *B. dysenteriae* Sonne (No. 268) was obtained from the National Collection of Type Cultures and the three strains were retested against an extended series of sugars. The strains were incubated for 14 days and the summarised results of the fermentation tests are as follows:—

A. *Mono. accharides.*

1. Hexoses.

Dextrose, laevulose, galactose, mannose.

All strains produced acid in 24 hours.

2. Pentoses.

Arabinose, xylose.

All strains produced acid in 24 hours in arabinose, but no change occurred in xylose.

3. Methyl Pentose.

Rhamnose.

All strains produced acid in 24 hours.

B. *Disaccharides.*

1. Maltose.

All strains produced acid in 24 hours.

2. Lactose.

B. dysenteriae Sonne No. 268 produced slight acid on the third day and very definite acidity after five days' incubation. The Allan and Hendry strains produced a slight acid change on the second day and the medium was markedly acid on the third day.

3. Saccharose.

Acid was produced by all strains in 24 hours. At the first test the Allan and Hendry strains produced no acid in 10 days.

4. Trehalose.

All strains produced acid in 24 hours.

C. *Trisaccharides.*

1. Raffinose and Melezitose.

No acid production occurred with melezitose, but *B. dysenteriae* Sonne No. 268 produced acid in raffinose in 24 hours. The other strains did not cause any change in 14 days.

D. *Polysaccharides.*

1. Dextrin.

All strains produced slight acid after 24 hours' incubation, but the medium became definitely alkaline in three days.

2. Starch and Inulin.

No change occurred.

E. *Alcohols.*

Mannitol, Glycerol, Dulcitol, Sorbitol.

All strains produced acid in mannitol in 24 hours, and all strains produced slight acid in glycerol on the third day and definite acidity by the fifth day. The media containing dulcitol and sorbitol were unaffected by any of the strains.

F. *Glucosides.*

Salicin and Inosite.

No change occurred.

After isolation the Allan and Hendry strains were found to be pathogenic for rabbits. One-fifth of an agar slope culture when given intravenously killed rabbits in 24 hours and 2 c.c. of a killed broth culture also produced this effect. The result of intraperitoneal inoculation of guinea-pigs and mice was uncertain, some of the animals surviving.

Blood was obtained from all four patients ten days after the commencement of the illness. The serum of one patient, from whom the bacillus was not isolated, but who was ill for 4½ days agglutinated the Allan and Hendry strains to 1 in 240 and 1 in 480 respectively. The serum from the patient Hendry agglutinated the Hendry and Allan strains in a dilution of 1 in 50.

Ten normal sera gave no agglutination against the Allan and Hendry strains in a dilution of 1 in 30. The sera from the patients were tested against the V, W, X, Y, and Z strains of Flexner bacilli and against *B. dysenteriae* Shiga, but no agglutination was obtained in a dilution of 1 in 60.

Agglutinating sera were prepared for *B. dysenteriae* Sonne No. 268 and for the Allan and Hendry strains. The serum for *B. dysenteriae* Sonne agglutinated the Allan and Hendry strains to titre (1 in 1500), the Allan serum agglutinated strains No. 268 and Hendry to titre (1 in 1000) and the Hendry serum agglutinated strains No. 268 and Allan to titre (1 in 2000).

Absorption of agglutinins showed the following:—

Serum.	Titre.	Titre after absorption with Strain No. 268.	Titre after absorption with Strain Allan	Titre after absorption with Strain Hendry
No. 268	1500	nil.	nil.	nil.
Allan	1000	nil.	nil.	nil.
Hendry	2000	nil.	nil.	nil.

The strains were tested against monovalent sera prepared from *B. dysenteriae* Flexner V, W, X, Y, and Z, and *B. dysenteriae* Shiga. The V serum which had a titre of 1 in 20,000 agglutinated all the strains (No. 268, Allan and Hendry) to a titre of 1 in 400, but the absorption agglutinin tests showed that the homologous agglutinins were not removed. Agglutinating sera prepared against *B. typhosus*, *B. paratyphosus* A, *B. paratyphosus* B, and *B. enteritidis* Gaertner had no action on any of the strains.

The effort to trace the source of infection was unsuccessful, the faeces of the other patients in the ward and of the nursing staff in charge of the children being examined with negative results.

REFERENCES—

- ANDREWES, F. W. (1918). *Lancet*, i. 560.
 ANDREWES, F. W., AND INMAN, A. C. (1919). Medical Research Council: *Special Report Series*, No. 42.
 BAMFORTH, J. (1924). *Journ. of Hyg.* xxii. 343.
 D'HERELLE, H. (1916). *Ann. de l'Inst. Pasteur*, xxx. 145.
 MITA, K. (1921). *Journ. Inf. Dis.* xxix. 580.
 OHNELL, H. (1918). *Kliniska och bakteriologiska bidrag till kannedomen om dysenterien i Sverige*, Stockholm.
 PATERSON, S. W., AND WILLIAMS, F. E. (1922). *Journ. Path. and Bact.* xxv. 393.
 SONNE, C. (1915). *Centralbl. f. Bakt.* xxiii. 599.
 THJOTTA, TH. (1919). *Journ. Bact.* iv. 355.
 THJOTTA, TH., AND SUNDT, O. F. (1921). *Journ. Bact.* vi. 501.

Bacillary Dysentery.—Six cases of this disease, with 1 death, were reported during 1922, there being no cases during the year 1923. Bacillary dysentery became compulsorily notifiable on 1st August, 1919, there being 7 cases notified during that year, 17 during 1920, and 24 during 1921; the number of deaths during these three years being respectively, 0, 4, and 7.

Chart 17 shows the attack incidence and case-mortality of Dysentery from 1919 to 1923, and includes the epidemic of milk-borne bacillary dysentery that occurred in 1919 prior to the dysenteries being made compulsorily notifiable, and which occasioned 978 known cases and 72 deaths.

Typhus Fever.—There were no cases of this disease during the years under review. With the exception of 3 cases in 1911, all of which were confined to one family, there have been no cases of typhus in Aberdeen since the epidemic of 1905.

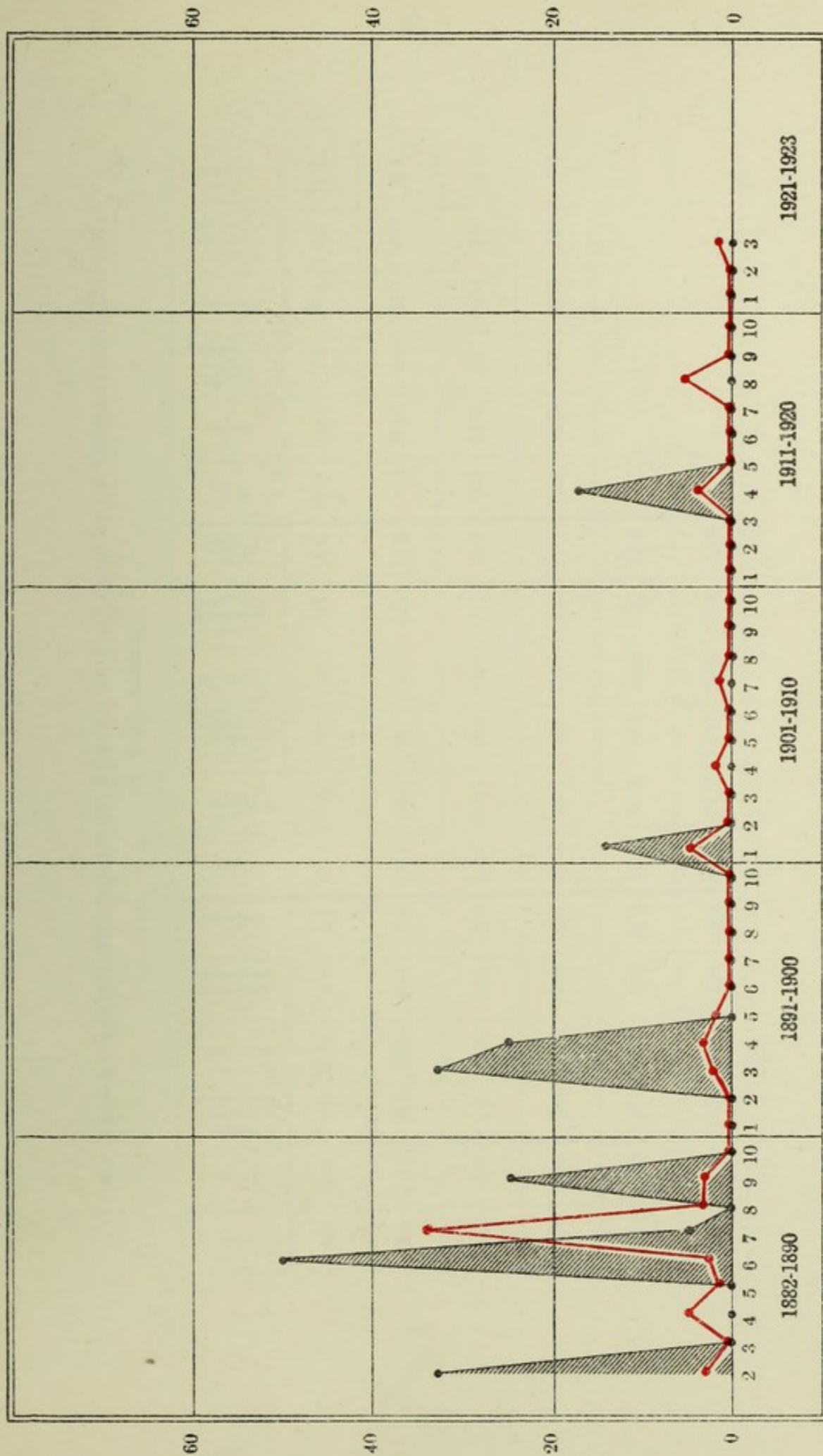
Small-pox.—A case of small-pox was notified on 2nd March, 1923, the patient having sickened on 24th February. The patient was employed as an engineer on a ship, and there is little doubt that he contracted the infection in Goole, Yorkshire, on 12th February. He had only been in Aberdeen a few hours when the period of onset of illness developed. The patient, on first being seen on the fifth day of illness, exhibited a profuse small-pox eruption. He was immediately admitted to the City Fever Hospital. All known contacts with the patient were re-vaccinated and disinfected, immediate contacts, viz., his wife and family, being quarantined in the City Hospital until re-vaccination had been successfully secured and the period of incubation had elapsed. The patient's house and all its contents were thoroughly disinfected. The patient made an uninterrupted recovery, and no secondary cases of small-pox occurred.

No cases were reported during 1922. The most recent occasion on which small-pox had previously occurred in the City was in 1918, when 8 cases developed at the end of the year following on a sequence of three years without any small-pox.

Chart 4 shows the attack incidence and case-mortality of Small-pox from 1882 to 1923.

VACCINATIONS.—The passing of the Vaccination (Scotland) Act, 1907, permitted exemption from vaccination of those children whose parents declared formally that they had conscientious objection to their vaccination. The accompanying Table (Table XI.) shows the percentage of the total surviving children at the end of the calendar year following the year of birth who have thus remained unvaccinated, in each year from 1907 to 1922. It is found that the number of conscientious objectors continued to increase year by year from 1907 to 1913. In 1907, the proportion of children thus escaping vaccination was only 2·1 per cent. of the children born, and this percentage steadily increased year by year until 1913, when 14·4 per cent. was unvaccinated. Fortunately this percentage of 14·4 for 1913 proved to be the highest proportion that has yet been recorded since the Act produced the conscientious objector. During the 6 years 1914-1919, the percentages averaged 11·6, ranging from 10·5 to 12·3. In 1920, the percentage fell to 6·4; and in 1921 and 1922 it rose again to 9·4 and 9·6 respectively. The fall in the percentage of conscientious objectors to vaccination was due to the fear of infection that the Glasgow epidemic of small-pox had aroused, and was due in particular to the vaccinia propagandism instituted in this connection by the Health Department.

The immediate injuries and complications resulting from vaccination have been very fully discussed in the literature of the subject. It would appear that while the infectious disease vaccinia is mild, danger lies in the possible infection of the open wound, and that improved quality of vaccine virus and use of aseptic methods have greatly diminished this risk. It has been alleged, however, that the constitutional disturbance produced by vaccination in the first year of life cannot be regarded as other than serious, since the effect of any mild infection at that tender age can gravely prejudice the child's future growth and diminish its resistance to disease. In an investigation that has been recorded elsewhere it was found that evidence in this connection might be obtained by observing the effect of other



SMALL-POX — { Attack Incidence (per 100,000 of population)
Case Mortality (per 100 cases) } in each year 1882-1923.



TABLE XI.—ABERDEEN.—STATEMENT OF NUMBER OF DECLARATIONS OF CONSCIENTIOUS OBJECTION
TO VACCINATION.

Year.	Births.	Deaths before vaccination	Survivors.	Con- scientious Objectors.	Per- centage.	Year.	Births.	Deaths before vaccination	Survivors.	Con- scientious Objectors.	Per- centage.	Year.	Births.	Deaths before vaccination	Survivors.	Con- scientious Objectors.	Per- centage.
1907	4504	470	4034	84	2.1	1913	3872	467	3405	491	14.4	1919	3481	357	3124	357	11.4
1908	4450	511	3939	219	5.6	1914	4041	481	3560	413	11.6	1920	5010	500	4510	290	6.4
1909	4492	526	3966	339	8.5	1915	3837	483	3354	412	12.3	1921	4326	457	3869	364	9.4
1910	4300	448	3852	362	9.4	1916	3627	401	3226	345	10.7	1922	4038	398	3640	348	9.6
1911	4028	478	3550	406	11.4	1917	2966	326	2640	347	13.1						
1912	4152	511	3641	478	13.1	1918	2817	351	2466	260	10.5						

infectious diseases in vaccinated as compared with unvaccinated children, and for the satisfaction of parents who continue to dread the after effects of vaccinia, it has to be pointed out that the investigation made it abundantly clear that no evidence was obtainable that vaccination had a prejudicial effect upon a child's future wellbeing as judged by its response to subsequent infections.

Chicken-pox.—This disease was made compulsorily notifiable during the latter half of 1923. In making chicken-pox thus notifiable, the Board had the intention of making it more certain that cases of small-pox might not escape the attention of the Local Authorities on account of a possible mistake in diagnosis, as between chicken-pox and small-pox, by the medical attendant, in view of the remarkable epidemic of small-pox that was then in progress in Gloucester and many other districts in England.

Measles.—Measles ceased to be compulsorily notifiable in 1903, but a large proportion of the cases is brought to the knowledge of the Health Department by the visits of the attendance officers of the Education Authority to the homes of the children who are absent from school. The following up of such cases brings to light many cases of measles in children of pre-school age in the families visited. The number of cases of measles coming to the knowledge of the Health Department in this way in 1922 was 3,684, and in 1923, 594. The average yearly number of cases during the 1913-1922 decennium was 1,126.

The case mortality of measles in 1922 and 1923 was 3·9 and 6·9 per cent. respectively, the average for the 1913-1922 decennium being 5·6 per cent.

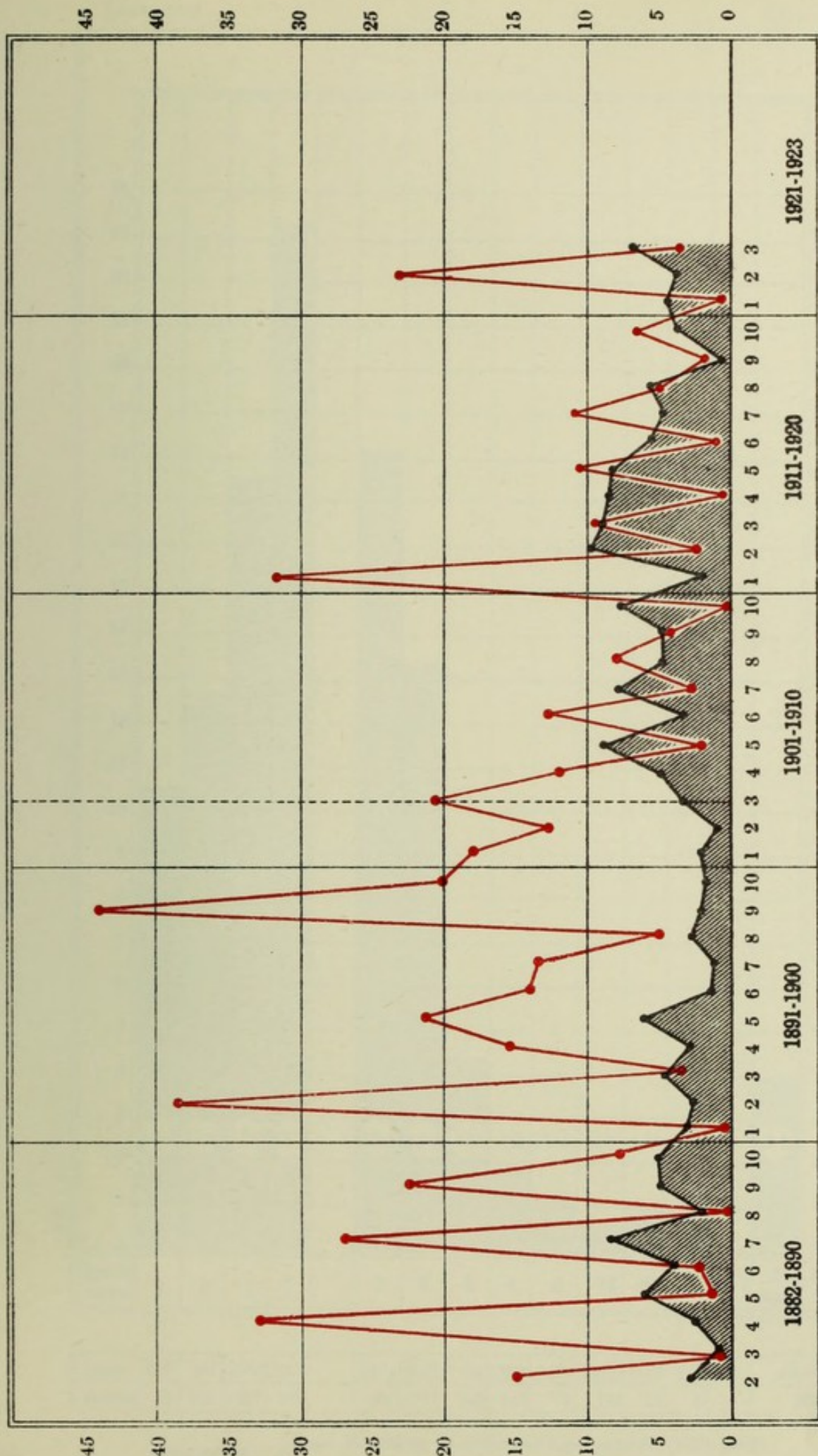
The deaths from measles were almost wholly confined to children of tender years. Thus, during the 2 years under report there were 173 deaths among 1,924 cases of children under five years of age, while there were only 10 deaths among 2,319 children above five years of age.

Measles began to assume epidemic prevalence in September, 1922, and the epidemic reached its highest point in November, when there were 1,610 cases with 58 deaths. In December the epidemic was rapidly declining, and it ceased by the end of January, 1923. The total number of cases brought to the knowledge of the Health Department during these months of the epidemic was 3,901, with 165 deaths, giving a case-mortality of 4·2 per cent.; but since the number of cases brought to the knowledge of the Department through the school attendance officers and otherwise probably constituted less than half of the total cases of measles during the epidemic, the mortality figure may be regarded as being altogether unduly high.

The most recent former epidemic of measles occurred at the end of 1919 and the beginning of 1920, and accordingly measles prevalence continues to exhibit a periodicity of roughly three years.

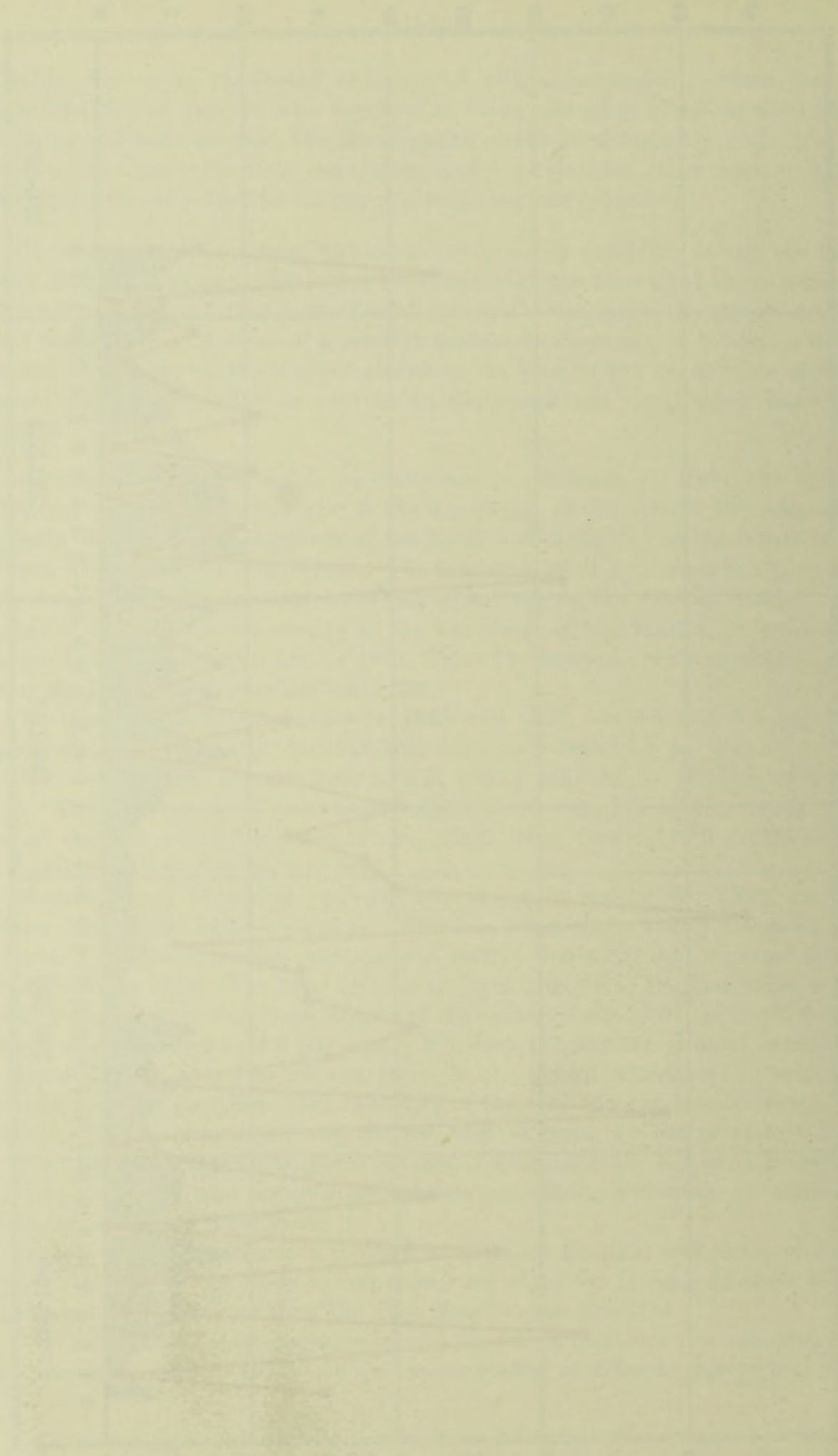
During the 1922 epidemic a pavilion at the City Hospital was made available for the treatment of the more serious cases, and visitation of cases in their homes by infectious disease nurses from the City Hospital was provided.

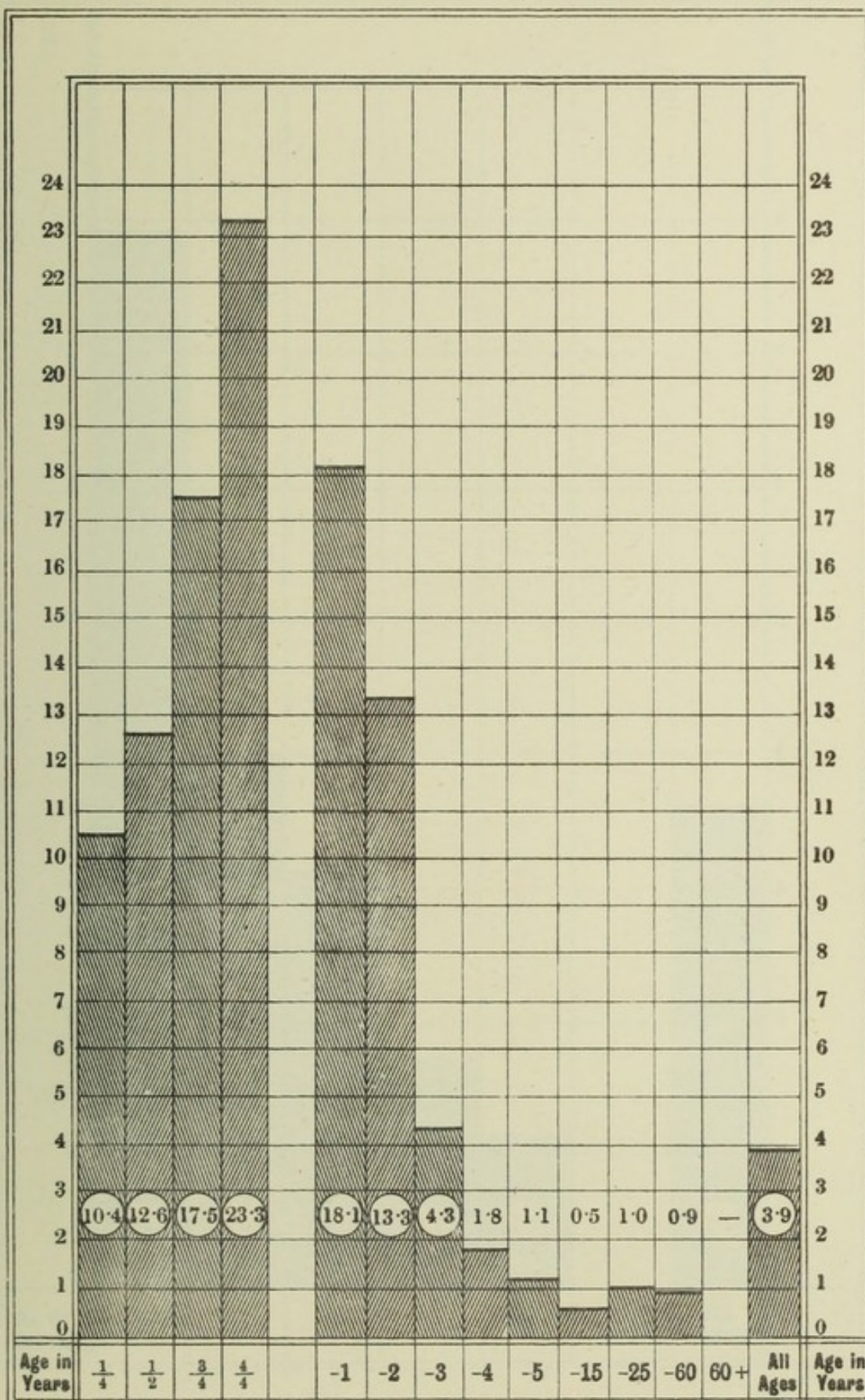
Charts 5, 6, and 7 show respectively—(a) the attack incidence and case-mortality of Measles from 1892 to 1923; (b) the case-mortality at different age-periods from



MEASLES — { Attack Incidence (per 1,000 of population)
Case Mortality (per 100 cases) } in each year 1882-1923.

Compulsory Notification ceased February, 1903.

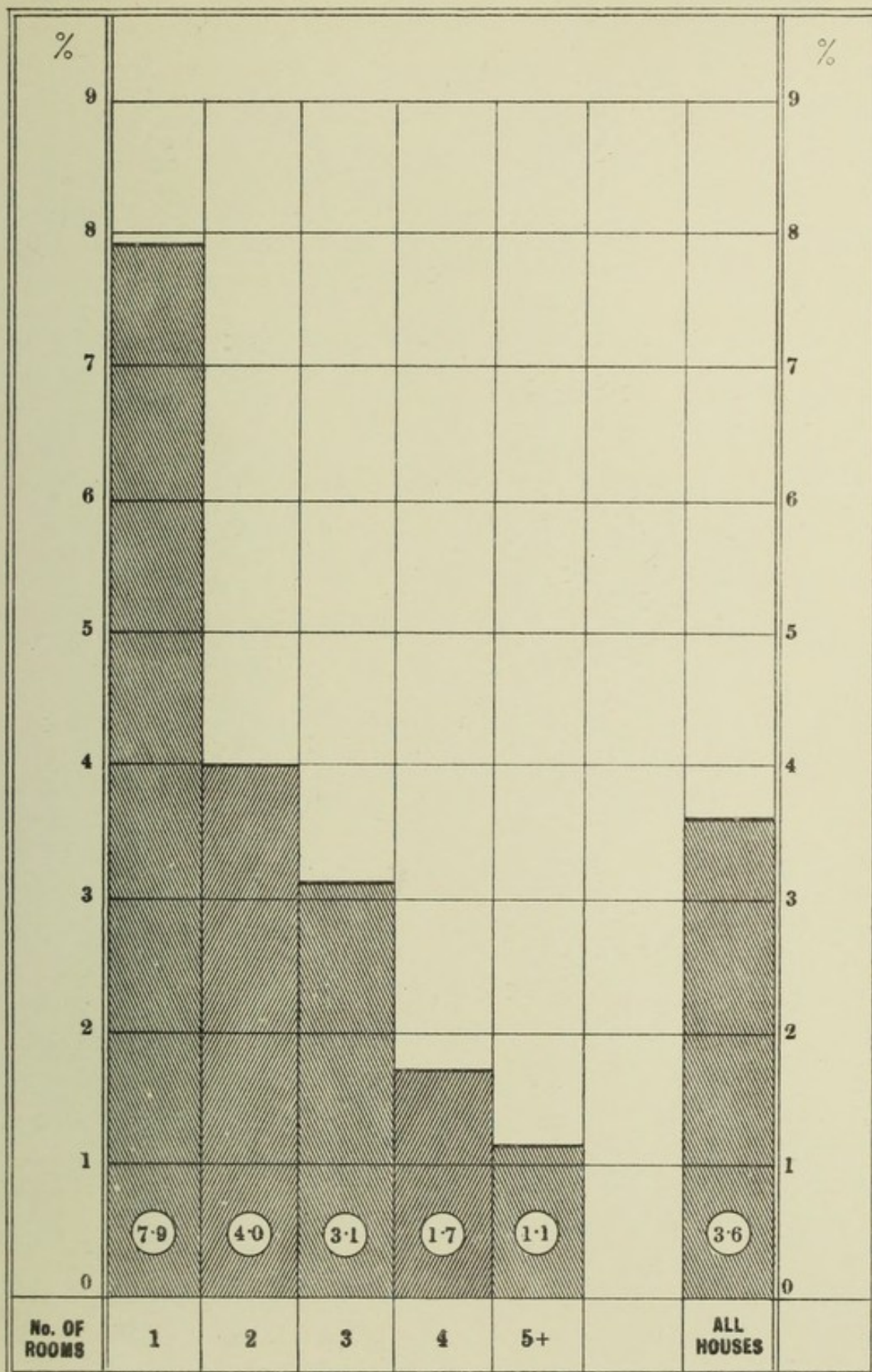




Cases	326	860	1868	1624	4678	8001	7991	7923	7476	30330	1149	447	7	68,002
Deaths	34	108	327	379	848	1061	342	142	79	144	11	4	—	2631

MEASLES — { Case Mortality at different age periods (1891-1923)
(Per 100 cases notified).

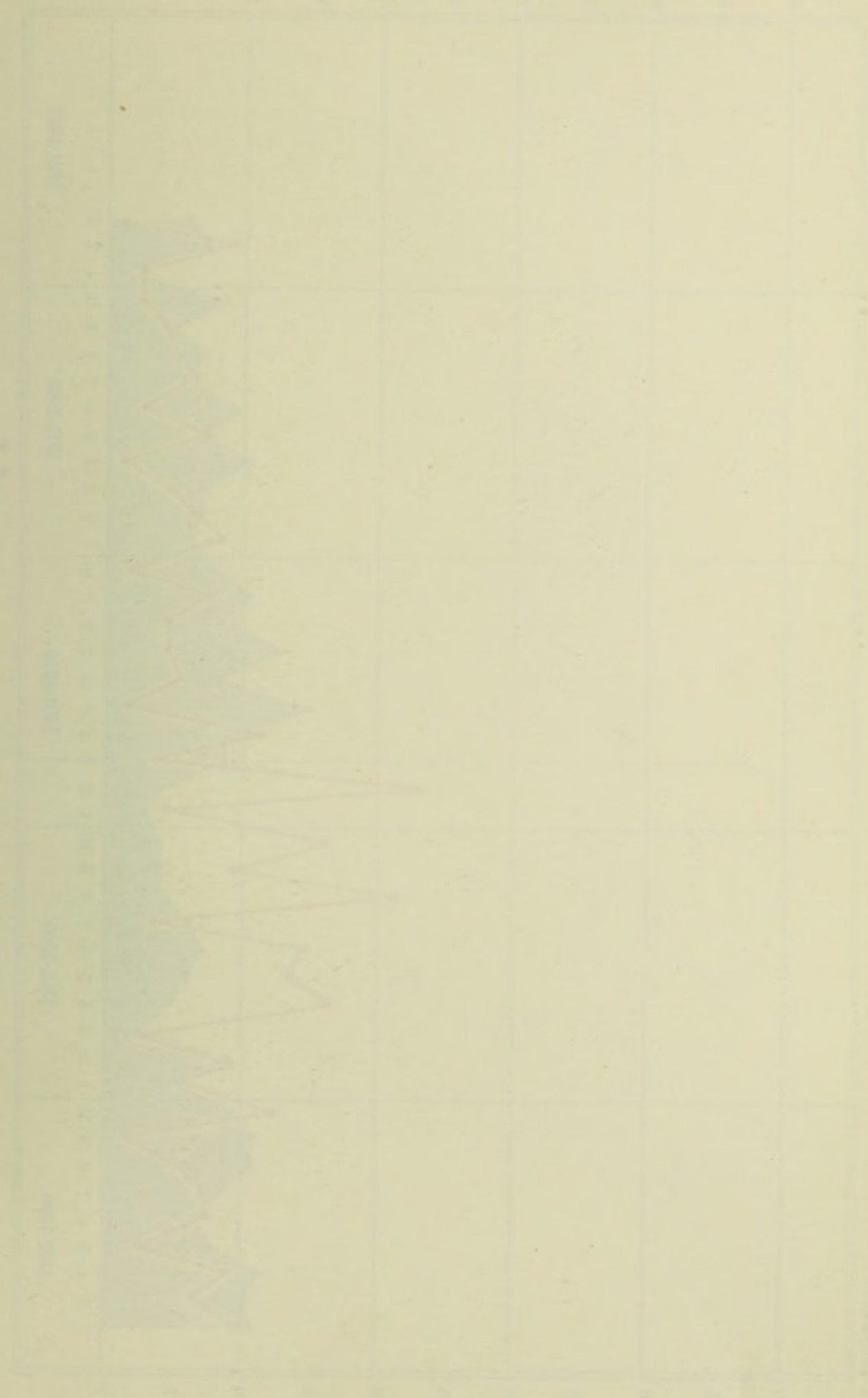
Table 1. Summary of the results of the analysis of variance for the effect of the treatment on the growth of the fish.									
Treatment	Initial weight (g)	Final weight (g)	Weight gain (g)	Survival (%)	Survival (n)	Survival (m)	Survival (f)	Survival (t)	Survival (a)
Control	100	150	50	100	10	10	10	10	10
1	100	120	20	100	10	10	10	10	10
2	100	130	30	100	10	10	10	10	10
3	100	140	40	100	10	10	10	10	10
4	100	160	60	100	10	10	10	10	10
5	100	170	70	100	10	10	10	10	10
6	100	180	80	100	10	10	10	10	10
7	100	190	90	100	10	10	10	10	10
8	100	200	100	100	10	10	10	10	10
9	100	210	110	100	10	10	10	10	10
10	100	220	120	100	10	10	10	10	10
11	100	230	130	100	10	10	10	10	10
12	100	240	140	100	10	10	10	10	10
13	100	250	150	100	10	10	10	10	10
14	100	260	160	100	10	10	10	10	10
15	100	270	170	100	10	10	10	10	10
16	100	280	180	100	10	10	10	10	10
17	100	290	190	100	10	10	10	10	10
18	100	300	200	100	10	10	10	10	10
19	100	310	210	100	10	10	10	10	10
20	100	320	220	100	10	10	10	10	10
21	100	330	230	100	10	10	10	10	10
22	100	340	240	100	10	10	10	10	10
23	100	350	250	100	10	10	10	10	10
24	100	360	260	100	10	10	10	10	10
25	100	370	270	100	10	10	10	10	10
26	100	380	280	100	10	10	10	10	10
27	100	390	290	100	10	10	10	10	10
28	100	400	300	100	10	10	10	10	10
29	100	410	310	100	10	10	10	10	10
30	100	420	320	100	10	10	10	10	10
31	100	430	330	100	10	10	10	10	10
32	100	440	340	100	10	10	10	10	10
33	100	450	350	100	10	10	10	10	10
34	100	460	360	100	10	10	10	10	10
35	100	470	370	100	10	10	10	10	10
36	100	480	380	100	10	10	10	10	10
37	100	490	390	100	10	10	10	10	10
38	100	500	400	100	10	10	10	10	10
39	100	510	410	100	10	10	10	10	10
40	100	520	420	100	10	10	10	10	10
41	100	530	430	100	10	10	10	10	10
42	100	540	440	100	10	10	10	10	10
43	100	550	450	100	10	10	10	10	10
44	100	560	460	100	10	10	10	10	10
45	100	570	470	100	10	10	10	10	10
46	100	580	480	100	10	10	10	10	10
47	100	590	490	100	10	10	10	10	10
48	100	600	500	100	10	10	10	10	10
49	100	610	510	100	10	10	10	10	10
50	100	620	520	100	10	10	10	10	10
51	100	630	530	100	10	10	10	10	10
52	100	640	540	100	10	10	10	10	10
53	100	650	550	100	10	10	10	10	10
54	100	660	560	100	10	10	10	10	10
55	100	670	570	100	10	10	10	10	10
56	100	680	580	100	10	10	10	10	10
57	100	690	590	100	10	10	10	10	10
58	100	700	600	100	10	10	10	10	10
59	100	710	610	100	10	10	10	10	10
60	100	720	620	100	10	10	10	10	10
61	100	730	630	100	10	10	10	10	10
62	100	740	640	100	10	10	10	10	10
63	100	750	650	100	10	10	10	10	10
64	100	760	660	100	10	10	10	10	10
65	100	770	670	100	10	10	10	10	10
66	100	780	680	100	10	10	10	10	10
67	100	790	690	100	10	10	10	10	10
68	100	800	700	100	10	10	10	10	10
69	100	810	710	100	10	10	10	10	10
70	100	820	720	100	10	10	10	10	10
71	100	830	730	100	10	10	10	10	10
72	100	840	740	100	10	10	10	10	10
73	100	850	750	100	10	10	10	10	10
74	100	860	760	100	10	10	10	10	10
75	100	870	770	100	10	10	10	10	10
76	100	880	780	100	10	10	10	10	10
77	100	890	790	100	10	10	10	10	10
78	100	900	800	100	10	10	10	10	10
79	100	910	810	100	10	10	10	10	10
80	100	920	820	100	10	10	10	10	10
81	100	930	830	100	10	10	10	10	10
82	100	940	840	100	10	10	10	10	10
83	100	950	850	100	10	10	10	10	10
84	100	960	860	100	10	10	10	10	10
85	100	970	870	100	10	10	10	10	10
86	100	980	880	100	10	10	10	10	10
87	100	990	890	100	10	10	10	10	10
88	100	1000	900	100	10	10	10	10	10
89	100	1010	910	100	10	10	10	10	10
90	100	1020	920	100	10	10	10	10	10
91	100	1030	930	100	10	10	10	10	10
92	100	1040	940	100	10	10	10	10	10
93	100	1050	950	100	10	10	10	10	10
94	100	1060	960	100	10	10	10	10	10
95	100	1070	970	100	10	10	10	10	10
96	100	1080	980	100	10	10	10	10	10
97	100	1090	990	100	10	10	10	10	10
98	100	1100	1000	100	10	10	10	10	10
99	100	1110	1010	100	10	10	10	10	10
100	100	1120	1020	100	10	10	10	10	10

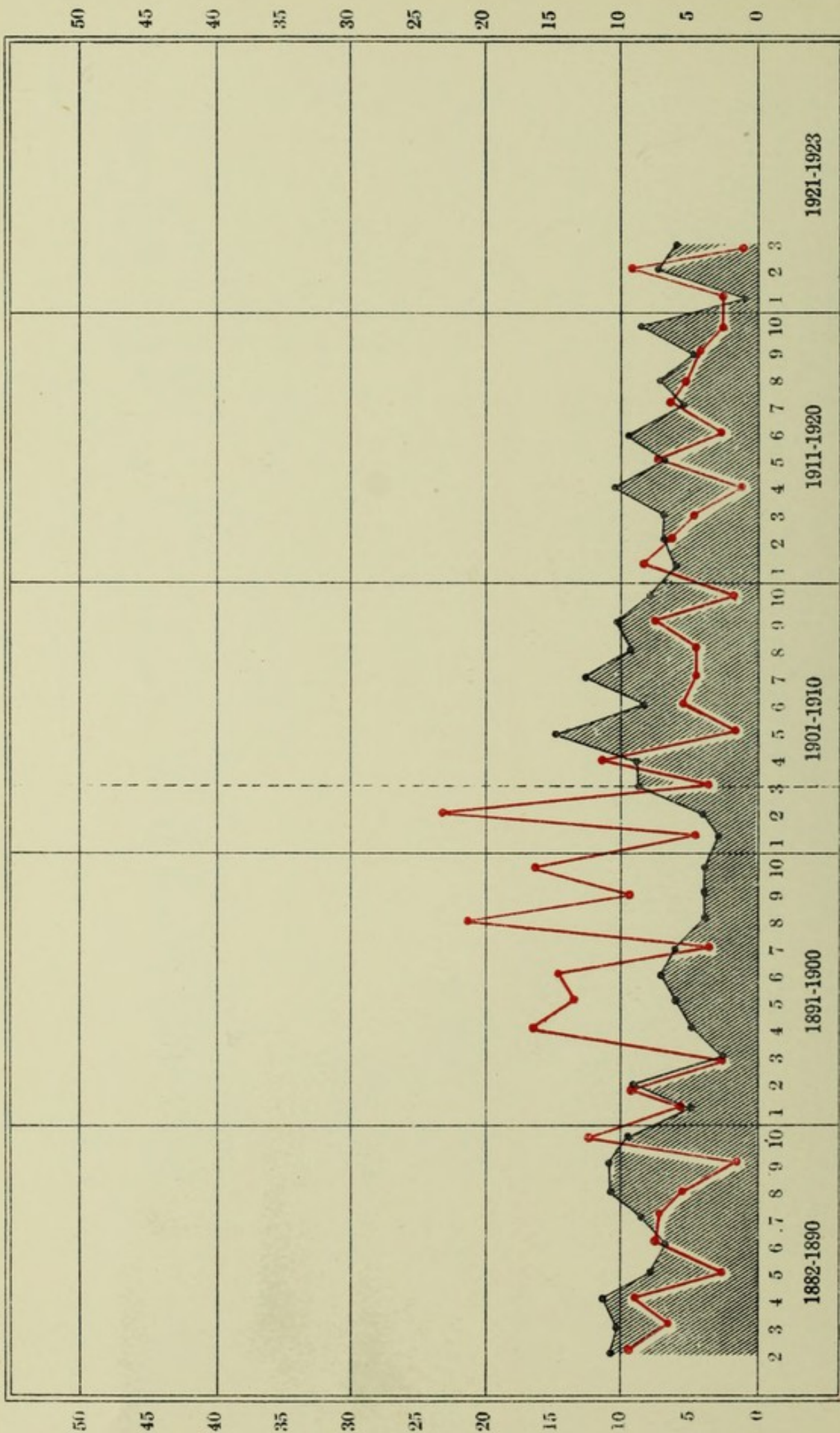


CASES	2,878	25,728	14,658	3,888	4,106	51,258
DEATHS	228	1,029	461	67	46	1,831

MEASLES — { Case Mortality in different sizes of houses (1893-1923)
(Per 100 cases notified).

WATER LEVELS AT THE STATION DURING THE YEAR 1900





WHOOPING COUGH — { Attack Incidence (per 1,000 of population)
Case Mortality (per 100 cases) }

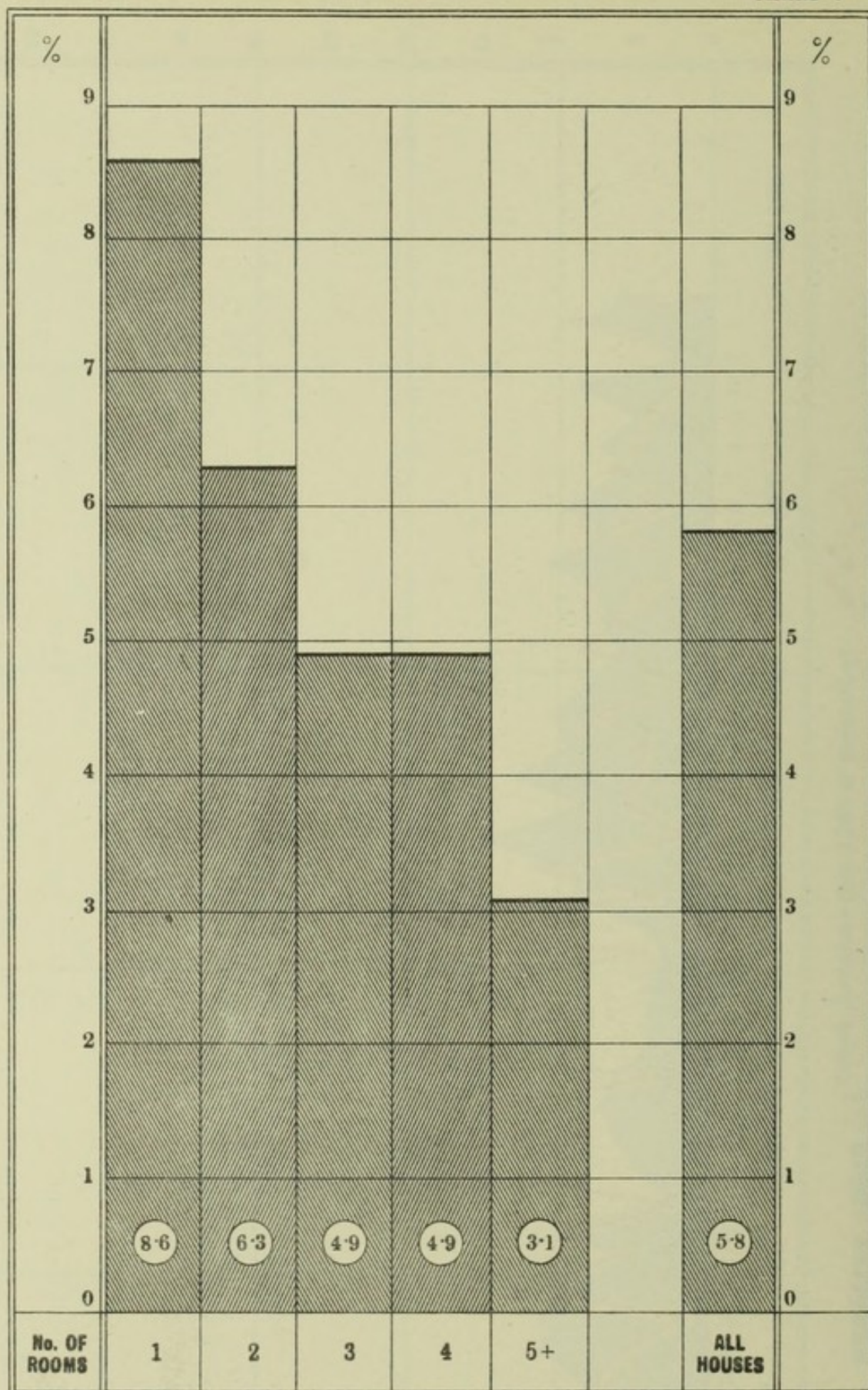
in each year 1882-1923

Compulsory Notification ceased February, 1903.



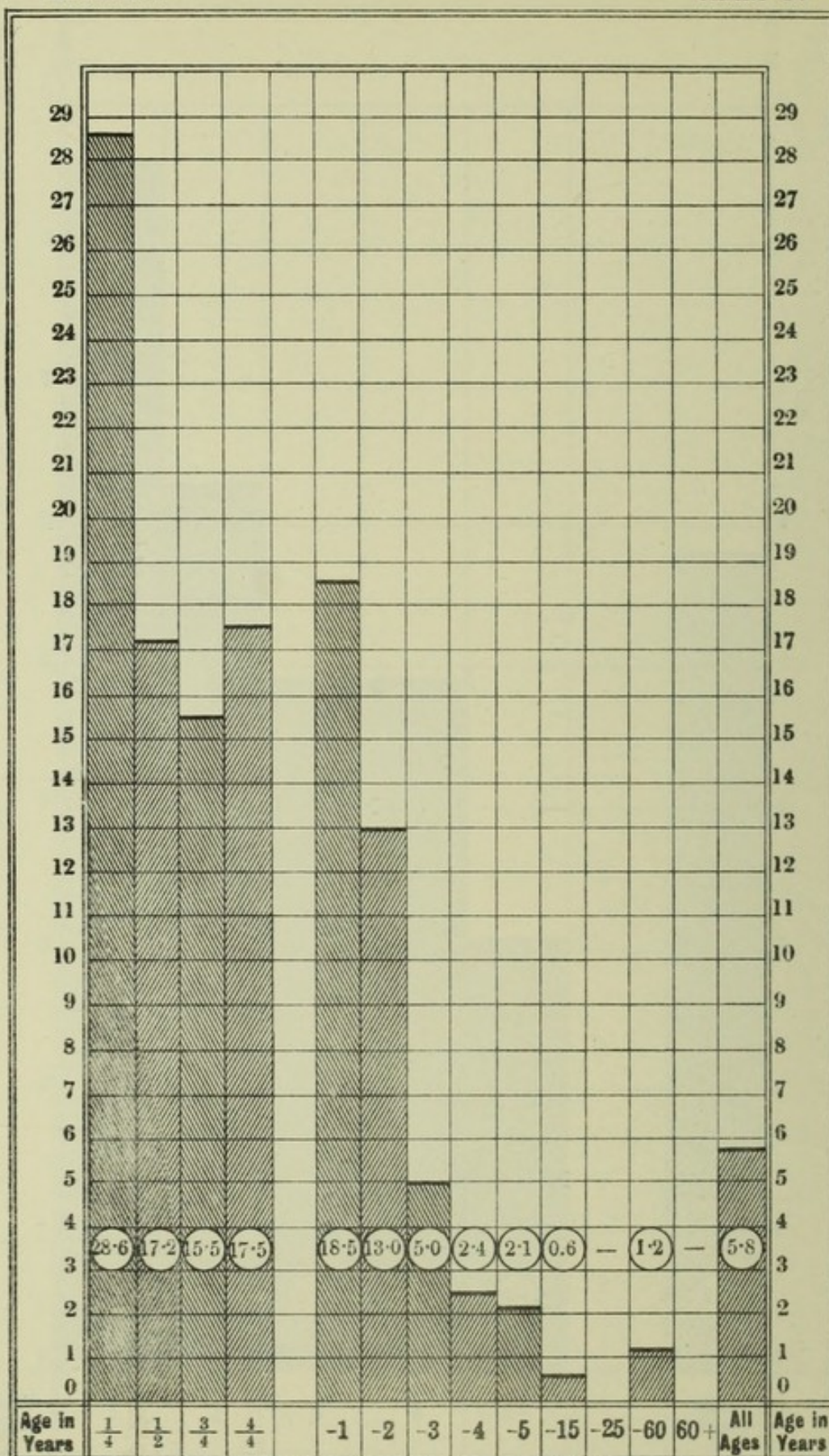
THIS FORM IS TO BE USED FOR THE PURPOSES OF THE ACT OF MARCH 3, 1879, CHAP. 122, SECTION 1, AND FOR THE PURPOSES OF THE ACT OF MARCH 3, 1879, CHAP. 122, SECTION 2.

THESE FORMS ARE TO BE USED FOR THE PURPOSES OF THE ACT OF MARCH 3, 1879, CHAP. 122, SECTION 1, AND FOR THE PURPOSES OF THE ACT OF MARCH 3, 1879, CHAP. 122, SECTION 2.



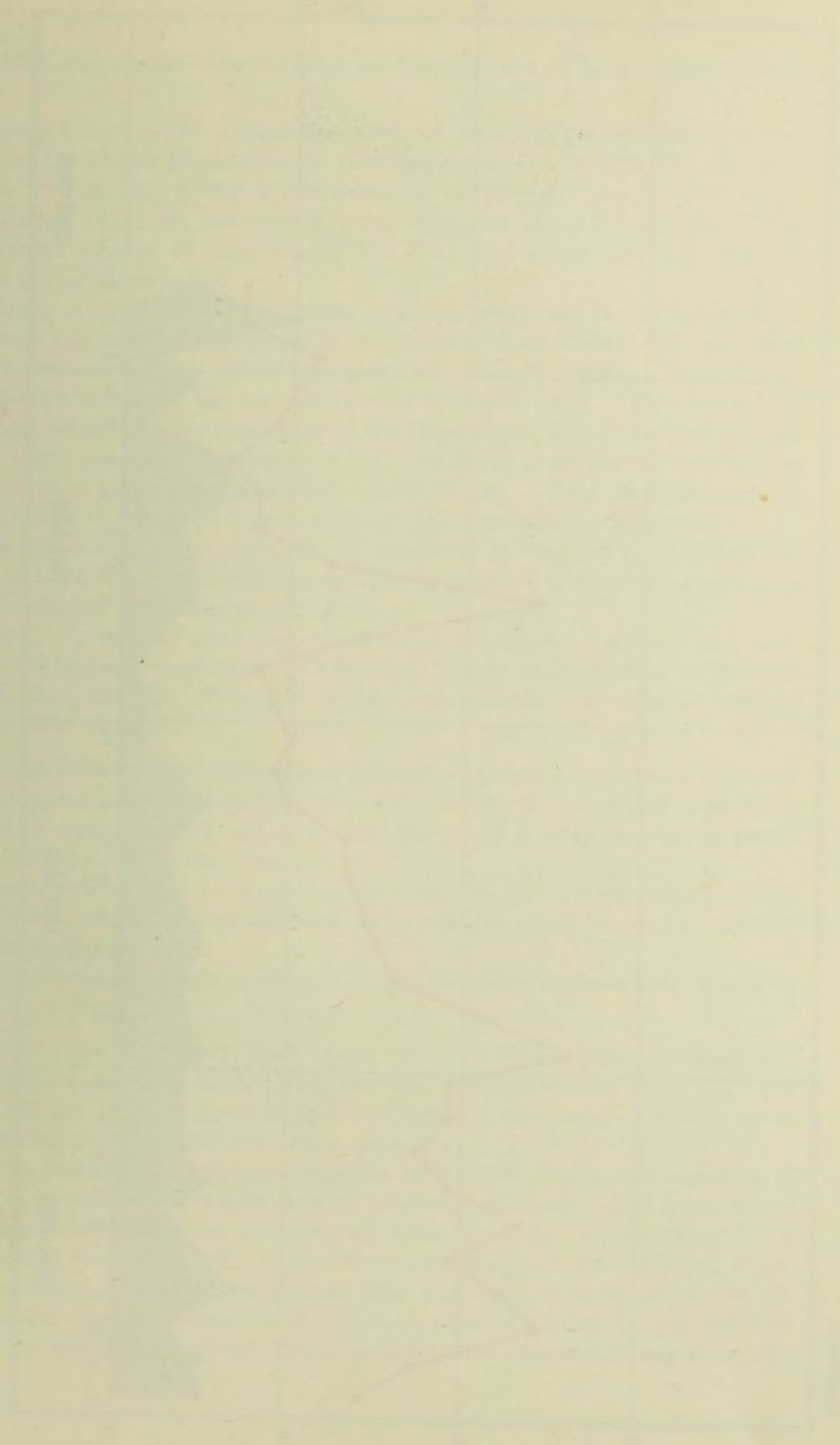
CASES	2,311	18,033	9,339	2,366	2,214	34,263
DEATHS	199	1,143	456	117	68	1,983

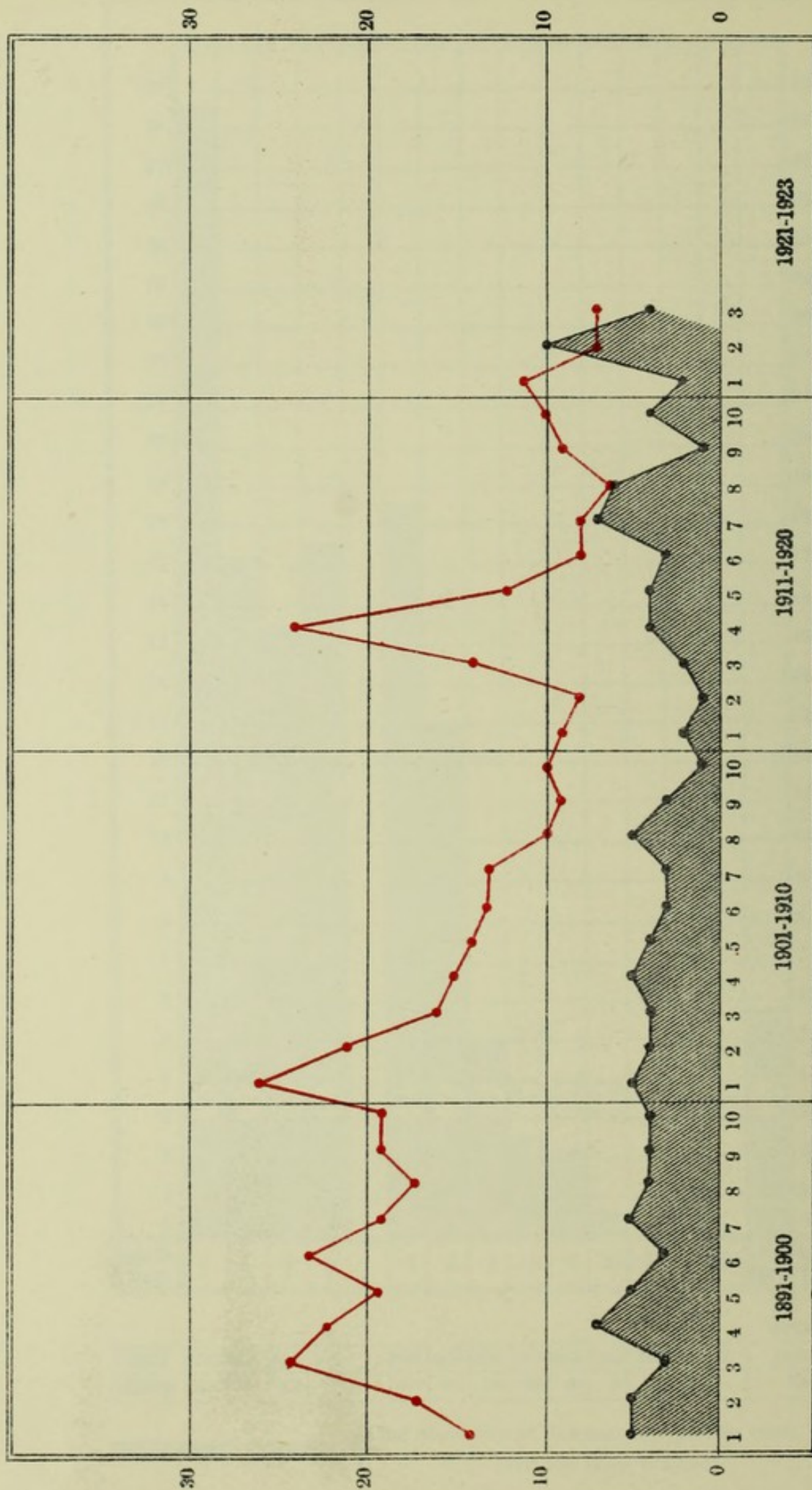
WHOOPING COUGH—{ Case Mortality in different sizes of houses (1891-1923)
(Per 100 cases notified).



														TOTAL	
CASES	748	1366	1551	1222		4987	4579	4535	4446	3809	11822	55	86	2	34,398
DEATHS	214	235	240	232		921	595	229	106	81	68	—	1	—	2001

WHOOPING COUGH — { Case Mortality at different age periods (1891-1923)
(Per 100 cases notified).





ERYSIPELAS — (Attack Incidence (per 10,000 of population)
Case Mortality (per 100 cases))

1981 to 1923; and (c) the case-mortality in different sizes of houses from 1893 to 1923.

Whooping-Cough.—The number of cases of whooping-cough coming to the knowledge of the Health Department in 1922 was 1,444, and in 1923, 87. In 1922, there were 101 deaths, giving a case-mortality of 7.0 per cent; and 5 deaths occurred during 1923, the case-mortality for that year being 5.7 per cent. The average annual number of cases during the 1913-1922 decennium was 689, the percentage of deaths being 6.3.

Whooping-cough had begun to assume epidemic prevalence in December, 1921. The epidemic attained its greatest height in February, 1922, when 427 cases were brought to the notice of the Health Department, with 32 deaths. The epidemic began to decline in March, and had disappeared by April, 1922. There was a total of 1,343 cases brought to the knowledge of the Department during this period, with 86 deaths, which gives a case mortality of 6.4; but it has to be kept in view that as whooping-cough is no longer compulsorily notifiable, the whole of the sicknesses are not known to the Health Department, although all the deaths are registered.

Whooping-cough was last epidemic in Aberdeen at the end of 1919 and the beginning of 1920, and accordingly the epidemic prevalence of this disease continues to maintain roughly a two-yearly periodicity.

Charts 8, 9, and 10 show respectively—(a) the attack incidence and case-mortality of Whooping-cough from 1882 to 1923; (b) the case-mortality at different age-periods from 1891 to 1923; and (c) the case-mortality in different sizes of houses from 1891 to 1923.

Erysipelas.—There were 110 cases of erysipelas in each of the years 1922 and 1923, as compared with an annual average of 176 during the 1913-1922 decennium. There were 11 deaths in 1922 and 4 in 1923, the yearly average number of deaths during the 1913-1922 decennium being 6.7.

The more serious cases of erysipelas, occurring in poorer households in which proper attention cannot be obtained, were, as in previous years, removed to the City Hospital for treatment.

Chart 11 shows the attack incidence and case-mortality of Erysipelas from 1891 to 1923.

Puerperal Fever.—In 1922, there were 16 cases, and in 1923, 15 cases; the average annual number of cases during the 1913-1922 decennium being 13. The deaths in 1922 and 1923 numbered 13 and 8 respectively, the average annual number of deaths during the 1913-1922 decennium being 7.4.

These 13 deaths from puerperal sepsis in 1922, indicating a case-mortality of 81 per cent., constitute the largest number of deaths from this cause occurring in the City since 1914, when there were 24 cases with 15 deaths. Of the 13 deaths, 4 occurred in the in-door practice of the Maternity Hospital, and of these 1 was admitted in labour, delivery having first been attempted without success by the private medical attendant; and 3 occurred in cases appearing in the out-door practice of the Maternity Hospital, the cases being later admitted to the Maternity

Hospital. A further case was admitted in labour to the Maternity Hospital from Oldmill Hospital. This patient developed phlegmasia and remained in the Maternity Hospital for seven weeks, when the septic condition was reported to have abated, but death took place at Oldmill Hospital three weeks later. It is found, therefore, that 7 out of the 13 deaths actually occurred within the Maternity Hospital, constituting 54 per cent. of the total deaths, and so far as could be elicited only one of the cases had been interfered with by a practitioner or midwife before admission to hospital. In the practice of private medical practitioners, 5 deaths occurred, one of these patients being removed to the City Hospital for treatment. This increase in puerperal mortality in the City in 1922 calls for the fullest investigation with a view to providing adequate prophylaxis and prevention.

In order to assist in the discovery of all possible cases of puerperal sepsis, all deaths of women occurring within four weeks after child-birth have, for many years, under arrangements with the local registrars, been immediately notified to the Health Department. In 1922, maternal deaths were 7·6 per 1,000 births, corrected for transfers, and, of these, the deaths from sepsis were 3·0 per 1,000 births. In 1923, maternal deaths were 6·4 per 1,000 births, and, of these, the deaths from sepsis were 2·1 per 1,000 births. In the 1917-1921 quinquennium, the yearly average of maternal deaths was 8·7 per 1,000 births, the deaths from sepsis averaging 1·4 per 1,000 births.

In all cases of puerperal sepsis, the usual precautions regarding the disinfection of the utensils and clothing of the attendant midwife or nurse were taken.

Chart 12 shows the attack incidence and case-mortality of Puerperal Fever from 1891 to 1923.

In 1923, a Departmental Committee was appointed by the Board of Health to inquire into the incidence of puerperal morbidity and mortality, and under the section of this report dealing with Maternity Service and Child Welfare will be found a précis of the Aberdeen evidence submitted to the Committee.

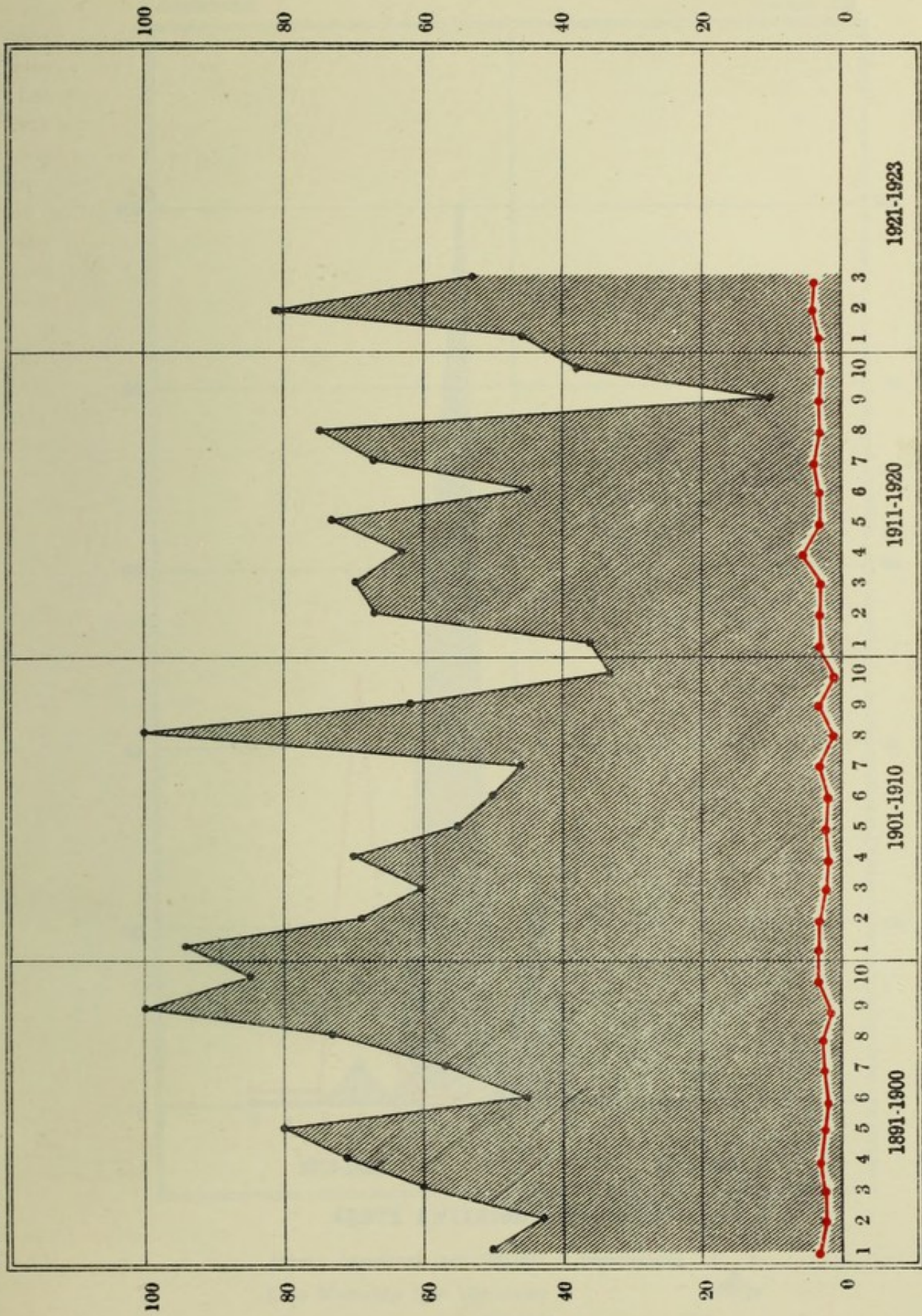
Acute Poliomyelitis.—Nine cases of this disease were notified to the Health Department during the year 1922. No cases occurred during 1923; and there were no deaths during either of the years under report.

Chart 13 shows the attack incidence and case-mortality of Acute Poliomyelitis from 1913 to 1923.

Epidemic Encephalitis.—No cases of this disease were reported during the years under review.

Epidemic Encephalitis, which, in 1921, was made compulsorily notifiable for a period of 2 years, was, in September, 1923, made permanently compulsorily notifiable within the City of Aberdeen, in view of the continued occurrence of cases in various parts of the country, and in view of its similarity to Acute Poliomyelitis and Epidemic Cerebro-Spinal Meningitis, with which disease it is apt to be confused.

During the war years, and prior to notification, several cases in Aberdeen had been brought to the knowledge of the Health Department, the majority of the cases being removed to the City Hospital for treatment.



PUERPERAL FEVER — { Attack Incidence (per 1,000 registered births)
Case Mortality (per 100 cases)





ACUTE ANTERIOR POLIOMYELITIS—

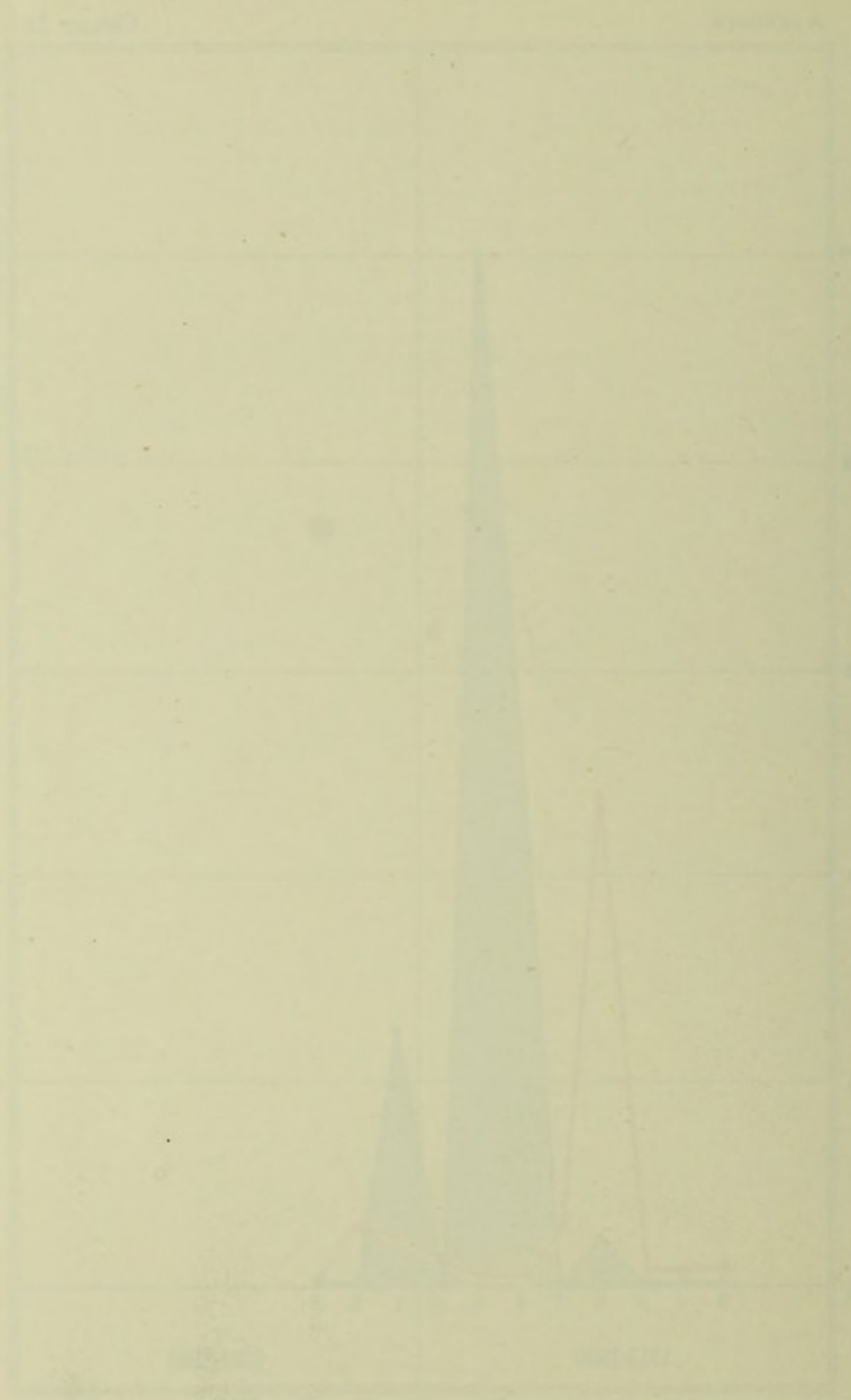
Attack Incidence (per 100,000 of population)

Case Mortality (per 100 cases)

1913-1923

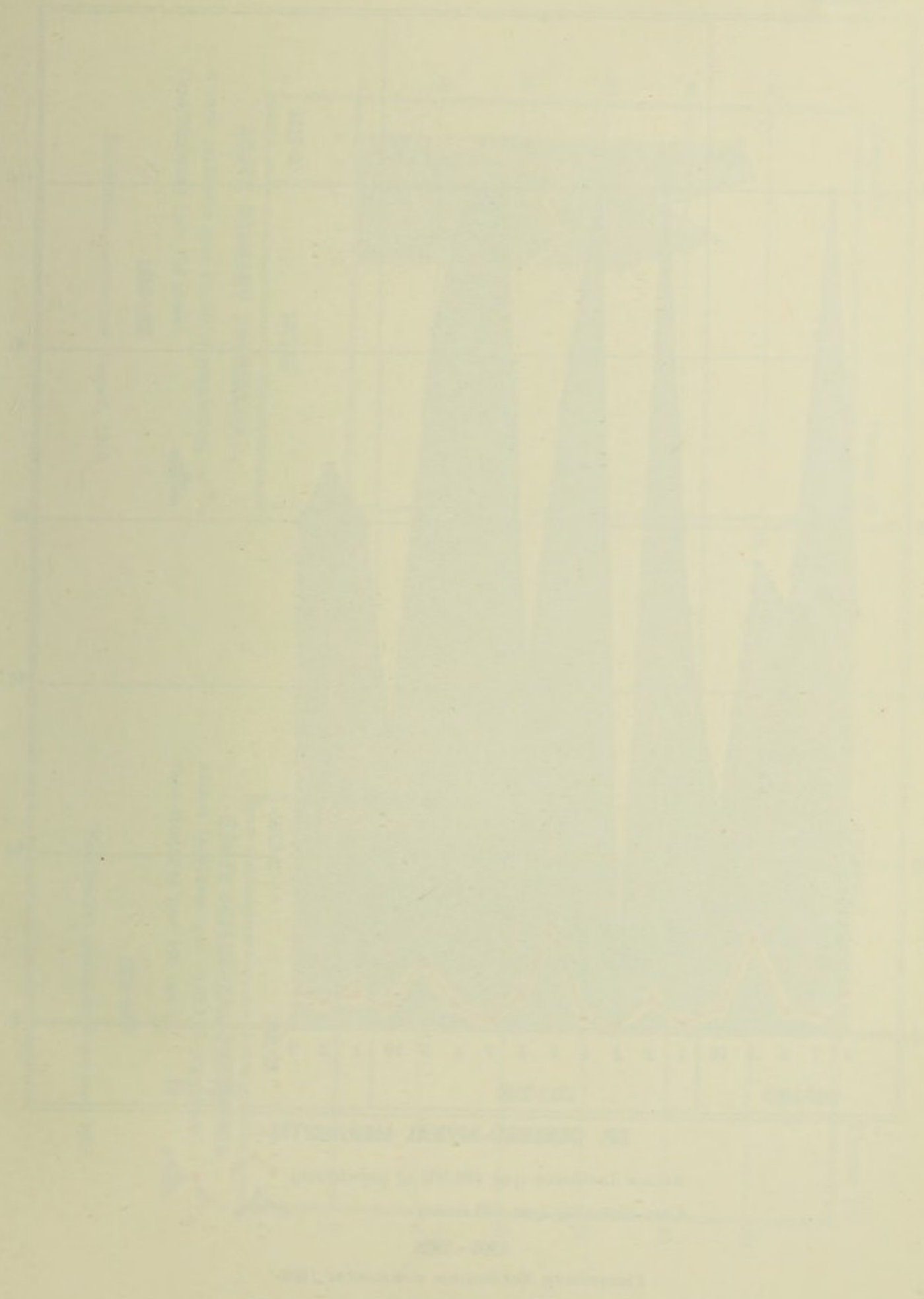
Notification commenced May, 1913.





ADULT BEHAVIOR - COLOR VISION

These figures show the response of the human eye to different wavelengths of light. The solid line represents the response of the human eye to light of different wavelengths. The shaded area represents the response of the human eye to light of different wavelengths.

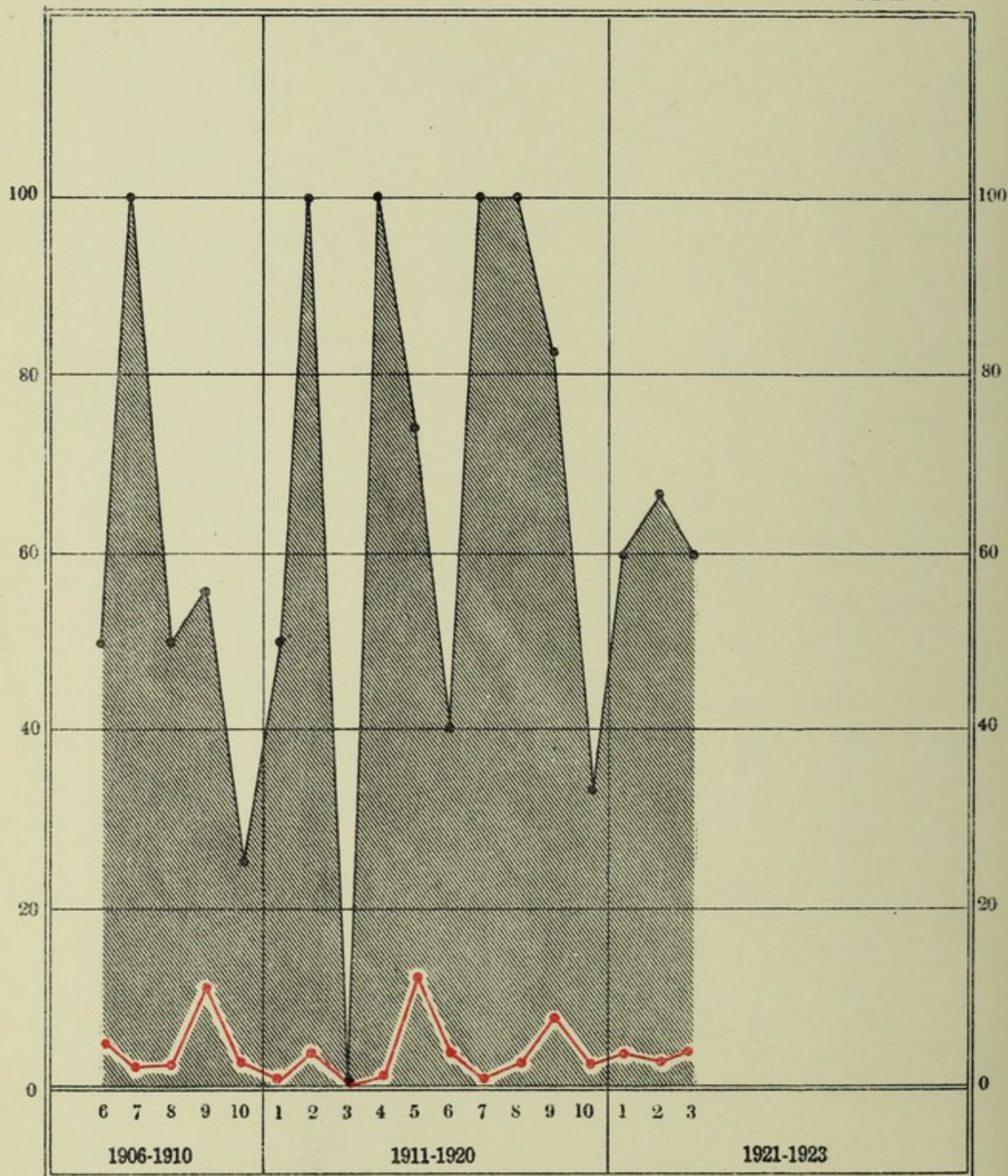


THE UNIVERSITY OF CHICAGO

LIBRARY

1900-1901

CHICAGO, ILL.



EP. CEREBRO-SPINAL MENINGITIS—

Attack Incidence (per 100,000 of population)

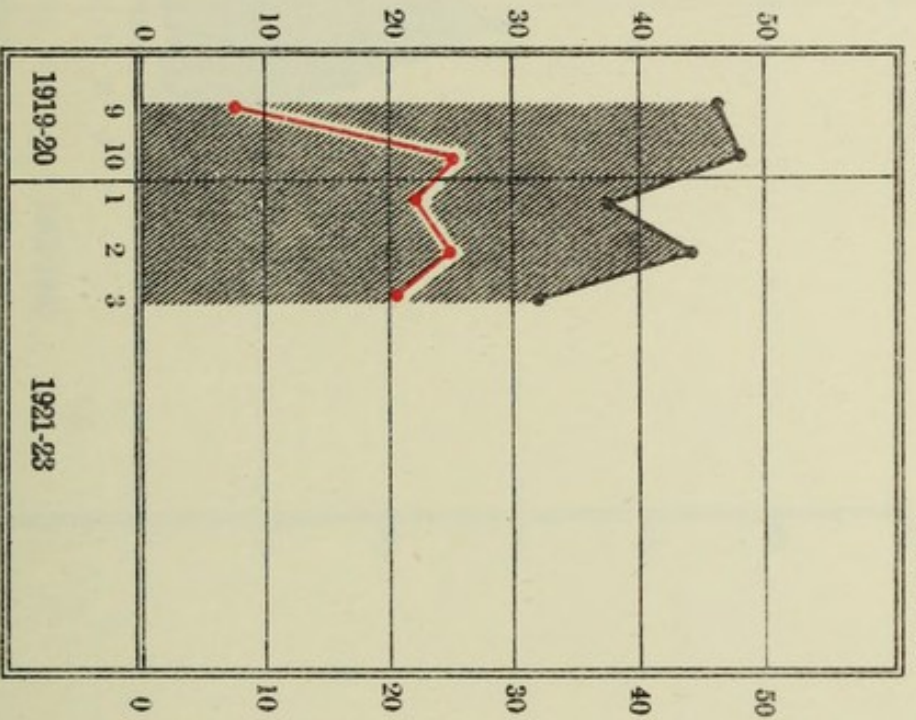
Case Mortality (per 100 cases)

1906—1923

Compulsory Notification commenced 1908.

ABERDEEN

CHART 15



ACUTE PRIMARY PNEUMONIA—

Attack Incidence (per 10,000 of population)

Case Mortality (per 100 cases)

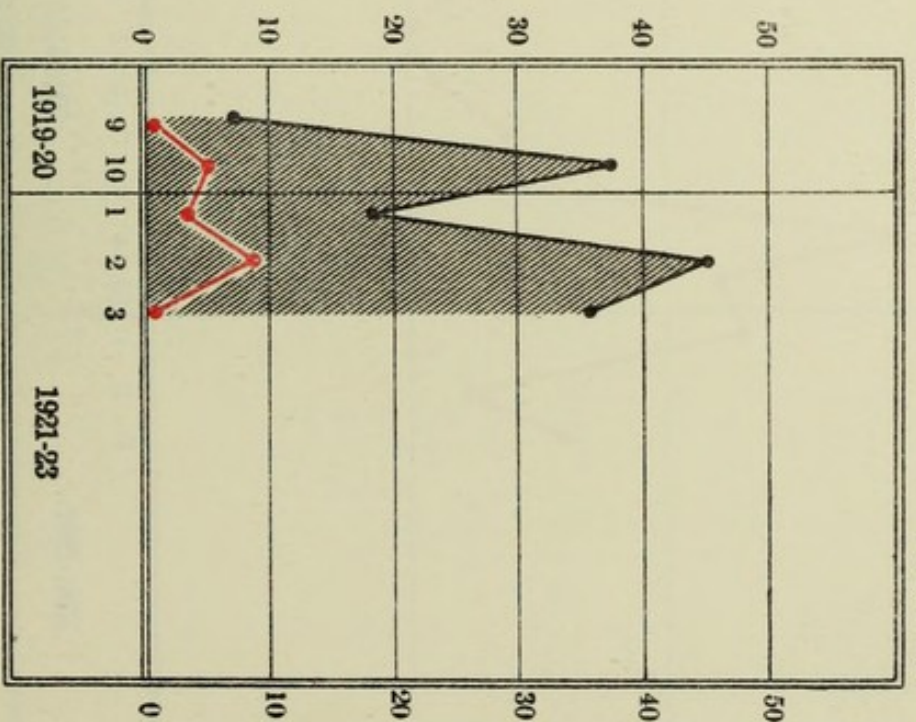


1919-1923

Notification commenced August, 1919.

ABERDEEN

CHART 16



ACUTE INFLUENZAL PNEUMONIA—

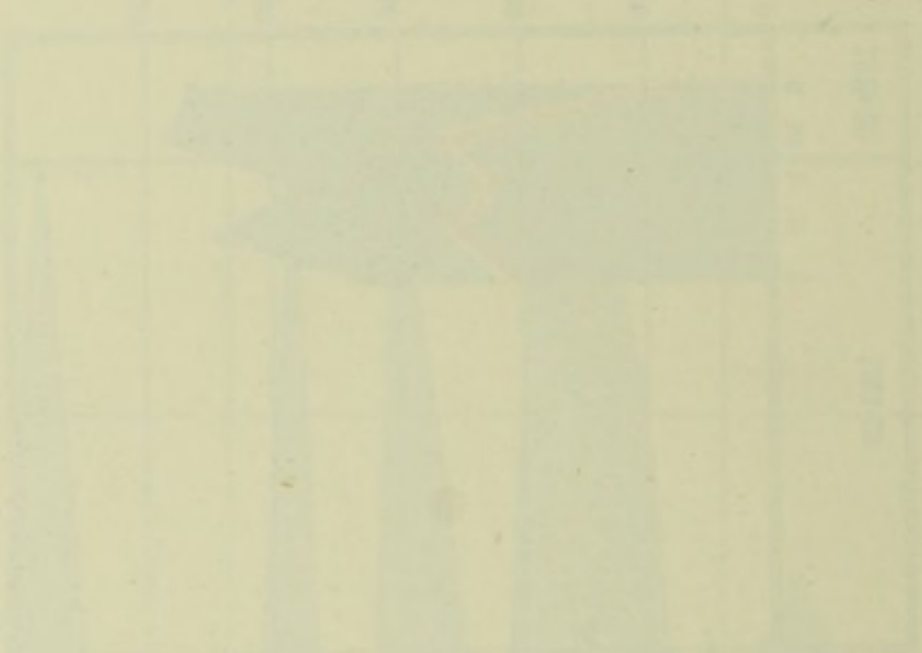
Attack Incidence (per 10,000 of population)

Case Mortality (per 100 cases)



1919-1923

Notification commenced August, 1919.

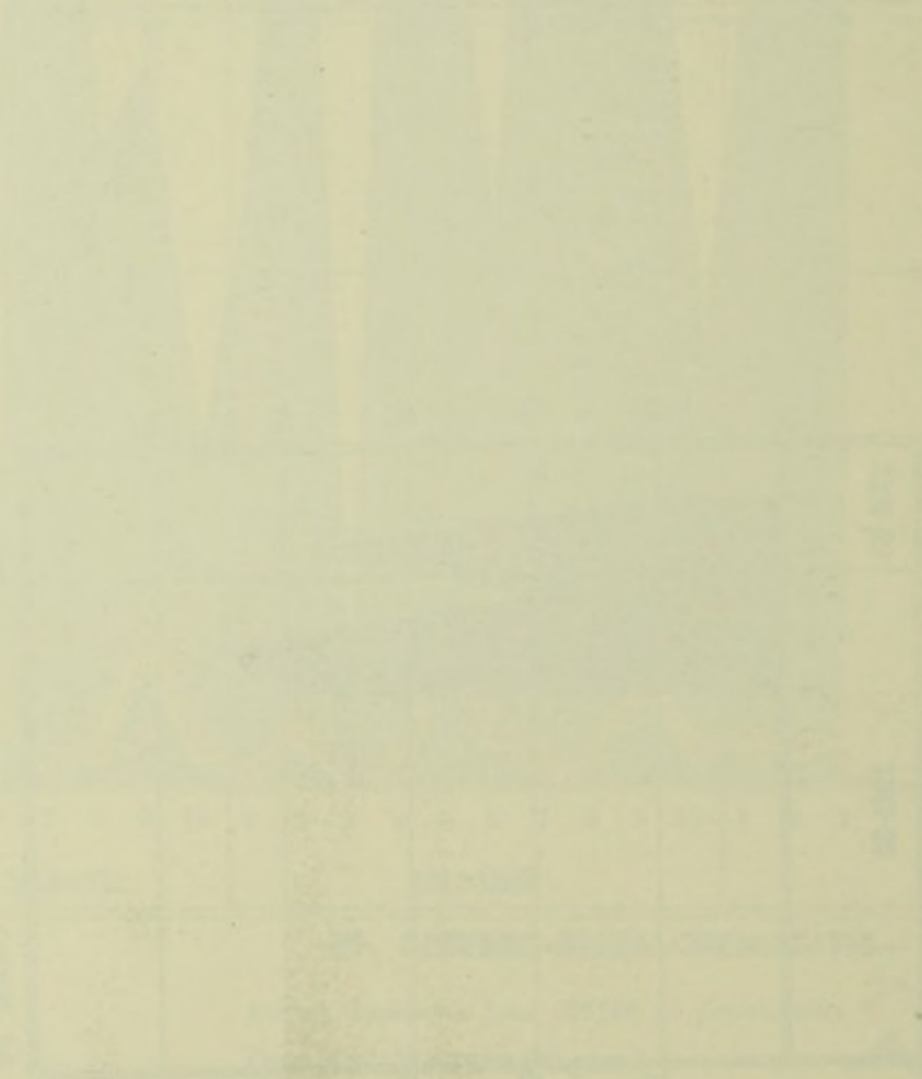


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ANALYSIS OF THE DATA

TABLE

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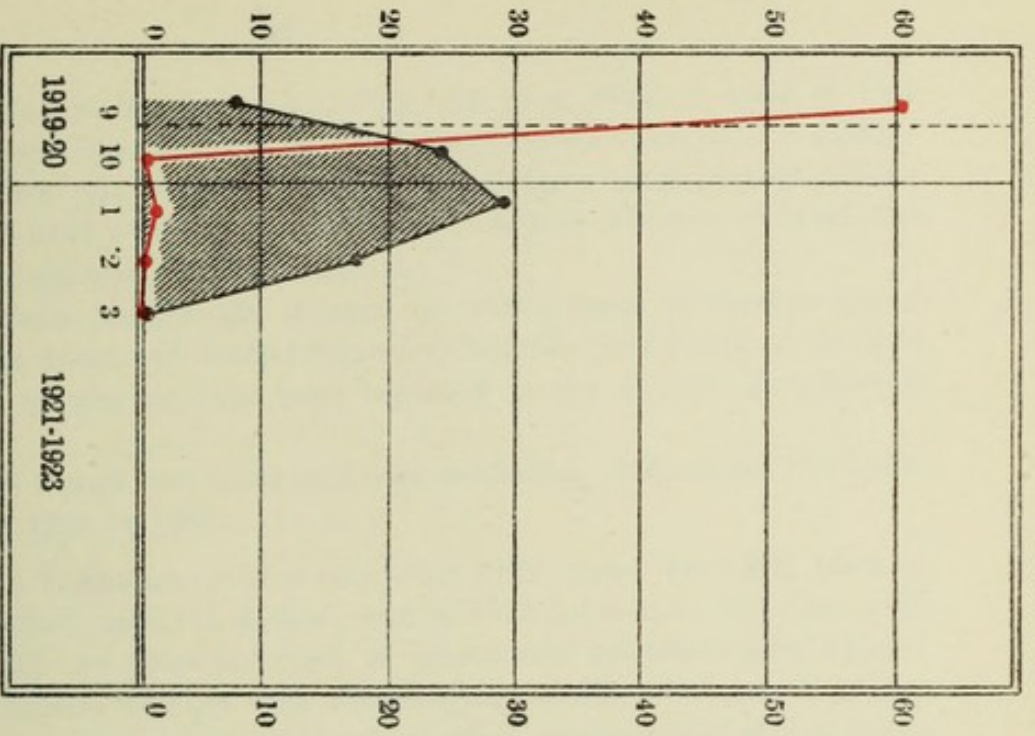
ANALYSIS OF THE DATA

TABLE

AND THE RESULTS OF THE

ABERDEEN

CHART 17



DYSENTERY—

Attack Incidence (per 10,000 of population)

Case Mortality (per 100 cases)

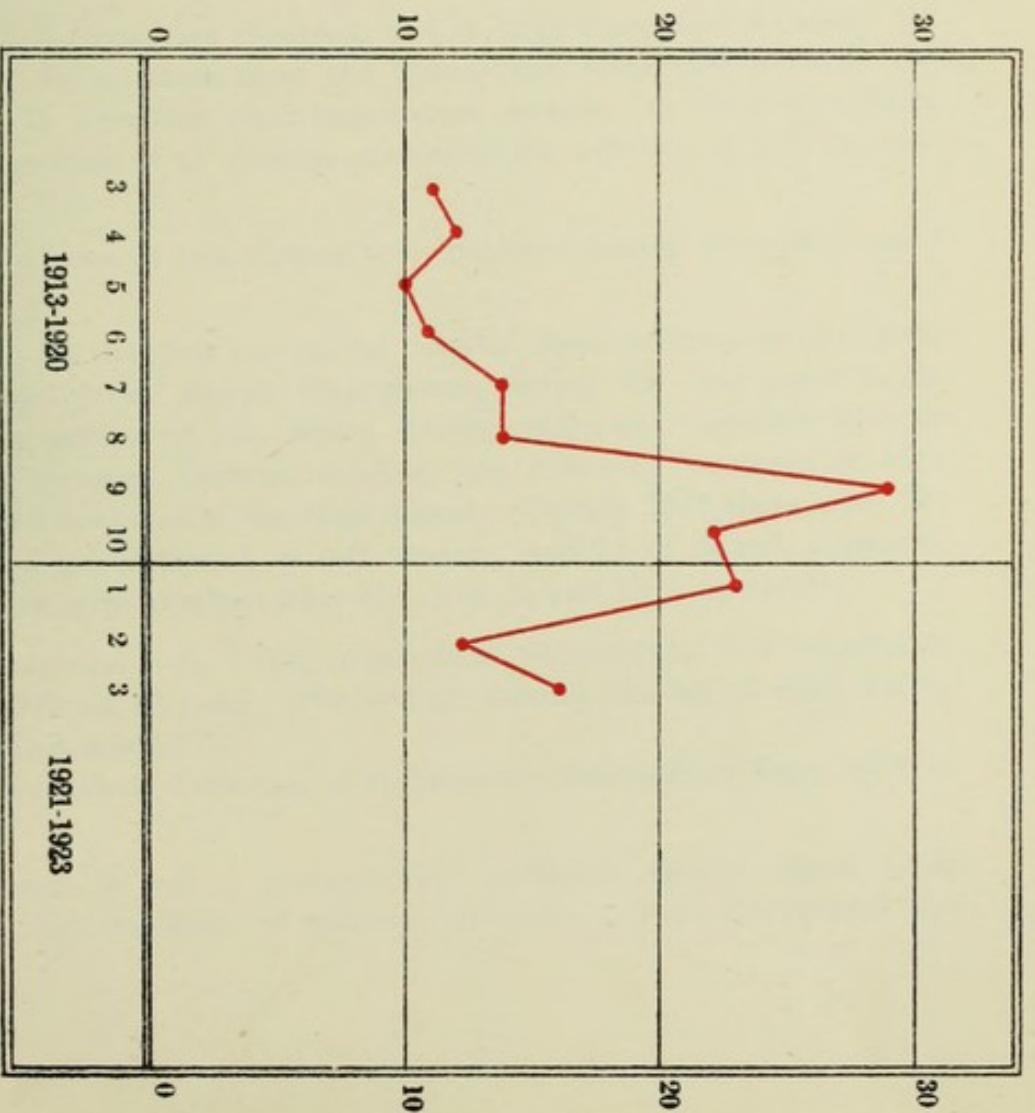


1919-1923

Compulsory Notification commenced August, 1919.

ABERDEEN

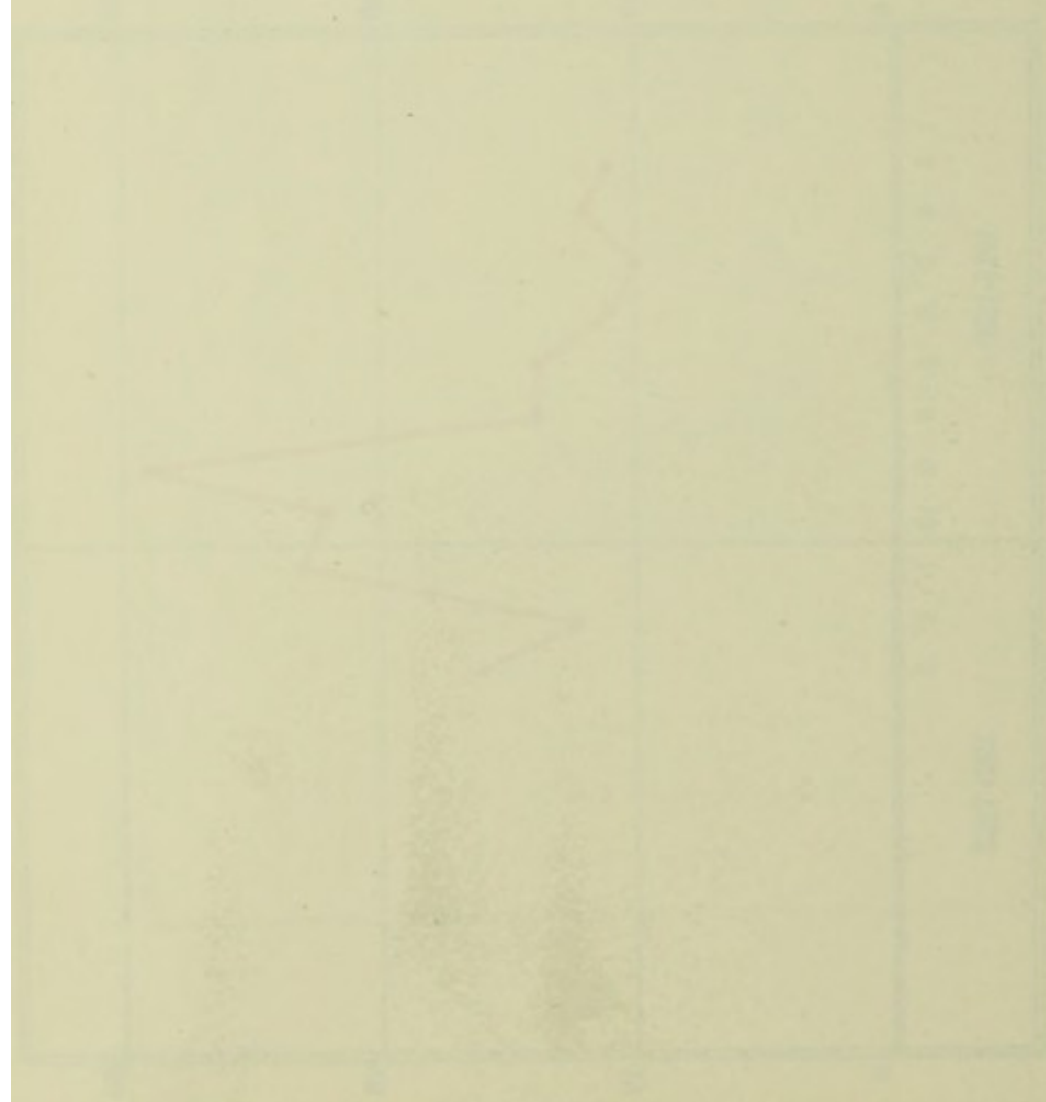
CHART 18



OPHTHALMIA NEONATORUM—Cases per 1,000 registered births.

1913-1923

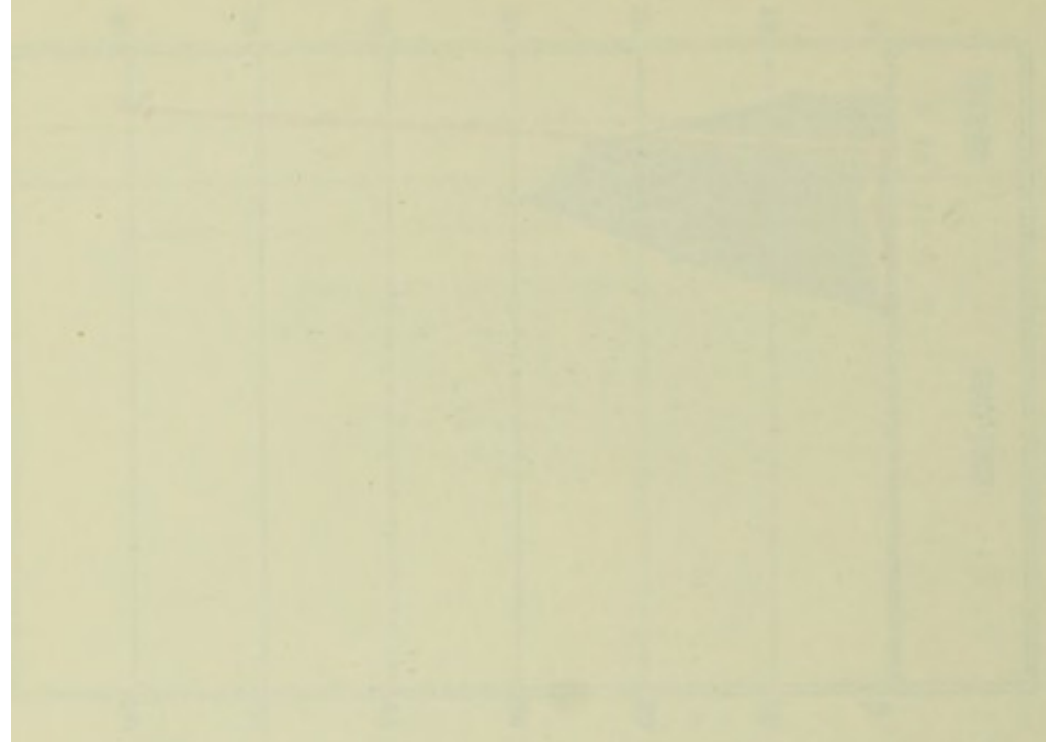
Notification commenced May, 1913.



about 10-15 degrees per hour. The temperature is about 10-15 degrees per hour.

10-15 degrees per hour.

The temperature is about 10-15 degrees per hour.



10-15 degrees per hour.

The temperature is about 10-15 degrees per hour.

10-15 degrees per hour.

10-15 degrees per hour.

The temperature is about 10-15 degrees per hour.

Epidemic Cerebro-Spinal Meningitis.—During the year 1922, 3 cases of this disease, with 2 deaths, were reported, and in 1923 there were 5 cases with 3 deaths. There was no discoverable relationship between any of these cases, except in one case. During the 1913-1922 decennium, the average annual number of cases was 5·4, and the average annual number of deaths 3·9.

As usual, all contacts within the houses in which cases of cerebro-spinal meningitis occurred were examined bacteriologically, but the percentage of positive results was very small, as was to have been expected in the absence of epidemic conditions.

Chart 14 shows the attack incidence and case-mortality of Epidemic Cerebro-Spinal Meningitis from 1906 to 1923.

Acute Primary and Influenzal Pneumonia.—In 1922, there were 404 cases of primary pneumonia notified, with 179 deaths; and in 1923 there were 335 cases with 107 deaths. During the two years six cases of pneumonic infection with Type I pneumococcus received serum therapy with encouraging results. Primary broncho-pneumonia still continues to be very incompletely notified, a regrettable circumstance in view of the hospital provision that is now being made for the graver cases of this infection. Of influenzal pneumonia, there were 141 cases with 64 deaths in 1922, and 17 cases with 6 deaths in 1923.

Charts 15 and 16 show the attack incidence and case-mortality of Acute Primary and Influenzal Pneumonia from 1919 to 1923.

Malaria.—In 1922, 5 cases were reported, and in 1923 there were 3 cases. No deaths were reported. In all these cases the disease was contracted abroad, and the cases were notified in Aberdeen when recurrences, relapses, or other manifestations of this the most protean of all diseases compelled the sufferers to seek medical advice.

Trench Fever.—No cases of this disease were reported during the years under review.

Venereal Diseases.—A detailed analysis of cases of venereal diseases that have come to the knowledge of the Health Department during the two years under review is given in the section of this report dealing with the Venereal Diseases Services. Under the Venereal Diseases Scheme, the following numbers of City cases have come to the knowledge of the Department. During 1922 there were 174 cases of syphilis, 206 of gonorrhœa, 1 of soft chancre, and 21 of mixed infections. For the year 1923 the relative numbers were 154, 213, 2, and 18 respectively.

Ophthalmia Neonatorum.—In 1922, ophthalmia neonatorum was responsible for 47 cases, and in 1923 for 63 cases. The average annual number of cases during the 1913-1922 decennium was 60·7.

Chart 18 shows the attack incidence of Ophthalmia Neonatorum from 1913 to 1923.

Influenza.—Influenza is not a compulsorily notifiable disease, apart from influenzal pneumonia, but the effects of epidemic influenza in 1922 are noteworthy.

Influenza rapidly rose to epidemic intensity in the second half of the month of January, 1922, having been preceded by a similar rise about a fortnight earlier in Glasgow and Dundee. The epidemic reached its highest point in the first week of February, after which it steadily declined, and would appear to have ceased by the second week in March. During the epidemic period, 26 deaths were certified as due to influenza, 63 as due to influenza with pneumonia, and 10 as due to influenza with bronchitis—a total of 99 deaths.

In respect of age, the 99 deaths were distributed as follows:—Under 5 years, 14; 5-15 years, 1; 15-25 years, 2; 25-45 years, 15; 45-65 years, 28; and above 65 years, 39. As to sex, at ages under 25, there were 6 males and 11 females; above 25 years, 44 males and 38 females. Facilities were given early in the epidemic for the reception at the City Hospital of the more severe cases of influenza and pneumonia, and 50 such cases were admitted.

In addition to the 99 deaths occurring during the epidemic period in 1922, an additional 5 deaths occurred in the later months of the year, giving a total of 104 deaths for 1922. In 1923, there were 11 deaths ascribed to influenza and its complications. Of influenzal pneumonia, there was a total of 141 cases in 1922 and 17 cases in 1923, with 64 deaths and 6 deaths respectively.

Tuberculosis.—A detailed analysis of the cases and deaths from tuberculosis in Aberdeen is given in the section of this report relating to the Tuberculosis Department.

The notifications and deaths of all forms of tuberculosis during the years under review are shown in Tables XVI. and XVII. In 1922, 458 cases were notified, and in 1923 there were 398 cases.

After correction for transfers, there were 184 deaths from all forms of tuberculosis in 1922, equivalent to a death-rate of 115 per 100,000 of the population; and in 1923 there were 196 deaths, equivalent to a death-rate of 122. In 1922, the death-rate among males was 135, and among females, 98; and in 1923, these rates were 159 and 90 respectively.

The proportion of notified cases of all forms of tuberculosis to deaths, after correction for transfers, was, in 1922, 2·49:1; and in 1923, 2·03:1.

Infectious Jaundice (Spirochaetosis Ictero-hæmorrhagica).—A report of great interest, on the outbreak of infectious jaundice among miners in East Lothian in 1923, prepared by Dr. Dittmar, one of the Scottish Board of Health's Medical Officers, and circulated to Local Authorities, refers to the association of the disease in man with an epizootic among rats which is due to the same organism, the leptospira ictero-hæmorrhagica. Among many recommendations made by Dr. Dittmar, it was suggested that investigation should be made as to the prevalence of leptospira infection in rats throughout the United Kingdom. The literature in connection with this infection in rats and man is reviewed by Dr. Dittmar, who makes reference, among other work, to the paper by A. C. Stevenson in the *American Journal of Tropical Medicine*, Vol. 2, No. 1, January, 1922, on the incidence of

leptospirosis in the kidneys and of parasites in the intestines of 100 wild rats examined in England.

In accordance with Dr. Dittmar's recommendation, therefore, it seemed important that inquiry should be made into the incidence of leptospirosis ictero-hæmorrhagica in rats caught in the City of Aberdeen, and the following is a note of the work done in this connection by Dr. John Smith, City Bacteriologist, during the current year:—

The investigation was commenced at the beginning of February, 1924, and terminated at the end of September, 1924. During that period 100 rats all belonging to the species *Rattus norvegicus* were examined.

The rats were caught in traps in various parts of the City, brought to the laboratory alive, and killed just prior to examination. Preparations were then made from the kidneys, liver, and urine (if present), and examined by dark-ground illumination methods. In order to check the results, guinea-pigs were inoculated with the kidney extracts in each case.

In all 24 rats out of the 100 examined showed the presence of typical leptospirosis either by direct examination of the tissues or as a result of animal inoculation. By direct examination of the rat tissues, 20 rats showed leptospirosis and 18 of these strains were sufficiently virulent to kill the guinea-pigs in seven to twelve days. In two instances the guinea-pigs survived and were killed on the eighteenth day after inoculation. Typical leptospirosis were found in the kidney tissues of one animal which when re-inoculated into three other guinea-pigs caused death in two at the end of a week. In four instances spirochaetes were only demonstrated by means of animal inoculation. The following table shows the relation of infection to sex and to concurrent trypanosome infection:—

Males—Number examined,	73
Number showing leptospirosis,	18
Number showing Trypanosome lewisi,	11
Number showing both infections,	6
Females—Number examined,	27
Number showing leptospirosis,	6
Number showing Trypanosome lewisi,	4
Number showing both infections,	2

CHAPTER III.

COMPARISON BETWEEN ABERDEEN AND OTHER TOWNS.

Tables XII. (A) and (B) are submitted, in which comparison for the years 1922 and 1923 is made between Aberdeen and other large towns in Scotland in regard to some of the more important features of their vital statistics.

The rates for births and deaths are corrected for transfers, that is for births or deaths transferred from the records in the place of their occurrence to the records of the place of home residence.

A further correction is applied to the death-rate from all causes. This correction is necessary to a strict comparison between the towns, owing to the differences in sex and age distribution.

Marriages.—Table XII. shows that, among the principal towns, Aberdeen in 1922 occupied the highest place, with a marriage-rate of 101 per 10,000 of population. Edinburgh came second, with a marriage-rate of 96, and Glasgow third, with a marriage-rate of 91. Dundee, Paisley, and Greenock had marriage-rates of 88, 68, and 63 respectively. In 1923, Aberdeen occupied with Edinburgh the highest place, with a rate of 98 per 10,000 of population; Glasgow came third with a marriage-rate of 96; and Dundee, Paisley, and Greenock had marriage-rates of 83, 75, and 66 respectively.

As has been pointed out in previous reports, the marriage-rate for the larger towns is inflated beyond its proper dimensions by the inclusion of a considerable number of marriages of people whose residence is beyond the City.

Births.—In respect of births, Aberdeen came third in the list in 1922, and fourth in 1923, with a birth-rate of 249 and 236 respectively per 10,000 of population. Greenock was easily first in both years, with a birth-rate of 277 and 270 respectively; and Glasgow came second, with a birth-rate of 273 and 256 respectively. Edinburgh, as usual, was lowest, in both years, with a birth-rate of 207 and 204 in the two years under review.

Illegitimate Births.—In 1922, the percentage of illegitimate births in the total births was distinctly higher in Aberdeen than in any of the other principal towns, being 9·7 per cent. of the total births, as against 7·0 per cent. in Dundee, which was the next highest, 6·9 in Edinburgh, 6·1 in Glasgow, 5·7 in Paisley, and 4·5 in Greenock. In 1923, Aberdeen was second, with 7·7 per cent., Dundee being first, with 7·9, as against 6·9 in Edinburgh, 5·6 in Glasgow, 4·9 in Greenock, and 4·2 in Paisley. Stated as births per 1,000 unmarried and widowed women of child-bearing ages (15 to 45 years), Aberdeen was, with 15·9, emphatically the highest

of the four principal towns, Glasgow coming next with 11·9, Greenock with 11·0, Dundee with 10·7, and Edinburgh with 8·7. In 1923, the rate for Aberdeen and Dundee was the same, being 12·0, Greenock coming next with 11·7, Glasgow with 10·2, and Edinburgh with 8·5.

The large excess of females over males in the populations of Aberdeen and Dundee may have some relation to these figures.

It is now generally admitted that, other things being equal, an excess of illegitimate births in a community is an index of unsophistication rather than of depravity.

Deaths.—As regards the crude death-rate from all causes and at all ages in 1922, Aberdeen and Dundee were third, with a death-rate of 162 per 10,000 of the population; Greenock being first in the list, with a death-rate of 192, and Glasgow second, with a death-rate of 172. In 1923, Aberdeen was fourth, with a death-rate of 135; Dundee being first, with a death-rate of 147; Glasgow second, with 142; and Edinburgh third, with 138. When, however, this crude death-rate is corrected for age and sex distribution, Aberdeen is fourth in 1922, with a death-rate of 164; Greenock remaining first, with a death-rate of 210; Glasgow remaining second, with 194; and Paisley is third, with 176. With this correction, in 1923, Aberdeen is fifth, with a death-rate of 135; Glasgow is first, with 160; Dundee second, with 147; Greenock third, with 141; and Edinburgh fourth, with 140.

In regard to *Infantile Mortality* (deaths of infants under one year per 1,000 births), in 1922, Aberdeen was second highest with 133, Greenock being first in the list with 149, and Edinburgh having the lowest rate, 91. In 1923, Aberdeen had the highest rate, 104, Dundee being second with 98, and Paisley having the lowest rate, 66.

In respect of the death-rate for the *Principal Epidemic Diseases*, in 1922, Aberdeen had the third highest rate, 18·5 per 10,000 of population, Greenock being first in the list with 34·7, and Dundee having the lowest rate, 8·0. In 1923, Aberdeen was fifth in the list, with 5·1, Glasgow being first with 13·7, and Greenock having the lowest rate, 4·8.

As regards the death-rate from *Tuberculosis of the Respiratory System*, Aberdeen was fifth in the list in 1922, and sixth in 1923. From *All Forms of Tuberculosis*, Aberdeen had the lowest rate for 1922, 11·5 per 10,000 of population, and the second lowest for 1923, 12·4, Paisley being first with a rate of 12·3.

As to the death-rate from *Bronchitis*, in 1922, Aberdeen had distinctly the lowest rate, and in 1923 Aberdeen was above Paisley but lower than the other four towns.

As regards *Pneumonia*, in 1922, Aberdeen was above Edinburgh, but lower than the other four towns, and in 1923 it was above Paisley but lower than the other towns.

In respect of *Malignant Diseases*, in 1922, Aberdeen, along with Edinburgh, had the second highest rate, 15·5, Dundee being first with 15·8. In 1923, Dundee was first in the list, with 15·3, Edinburgh second with 15·1, and Aberdeen third with 13·6. As has been pointed out in preceding annual reports, the death-rate

TABLE XII (A).—BIRTH, DEATH, AND MARRIAGE RATES DURING THE YEAR 1922.

Six Principal Towns in Scotland.

(Corrected for transfers of births and deaths.)

	Glasgow.	Edinburgh.	Dundee.	Aberdeen.	Paisley.	Greenock.
ESTIMATED POPULATION, (in thousands).	1038	423	172	160	85	81
MARRIAGE-RATE, (per 10,000 of population).	91	96	88	101	68	63
BIRTH-RATE—						
A—Total Births, (per 10,000 of population).	273	207	246	249	248	277
B—Legitimate Births, (per 1,000 Married Women aged 15-45 years).	227	187	218	206	217	236
C—Illegitimate Births—						
(a) Per 100 total Births,	6.1	6.9	7.0	9.7	5.7	4.5
(b) Per 1,000 Unmarried Women and Widows aged 15-45 years,	11.9	8.7	10.7	15.9	9.0	11.0
DEATH-RATE—						
A—All Ages (per 10,000 of population).						
(a) All Causes,	172	152	162	162	161	192
Corrected for Age and Sex Distribution,	194	155	162	164	176	210
(b) Principal Epidemic Diseases,	19.3	8.8	8.0	18.5	17.0	34.7
(c) Tuberculosis—						
(1) Respiratory,	11.1	8.7	9.8	8.8	9.1	10.3
(2) Other,	3.9	3.9	3.9	2.7	4.0	6.8
(d) Bronchitis,	14.5	10.1	14.5	9.7	11.8	13.6
(e) Pneumonia,	23.8	12.4	15.2	13.2	17.6	22.1
(f) Malignant Diseases,	12.9	15.5	15.8	15.5	13.4	11.4
(g) Diseases of Circulatory System,	13.1	20.8	19.2	18.9	15.6	14.7
(h) Nephritis and Bright's Disease,	4.5	4.6	4.3	4.8	4.1	3.6
(i) Diarrhoea and Enteritis (under 2 years),	2.8	1.3	2.6	1.9	2.3	1.5
(j) Violence (excl. Suicide),	4.7	4.2	5.7	4.4	2.9	3.7
B—Infants under One Year, (per 1,000 births).	120	91	109	133	117	149
EXCESS of BIRTH-RATE over DEATH-RATE,	101	55	84	87	87	85

TABLE XII (B).—BIRTH, DEATH, AND MARRIAGE RATES DURING THE YEAR 1923.

Six Principal Towns in Scotland.

(Corrected for transfers of births and deaths.)

	Glas- gow.	Edin- burgh.	Dundee.	Aber- deen.	Paisley.	Green- ock.
ESTIMATED POPULATION, (in thousands).	1044	425	171	160	86	81
MARRIAGE-RATE, (per 10,000 of population).	96	98	83	98	75	66
BIRTH-RATE—						
A—Total Births, (per 10,000 of population).	256	204	246	236	235	270
B—Legitimate Births, (per 1,000 Married Women aged 15-45 years).	214	184	216	200	209	229
C—Illegitimate Births—						
(a) Per 100 total Births,	5.6	6.9	7.9	7.7	4.2	4.9
(b) Per 1,000 Unmarried Women and Widows aged 15-45 years,	10.2	8.5	12.0	12.0	6.2	11.7
DEATH-RATE—						
A—All Ages (per 10,000 of population).						
(a) All Causes,	142	138	147	135	115	129
Corrected for Age and Sex Distri- bution,	160	140	147	135	126	141
(b) Principal Epidemic Diseases,	13.7	9.3	11.7	5.1	5.8	4.8
(c) Tuberculosis—						
(1) Respiratory,	10.5	9.3	9.8	8.1	8.3	9.9
(2) Other,	4.5	3.3	4.6	4.3	4.0	5.4
(d) Bronchitis,	9.8	8.1	7.9	6.6	4.8	9.2
(e) Pneumonia,	14.8	10.9	13.5	8.0	7.2	11.2
(f) Malignant Diseases,	11.0	15.1	15.3	13.6	12.8	10.9
(g) Diseases of Circulatory System,	13.8	19.4	18.1	19.8	17.4	12.3
(h) Nephritis and Bright's Disease,	4.1	3.8	3.4	4.5	3.0	3.2
(i) Diarrhoea and Enteritis (under 2 years),	2.5	1.5	0.9	1.4	1.9	1.6
(j) Violence (excl. Suicide),	4.2	4.7	5.3	6.0	3.6	3.4
B—Infants under One Year, (per 1,000 births).	90	82	98	104	66	77
EXCESS of BIRTH-RATE over DEATH-RATE,	114	66	99	101	120	141

from malignant diseases continues to be distinctly lower in the west coast towns than in the east coast towns, the average in 1922 for the former towns being 12·6 and for the latter 15·6; and the average in 1923 for the former towns being 11·6 and for the latter 14·7. Before accepting these figures as being truly indicative of an increased cancer mortality in the east coast towns, it is necessary to make corrections for the age and sex distribution of the population, and to standardise the figures for comparison. It is hoped to submit an analysis of the figures thus standardised at an early date. Both sets of towns show a continuous and considerable increase, the difference between the west and the east continuing to be maintained. The seeming difference in the mortality from malignant diseases between the two sets of towns is distinctly interesting, and is not to be explained by difference in diagnosis by the medical practitioners of the different towns.

As to the death-rate from *Diseases of the Circulatory System*, in 1922, Aberdeen stood third in the list, with 18·9, Edinburgh being first with 20·8, and Dundee second with 19·2. In Glasgow the rate was only 13·1. In 1923, Aberdeen, with 19·8, stood above all the other towns.

As to *Nephritis and Bright's Disease of the Kidney*, Aberdeen was highest in both years under review, with a rate of 4·8 in 1922 and 4·5 in 1923. In 1922, the rate was lowest in Greenock, being 3·6; and in 1923 it was lowest in Paisley, being 3·0.

As regards the death-rate from *Diarrhœa and Enteritis*, in 1922, Aberdeen, with a rate of 1·9, was lower than Glasgow, Dundee, and Paisley, but higher than Edinburgh and Greenock. In 1923, the Aberdeen rate, 1·4, was lower than the rate for Glasgow, Edinburgh, Paisley, and Greenock, but higher than the Dundee rate.

In respect of deaths from *Violence (excluding Suicide)*, in 1922, the Aberdeen rate (4·4) was third in the list, Dundee being first, and Glasgow second. In 1923, Aberdeen had the highest rate, 6·0.

Excess of Birth-rate over Death-rate.—The excess of births over deaths, in 1922, was highest in Glasgow, with 101 per 10,000 of the population, and lowest in Edinburgh, with 55. In Aberdeen it was 87. In 1923, the excess was highest in Greenock, with 141, and lowest in Edinburgh, with 66; while in Aberdeen it was 101.

It is interesting to note that, in 1922, Glasgow, which had the second highest death-rate, nevertheless took the best place in respect of natural increment of population, while Edinburgh, with the lowest death-rate, took the lowest place.

It is a fair subject for debate whether the excess of the birth-rate over the death-rate is not a better measure of the natural and serviceable health of a community than the death-rate alone.

Zymotic Prevalence.—In Table XIII. a comparison is made between the four chief towns in respect of (a) the number of notified cases of the three principal zymotic diseases, namely, diphtheria, scarlet fever, and typhoid and para-typhoid fever; (b) the percentage of deaths among such cases; (c) the percentage of cases removed to hospital for treatment; and (d) the number of deaths from these diseases per 10,000 of population.

TABLE XIII.—DIPHTHERIA, SCARLET FEVER, AND TYPHOID FEVER IN 1922 AND 1923, AND PRECEDING FIVE YEARS.
FOUR PRINCIPAL TOWNS IN SCOTLAND.

CITY.	Estimated Population in Thousands	TOTAL NUMBER OF NOTIFIED CASES.			NUMBER OF NOTIFIED CASES PER 10,000 OF POPULATION.			NUMBER OF DEATHS PER 100 NOTIFIED CASES.			PERCENTAGE OF CASES TREATED IN HOSPITAL.			NUMBER OF DEATHS PER 10,000 OF POPULATION.		
		Diphtheria.	Scarlet Fever.	Typhoid and Paratyphoid Fever.	Diphtheria.	Scarlet Fever.	Typhoid and Paratyphoid Fever.	Diphtheria.	Scarlet Fever.	Typhoid and Paratyphoid Fever.	Diphtheria.	Scarlet Fever.	Typhoid and Paratyphoid Fever.	Diphtheria.	Scarlet Fever.	Typhoid and Paratyphoid Fever.
Aberdeen	1923	189	271	21	12	17	1.3	4.2	1.5	14.3	97	88	95	0.5	0.3	1.3
	1922	292	310	8	18	19	0.5	4.8	2.9	0.0	98	88	100	0.8	0.5	...
	Average 1917-21	510	392	28	32	25	1.8	5.3	1.5	15.6	95	81	99	1.7	0.4	0.3
Glasgow,	1923	1,767	3,568	126	17	34	1.2	8.2	2.0	11.1	96	94	90	1.4	0.7	0.1
	1922	1,689	3,475	85	16	34	0.8	8.2	2.1	14.1	96	96	93	1.0	0.7	0.1
	Average 1917-21	1,697	2,628	137	16	20	1.3	9.3	1.7	15.4	95	95	93	1.5	0.4	0.2
*Edinburgh,	1923	770	1,897	29	18	45	0.7	8.9	4.9	6.9	96	94	93	1.6	2.2	0.05
	1922	800	1,702	16	19	40	0.4	7.1	1.8	25.0	96	95	94	1.3	0.8	0.1
	1921	991	2,163	9	24	51	0.2	7.6	1.9	...	96	97	67	1.8	1.0	...
Dundee,	1923	256	813	24	15	48	1.4	13.3	1.7	8.3	89	66	88	2.0	0.8	0.1
	1922	267	429	14	16	25	0.8	8.6	1.6	...	93	78	43	1.3	0.4	...
	Average 1917-21	311	499	38	18	17	2.2	9.7	1.7	9.4	83	67	91	1.7	0.3	0.2

* Leith added from 1921 onwards.

As regards Diphtheria, it will be observed that Aberdeen, in 1923, had the lowest prevalence, the rate being 12 per 10,000 of population, as compared with the Glasgow, Edinburgh, and Dundee figures of 17, 18, and 15 respectively. The percentage of deaths was also by far the lowest in Aberdeen.

Scarlet Fever during both 1922 and 1923 was much less prevalent in Aberdeen than in any of the other towns. Aberdeen had the lowest percentage of deaths in 1923, but the highest percentage in 1922. In Glasgow and Edinburgh, a larger percentage of cases were removed to hospital than in Aberdeen.

As regards the prevalence of Typhoid Fever, in 1922, Aberdeen had 0·5 cases per 10,000 of population, as against 0·8 in Glasgow and Dundee, and 0·4 in Edinburgh; and in 1923 the rate for Aberdeen was 1·3, as against 1·2 in Glasgow, 0·7 in Edinburgh, and 1·4 in Dundee. No deaths occurred in Aberdeen in 1922, but in 1923 Aberdeen had the highest percentage of deaths—14·3 per 100 notified cases.

CHAPTER IV.

SPECIAL HEALTH SERVICES.

Prior to 1912, the health services of the Town Council were confined to matters concerning general conditions of health and to dealing with fevers, and it is only during the past twelve years that additional statutory enactments and regulations have made the Council responsible for comprehensive health services in relation to Tuberculosis, Venereal Diseases, Maternity and Child Welfare, and Welfare of Blind Persons. During the war and post-war years, however, difficulties in connection with building construction and finance have made it impossible to provide additional permanent institutional accommodation, with the result that the institutional accommodation for the additional health services has been found mainly within the buildings originally provided for the isolation and treatment of fever cases. Thus, the 125 beds at present devoted to tuberculous cases were made available by taking over and extending two wards originally provided at the City Hospital as part of the bed accommodation for fevers. So also the present accommodation for marasmic infants, extending to 20 beds, is part of the accommodation originally provided for fevers. This concentration of additional diseases within the Fever Hospital has necessarily led to considerable augmentation of the nursing and domestic staff, with the result that the nurses' home, which has accommodation for 50 nurses and 15 maids, at present accommodates 60 nurses and 20 maids, and an additional 30 nurses and 10 maids are accommodated in temporary and unsatisfactory annexes throughout the City Hospital grounds. It follows, therefore, that if adequate institutional provision is to be made for the special health services, then extensive and costly additions to the existing institutional accommodation have to be faced.

CITY HOSPITAL SERVICES.

The variety of diseases requiring treatment in the infectious diseases wards of the City Hospital have been greatly augmented within recent years. The diminution of fever beds to a quite inadequate number has been explained as being due to the encroachments made on the fever beds by the emergency provision of beds for tuberculosis and marasmus. The Town Council will have in mind that, in accordance with instructions from the Scottish Board of Health, additional institutional accommodation falls to be made for measles and whooping-cough. The two wards which will be liberated by the provision of new accommodation for tuberculosis,

if the proposed new provision for tuberculosis is sanctioned by the Council, would make adequate institutional provision for measles and whooping-cough. The Town Council will also have in mind that several additional infectious diseases, including acute poliomyelitis, epidemic encephalitis, the dysenteries, acute primary and influenzal pneumonias, and ophthalmia neonatorum, have been made compulsorily notifiable in recent years, and that it is a function of the Local Authority to make provision for the isolation and treatment of these infections. In this connection, it has to be pointed out that the utility of the present reception block at the hospital has been greatly curtailed by the setting apart of its main section for the accommodation of marasmic infants. The reception block affords the only accommodation at present available for the isolation of cases of mixed infection. It is greatly to be desired that the whole of the reception block should be set free for the accommodation of the additional infectious diseases for which provision has now to be made, and that a new cubicle isolation ward of 30 beds for the segregation of cases of mixed infection, for single cases of infection, and for doubtful cases, should be provided. It is to be noted that no Treasury grant is available for ordinary fever beds, while beds for tuberculosis and marasmus rank for both capital and maintenance grant.

The admissions to the City Hospital during the years under review are shown in Table XIV. The total admissions in 1922 amounted to 1,552, and in 1923 there were 1,128 cases admitted, as compared with an average of 1,934 during the 1913-1922 decennium, which embraces the years of epidemic prevalence of diphtheria and scarlet fever.

The daily number of patients under treatment varied from 168 to 246 in 1922, and from 155 to 210 in 1923, the average daily number during these two years being 198 and 180 respectively.

Small-pox.—One case of this disease, ending in recovery, was admitted to the City Hospital in March, 1923. The patient had contracted infection in Yorkshire. Details of the case appear in Chapter II. of the Report dealing with Morbidity, Mortality and Prevention of Infectious Diseases. No cases were reported during the year 1922.

Chicken-pox.—In 1922, 17 cases were admitted to hospital, and in 1923 there were 21 admissions. As was to be expected, no deaths from this disease occurred in hospital during the years under review.

Scarlet Fever.—The number of cases of scarlet fever admitted to hospital in 1922 was 272, and in 1923, 238. During the 1913-1922 decennium, the average annual admissions were 584. In 1922, there were 6 deaths, giving a case-mortality of 2·2 per cent., and in 1923, 4 deaths occurred, the case-mortality being 1·6 per cent. During the 1913-1922 decennium, the average annual number of deaths was 22, giving a case-mortality of 3·8 per cent. Reference to the cause of the varying mortality from scarlet fever is given in the 1916-21 report. The new work relative to the causation of scarlet fever performed mainly by American workers provides measures for the applications of serum therapy and preventive inoculation

TABLE XIV.—ABERDEEN.—CITY HOSPITAL.—ANNUAL SUMMARY.

† ADMISSIONS AND DEATHS DURING EACH YEAR FROM 1913 TO 1923 INCLUSIVE.

DISEASE.		1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1913-1922.	
													Total	Annual Average
Small Pox,	Admitted, ...	1	0	0	0	0	8	0	0	0	6	0	14	1.4
	Died, ...	0	0	0	0	0	0	0	0	0	1	0	1	0.1
	Percent. of Deaths	0	0	0	0	0	0	0	0	0	16.7	0	...	7.1
Scarlet Fever, ...	Admitted, ...	238	272	538	375	247	204	245	812	1267	1040	836	5836	583.6
	Died, ...	4	6	6	7	4	2	8	22	94	52	22	223	22.3
	Percent. of Deaths	1.6	2.2	1.1	1.9	1.6	1.0	3.3	2.7	7.4	5.0	2.6	...	3.8
Diphtheria,	Admitted, ...	185	287	684	536	533	348	327	553	618	1473	1911	7270	727.0
	Died, ...	8	14	35	28	29	19	18	32	40	117	105	437	43.7
	Percent. of Deaths	4.3	4.9	5.1	5.2	5.4	5.5	5.5	5.9	6.5	7.9	5.5	...	6.0
Typhoid and Para-Typhoid Fever,	Admitted, ...	23	9	6	7	22	104	1	10	13	12	27	211	21.1
	Died, ...	3	0	0	2	5	14	1	2	1	2	6	33	3.3
	Percent. of Deaths	13.0	0	0	28.6	22.7	13.5	100	20.0	7.7	16.7	22.2	...	15.6
Typhus Fever, ...	Admitted, ...	0	0	0	0	0	0	0	0	0	0	0	0	0
	Died, ...	0	0	0	0	0	0	0	0	0	0	0	0	0
	Percent. of Deaths	0	0	0	0	0	0	0	0	0	0	0	0	0
Erysipelas,	Admitted, ...	22	32	37	40	16	17	13	9	2	22	1	189	18.9
	Died, ...	0	4	3	4	1	2	1	1	0	2	1	19	1.9
Puerperal Fever, ...	Admitted, ...	8	4	7	9	4	4	2	3	1	4	0	38	3.8
	Died, ...	3	1	2	3	1	2	1	0	0	1	0	11	1.1
Cerebro-Spinal Meningitis	Admitted, ...	6	3	5	5	15	7	1	5	15	0	0	56	5.6
	Died, ...	3	2	3	1	11	7	1	2	11	0	0	38	3.8
Acute Poliomyelitis,	Admitted, ...	0	7	4	3	1	1	9	69	0	0	0	94	9.4
	Died, ...	0	0	2	0	1	1	0	2	0	0	0	6	0.6
Measles, ...	Admitted, ...	49	209	1	52	24	112	166	7	58	1	75	705	70.5
	Died, ...	11	39	0	6	0	4	11	0	8	0	18	86	8.6
	Percent. of Deaths	22.4	18.7	0	11.5	0	3.6	6.6	0	13.8	0	24.0	...	12.2
Tuberculosis	Admitted, ...	275	313	320	287	353	375	391	317	275	201	174	3006	300.6
	Died, ...	47	50	42	47	76	78	69	56	43	28	31	520	52.0
	Percent. of Deaths	17.1	16.0	13.1	16.4	21.5	20.8	17.6	17.7	15.3	13.9	17.8	...	17.3
† Ailing Infant Wards	Admitted, ...	167	192	178	143	96	...	...	0	0	0	0	...	...
	Died, ...	50	70	75	76	61	...	...	0	0	0	0	...	...
	Percent. of Deaths	29.9	16.0	43.2	53.1	63.5	...	...	0	0	0	0	...	...
Other Cases,	Admitted, ...	154	224	147	185	209	261	133	42	56	36	26	1319	131.9
	Died, ...	15	37	23	23	30	75	35	12	3	3	5	246	24.6
	Percent. of Deaths	9.7	16.5	15.6	12.4	14.4	28.7	26.3	28.5	5.4	8.3	19.2	...	18.6
Total Cases,	Admitted, ...	1128	1552	1927	1642	1520	1441	1288	1827	2305	2795	3050	19347	1934.7
	Died, ...	144	223	191	197	219	204	145	129	200	206	188	1902	190.2
	Percent. of Deaths	12.8	14.4	9.9	12.0	14.4	14.2	11.3	7.1	8.7	7.4	6.2	...	9.8
Average Daily Number of Patients in Hospital, ...		180	198	264	255	231	222	201	276	270	274	265	...	...

† Including cases admitted from outside City.

: From 1917 to 1919, admissions to Ailing Infant Wards included in "Other Cases."

to the treatment and control of scarlet fever, and a report on these methods as applied in Aberdeen will be made available in due course.

Diphtheria.—Of this disease, 287 cases were admitted during 1922, and 185 during 1923, as compared with an annual average of 727 during the 1913-1922 decennium. The deaths numbered 14 during 1922 and 8 during 1923, the case-mortality being 4·9 and 4·3 respectively, as compared with an average of 6·0 during the 1913-1922 decennium. Other things being equal, the diminution of mortality from diphtheria is directly dependent on the diagnosis of the disease in its earliest manifestations.

The report on toxin-antitoxin immunisation against diphtheria is given in Chapter II. of this Report.

Typhoid and Para-Typhoid Fever.—There were 9 admissions in 1922, and 23 in 1923. No deaths occurred during 1922, but there were 3 deaths in 1923, with a case-mortality of 13·0 per cent., the average annual number of deaths during the 1913-1922 decennium being 3·3, with a case-mortality of 15·6. Details concerning the increased prevalence of typhoid in 1923 are given in Chapter II. of this Report.

Erysipelas.—In 1922, 32 cases were admitted to hospital, with 4 deaths, and in 1923, 22 cases, with no deaths. The average annual number of cases admitted during the 1913-1922 decennium was 19, with 2 deaths.

Puerperal Fever.—In 1922, 4 cases were admitted, with 1 death, and in 1923, 8 cases, with 3 deaths, the average for the 1913-1922 decennium being 4 cases and 1 death.

Cerebro-Spinal Meningitis.—There were 3 admissions, with 2 deaths, in 1922, and 6 admissions, with 3 deaths, in 1923, as compared with an average of 6 admissions and 4 deaths in the 1913-1922 decennium.

Acute Poliomyelitis.—Seven cases were admitted to hospital in 1922. There were no admissions during 1923, and no deaths occurred during either of these years.

Measles.—In 1922, in the latter half of which year measles had assumed epidemic prevalence, 209 cases were admitted to hospital, with 39 deaths, the case-mortality being 18·7 per cent. The epidemic continued until January, 1923, and during that year there were 49 admissions, with 11 deaths, the case-mortality being 22·4. Details of the epidemic are given in Chapter II.

German Measles.—Four cases were admitted in 1922. No cases of this disease were admitted during 1923. As would be expected, there were no deaths.

Whooping-Cough.—During 1922, 32 cases were admitted, with 10 deaths. No cases were admitted during 1923.

Tuberculosis.—During 1922, 313 cases were admitted to hospital, and in 1923 the admissions numbered 275, as against an average of 301 during the 1913-1922 decennium.

Of the 313 cases admitted in 1922, all were cases of respiratory tuberculosis, except 27. These cases of other forms of tuberculosis consisted of 10 cases of tuberculosis of bones and joints, 1 case of tuberculous meningitis, 8 cases of abdominal tuberculosis, 6 cases of tuberculous glands, and 2 cases of cutaneous tuberculosis. Of the 286 respiratory cases in 1922, 141 were males and 145 females; and of the other cases, 13 were males and 14 females.

Of the 275 cases admitted in 1923, all were cases of respiratory tuberculosis, except 46. These cases of other forms of tuberculosis consisted of 13 cases of tuberculosis of bones and joints, 9 cases of tuberculous meningitis, 13 cases of abdominal tuberculosis, 9 cases of tuberculous glands, and 2 cases of cutaneous tuberculosis. Of the 229 cases of respiratory tuberculosis in 1923, 136 were males and 93 females; and of the other cases, 21 were males and 25 females.

The cases of respiratory tuberculosis discharged from the City Hospital in 1922 and 1923 numbered 233 and 191 respectively. As to the conditions on discharge, in 1922, 79 per cent. had improved in general health, 85 per cent. showed an increase in weight, 19 per cent. showed an improvement in the lung condition, some 64 per cent. were considered by the Tuberculosis Officer as fit for work or school, and in 59 per cent. of the cases the condition was stationary. Of cases discharged in 1923, 81 per cent. had improved in general health, 83 per cent. showed an increase in weight, 16 per cent. showed an improvement in the lung condition, 72 per cent. were considered by the Tuberculosis Officer as fit for work or school, and in 61 per cent. of the cases the condition was stationary.

As to the presence of tubercle bacilli in the sputum of cases admitted, in 1922 23 per cent. were positive, and in 1923, 24 per cent. In both the years under review, 22 per cent. of the patients had bacilli in the sputum on discharge.

Ailing Infant Wards.—During 1922, 192 cases were admitted, with 70 deaths; and in 1923, there were 167 admissions, with 50 deaths.

Acute Pneumonias.—During 1922, 52 cases of acute primary and acute influenzal pneumonia were admitted for treatment, as compared with 24 in 1923. A total of 6 cases during the two years proved suitable for serum therapy, being infections with Type 1 pneumococcus. During 1922, 14 deaths occurred, and in 1923 there were 3 deaths.

Miscellaneous Cases.—In 1922, 119 miscellaneous cases were admitted, with 13 deaths; and in 1923 there were 109 admissions, with 12 deaths.

Cleansing Block and Skin Department.—The joint arrangement between the Town Council and the Education Authority for the cleansing of verminous school children continues to be of the utmost value in reducing the incidence of vermin among the population, and full details of the diminution of verminous conditions

among school children are to be found in the annual reports of the Chief Medical Officer of the Education Authority.

Tables XV. (A) and (B) show that in 1922 and 1923 the numbers of verminous persons, whether members of families with children of school age or not, disinfected at the City Hospital Cleansing Station, were 309 and 387 respectively. These Tables also show that a total of 244 persons were treated for scabies in the skin wards of the cleansing block in 1922, and 209 in 1923.

TABLE XV (A).—ABERDEEN.—CLEANSING STATION.—YEAR 1922.

	AGE GROUPS (years).				ALL AGES.
	0-5	5-15	15-25	25+	
Verminous Persons Cleansed,	43	115	69	82	309*
Scabies Cases Treated,	34	95	52	63	244†
TOTALS,	77	210	121	145	553

* Including 21 Army Cases.

† Including 3 Army Cases.

TABLE XV (B).—ABERDEEN.—CLEANSING STATION.—YEAR 1923.

	AGE GROUPS (years).				ALL AGES.
	0-5	5-15	15-25	25+	
Verminous Persons Cleansed,	52	132	90	113	387*
Scabies Cases Treated,	27	73	38	71	209†
TOTALS,	79	205	128	184	596

* Including 23 Army Cases.

† Including 3 Army Cases.

TUBERCULOSIS SERVICES.

As has already been pointed out, the two wards at the City Hospital, accommodating a total of 125 tuberculosis patients, were made available by taking over and extending two wards originally provided as part of the bed accommodation for fever cases. In the adaptation of these wards for purposes of tuberculosis, the Town Council deliberately refrained from making any claim for capital expenditure thus incurred, having in view the desirability that these wards should, come time, revert to their original fever uses. It has also been pointed out in the previous annual report of the Medical Officer of Health that 200 beds are required for the accommodation of cases of pulmonary tuberculosis, and it is suggested that these 200 beds should be a new provision for tuberculosis, thus earning full capital and maintenance grants.

The need for providing increased institutional accommodation for cases of non-pulmonary tuberculosis has long been felt, and the provision of this accommodation will also require to receive consideration by the Town Council at an early date. The Table on page 72 records the number of cases of non-pulmonary tuberculosis notified since 1911 and still alive at the present date. Analysis of the figures shows that of a total of 1,115 cases, 346 have received institutional treatment. Up to the present time, the main mass of the cases requiring surgical interference have received treatment at the Sick Children's Hospital and Royal Infirmary, as also at the City Hospital, to which a considerable number of cases from the Sick Children's Hospital and Royal Infirmary are transferred after operation. With the facilities at present available, it is found that there is an average of 25 surgical cases constantly receiving institutional treatment, the number being limited by the number of available beds. In the opinion of Dr. Banks, the Tuberculosis Medical Officer, and myself, this number of beds would have to be considerably increased in the event of adequate institutional accommodation being made for cases of surgical tuberculosis. In addition, the great advance that has been made in recent years in the utilisation, for the treatment of disease, of radiant energy in the form of Ultra-Violet-rays and X-rays, and in particular in the application of such agencies to increase the bacterocidal power of the blood and improve metabolism, has provided a new therapy for tuberculosis, the application of which calls for still further institutional accommodation. In view of the need for additional accommodation for the treatment of cases of surgical tuberculosis, and of additional institutional provision wherein radiant energy may be applied to the treatment of tuberculous disease, it is considered that a total of 50 beds would be a moderate estimate of the bed accommodation that should be provided for cases of non-pulmonary tuberculosis.

Mortality from Tuberculosis.—As compared with the year 1921, there was an increase in the deaths from all forms of tuberculosis during 1922, and a further increase during 1923; the increases being almost wholly accounted for by the increase in non-pulmonary tuberculosis. The deaths during these two years, however, were considerably below the average for the 1916-1920 quinquennium.

ABERDEEN.—NON-PULMONARY TUBERCULOSIS.

Record of Cases notified since 1911 and still alive.

UNDER 15 YEARS OF AGE.					
Site of Tuberculosis.	Cases at present being visited.	Cases not now visited.	Indoor Institutional Cases that have received Treatment.		
			City Hospital.	Royal Infirmary.	Sick Chld. Hosp.
Glands	122	212	30	2	94
Joints and Bone	35	49	16	1	48
Abdomen	48	30	22	1	13
Skin	5	1	...	...	...
Generalised and other . .	7	3	2	...	4
Kidney	1	...	...	...	...
TOTAL	218	295	70	4	159

ABOVE 15 YEARS OF AGE.					
Site of Tuberculosis.	Cases at present being visited.	Cases not now visited.	Indoor Institutional Cases that have received Treatment.		
			City Hospital.	Royal Infirmary.	Sick Chld. Hosp.
Glands	77	321	21	25	13
Joints and Bone	36	81	18	7	1
Abdomen	21	29	14	10	...
Skin	15	8	...	...	...
Generalised and other . .	6	5	2	2	..
Kidney	2	1	...	...	...
TOTAL	157	445	55	44	14

In 1922, the deaths from respiratory tuberculosis amounted to 143, and in 1923 there were 128 deaths; as compared with 141 in 1921.

The deaths from other forms of tuberculosis were 41 in 1922 and 68 in 1923, as against 27 in 1921. This increase in the number of deaths from other forms of tuberculosis was mainly confined to children under five years of age.

It is important to note that deaths from non-pulmonary forms of tuberculosis definitely increased during the two years under review, the increase being mainly due to an increase in the number of cases of tuberculous meningitis, and, to a less extent, to an increase of tuberculosis of the intestines and peritoneum. Had deaths from these forms of tuberculosis remained at their former level then the curve of decline in all forms of tuberculosis, which has been continuous since 1866, would have been maintained.

Table XVI., as also the accompanying chart, shows the great fall in the tuberculosis death-rate during the past sixty odd years. The rapidity of the decline of the death-rate from respiratory tuberculosis, as represented by the slope of this line, in the accompanying diagram, shows that it has considerably slackened within the past decennium. The diagram also makes abundantly clear the fact of the much more rapid fall of the death-rate from other forms of tuberculosis in the earlier years of registration, as compared with later years, and as opposed to the two years under review, when the rate has again risen to what it was during the 1916-1920 quinquennium.

Tables XVII. (A) and (B) give the number of tuberculosis cases notified during 1922 and 1923, divided into respiratory and non-respiratory cases, and arranged according to sex and age-period. It will be observed that while respiratory cases were most numerous at the age-period of 5-45 years, and the non-respiratory at ages under 5 years, all forms of tuberculosis taken together, and estimated per year of age-period, show, on the whole, a well-marked declension in prevalence as age advances. It will also be observed that the number of deaths per year of age-period during both years under review, is highest in the 0-5 age-period. The notable increase in tuberculous meningitis is a matter for special inquiry. It is now contended that the large majority of cases of tuberculous meningitis are preceded by a miliary tuberculosis.

As regards the percentage of deaths to cases, during both years the percentage was lowest in the 5-15 period, being 9 per cent. in 1922 and 13 per cent. in 1923. In 1922, the death-rate from tuberculosis was highest in the 45-65 year age-period, being 74 per cent.; and in 1923 it was highest in the period 65 years and upwards, when the case-mortality was 75 per cent.

It may be noted that in 1922 the number of deaths at all ages from respiratory tuberculosis in relation to the number of notified cases was practically the same for each sex, while in 1923 the percentage was distinctly higher among males, being 56, as against 40 for females.

It is, of course, to be understood that in any reference to number of deaths in relation to cases notified, the deaths in any one year are, in considerable measure, deaths of cases notified in previous years, and, further, that owing to the admitted

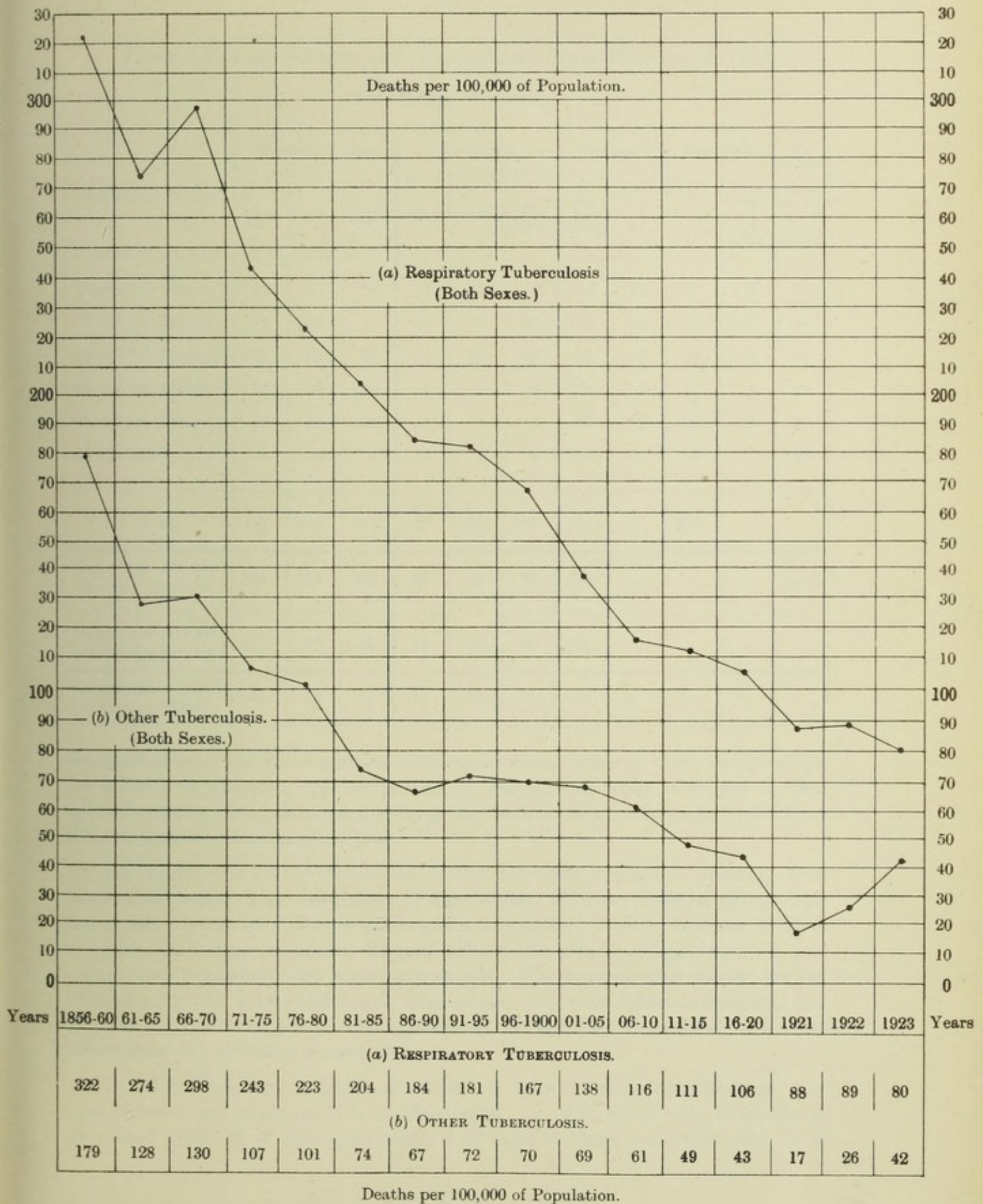
TABLE XVI.—ABERDEEN.—MORTALITY FROM TUBERCULOSIS IN YEARS 1856-1923,*
Per 100,000 of Population.

PERIOD.	RESPIRATORY TUBERCULOSIS.			OTHER TUBERCULOUS DISEASES.			ALL TUBERCULOUS DISEASES.		
	Males.	Females.	Both Sexes.	Males	Females.	Both Sexes.	Males.	Females.	Both Sexes.
1856-60 .	333	312	322	235	135	179	568	447	501
1861-65 .	267	279	274	158	103	128	425	382	402
1866-70 .	295	300	298	170	98	130	465	398	428
1871-75 .	234	250	243	129	89	107	363	339	350
1876-80 .	217	228	223	112	92	101	329	320	324
1881-85 .	189	216	204	90	62	74	279	278	278
1886-90 .	179	188	184	76	60	67	255	248	251
1891-95 .	179	183	181	83	62	72	262	245	253
1896-1900 .	166	168	167	77	64	70	243	232	237
1901-05 .	143	134	138	79	62	69	222	196	207
1906-10 .	119	113	116	74	51	61	193	164	178
1911-15 .	125	99	111	53	47	49	177	146	160
1916-20 .	104	107	106	49	39	43	153	146	149
1916 . .	110	120	116	39	29	34	149	150	149
1917 . .	132	102	116	67	49	57	199	151	173
1918 . .	107	114	111	57	47	51	164	161	162
1919 . .	95	82	88	50	37	43	145	119	131
1920 . .	77	116	98	31	32	32	109	148	130
1921 . .	81	95	88	18	16	17	98	111	105
1922 . .	103	77	89	31	21	26	135	98	115
1923 . .	106	57	80	53	33	42	159	90	122

* Corrected for transferred deaths in 1904 and subsequent years.

ABERDEEN—TUBERCULOSIS, 1856-1923.—QUINQUENNIAL PERIODS.

ALL AGES. BOTH SEXES.



(Corrected for transferred deaths in 1904 and subsequent years.)

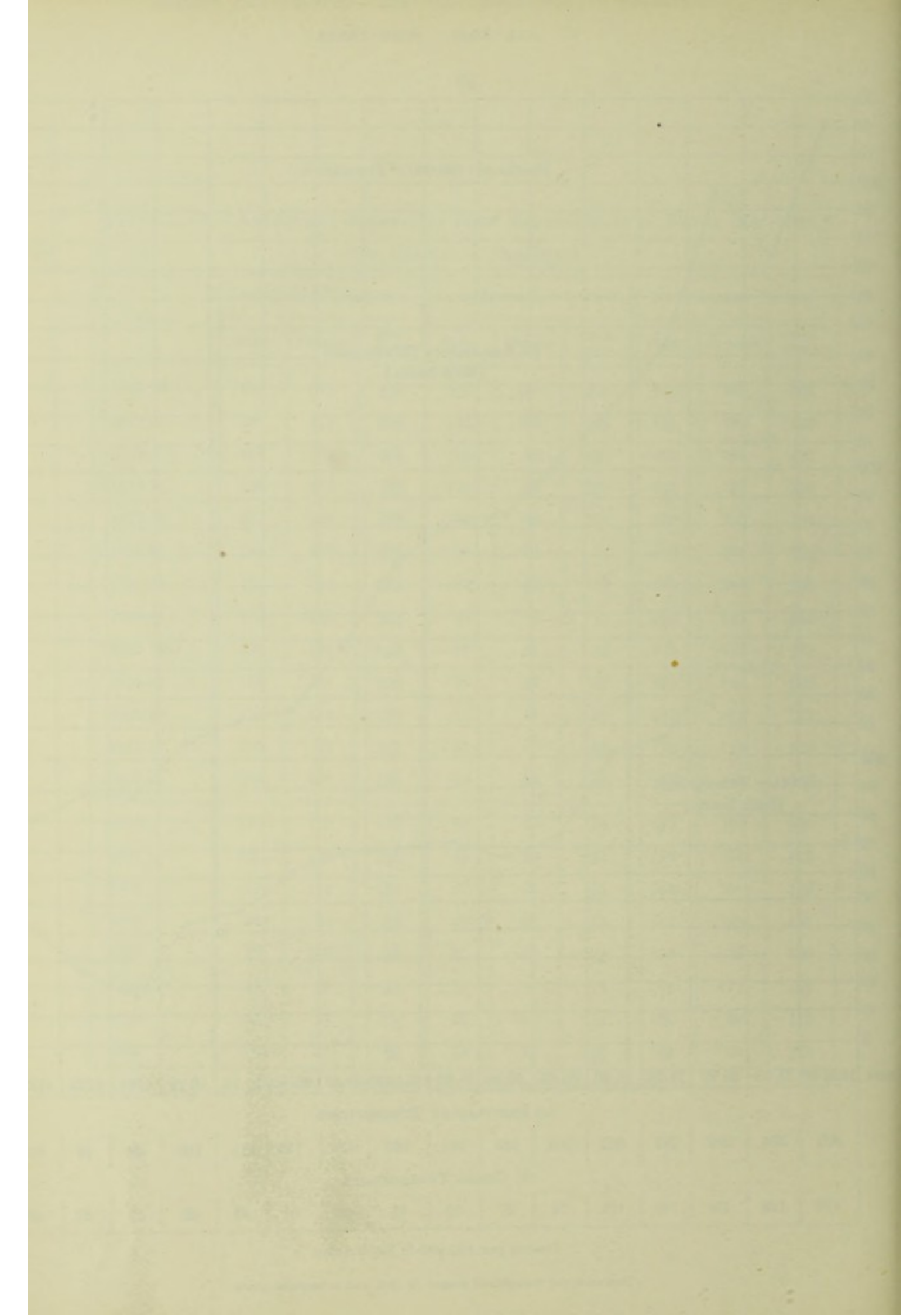


TABLE XVII (A).—ABERDEEN.—TUBERCULOSIS CASES NOTIFIED IN 1922.

(Corrected for Transfers).

AGE-PERIOD (Years).	Respiratory Tuberc.			Other Tuberc.			Total Cases.		Total Deaths.		Percentage of Deaths to Cases at each Age-Period.
	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	For Age-Period.	Per Year of Age-Period.	For Age-Period.	Per Year of Age-Period.	
Under 5 (5 Years), .	12	17	29	25	18	43	72	14	31	6	43
5—15 (10 Years), .	48	48	96	10	13	23	119	12	11	1	9
15—25 (10 Years), .	21	33	54	6	16	22	76	8	35	4	46
25—45 (20 Years), .	70	49	119	4	5	9	128	6	63	3	49
45—65 (20 Years), .	29	18	47	3	3	6	53	3	39	2	74
65 and above, .	4	4	8	1	1	2	10	...	5	...	50
ALL AGES, .	184	169	353	49	56	105	458	...	184	...	...
Cases per 100,000 of Sex Population }	251	194	220	67	64	65	285	...	...	...	...
Deaths per 100,000 of Sex Population }	103	77	89	31	21	26	115	...	...	...	...
Percentage of Deaths to Cases notified . }	41	40	41	47	32	39	40	...	...	...	...

incompleteness of the notification of tuberculous cases, which in their earlier stages are difficult to diagnose, the comparison of deaths with cases is subject to considerable qualification, although not altogether without value, when ages and sex are being compared within any one year.

As regards the *site of the disease*, in the 105 cases notified as suffering from tuberculosis other than respiratory during 1922, 17 cases were suffering from abdominal tuberculosis; 15 from tuberculous meningitis; 33 from tubercle of bones and joints, including the spine; 33 from tuberculous glands, mainly cervical; and 7 cases from generalised and other tuberculosis. The corresponding details for the 134 cases in 1923 were—abdominal tuberculosis, 36; tuberculous meningitis, 32; tubercle of bones and joints, 19; tuberculous glands, 31; generalised and other tuberculosis, 16, including 9 cases of lupus.

In 1922, there were 9 deaths of abdominal cases, 16 of meningitic cases, 6 of cases of bones and joints, and 10 of other cases. In 1923, there were 17 deaths of abdominal cases, 32 of meningitic cases, 6 of cases of bones and joints, and 13 of

TABLE XVII (B).—ABERDEEN.—TUBERCULOSIS CASES NOTIFIED IN 1923.
(Corrected for Transfers.)

AGE-PERIOD (Years).	Respiratory Tuberc.			Other Tuberc.			Total Cases.		Total Deaths.		Per-centage of Deaths to Cases at each Age-Period.
	Males.	Females	Both Sexes.	Males.	Females	Both Sexes.	For Age-Period.	Per Year of Age-Period.	For Age-Period.	Per Year of Age-Period.	
Under 5 (5 Years), .	6	9	15	30	32	62	77	15	43	9	56
5—15 (10 Years), .	29	32	61	14	10	24	85	9	11	1	13
15—25 (10 Years), .	25	25	50	9	10	19	69	7	40	4	58
25—45 (20 Years), .	45	43	88	10	12	22	110	6	63	3	57
45—65 (20 Years), .	30	13	43	1	5	6	49	2	33	2	67
65 and above, .	5	2	7	0	1	1	8	...	6	...	75
ALL AGES, .	140	124	264	64	70	134	398	...	196	...	...
Cases per 100,000 of Sex Population }	190	142	164	86	80	83	247	...	...	...	..
Deaths per 100,000 of Sex Population }	106	57	80	53	33	42	122	...	...	...	...
Percentage of Deaths to Cases notified }	56	40	48	61	41	51	49	...	...	...	...

other cases. The following Table, showing the number of non-pulmonary tuberculosis deaths during the years 1921-1923, is of sufficient interest to warrant being recorded.

Deaths from Tuberculosis other than Tuberculosis of Respiratory System.

	1923.	1922.	1921.
Tuberculous meningitis,	32	16	10
Tuberculosis of intestines and peritoneum, .	17	9	7
Tuberculosis of spine, joints, and bones, .	6	6	4
Tuberculosis of genito-urinary system, .	3	0	1
Tuberculosis of neck glands,	2	4	0
Disseminated tuberculosis,	8	3	3
Tuberculous otitis media,	0	3	0
Tuberculosis of skin,	0	0	2
	—	—	—
	68	41	27
	==	==	==

It has to be kept in mind that, while the cases of tuberculosis are classified according to the chief seat of the disease, the tubercle is in very many cases not definitely confined to one organ, although it is often much more manifest clinically and pathologically in one organ or part than in the rest of the body.

Occupations.—The following is a summary of the occupations of the cases notified during the two years under review. The numbers given have, of course, no value as an indication of the relative prevalence of the disease without information as to the number of persons engaged in each occupation. Moreover, even if these numbers were supplied—and they are obtainable from the census—they are in most instances too small to yield reliable statistical conclusions for a single year; but it may be said, speaking generally, that during both 1922 and 1923 labourers showed, among the males, the highest incidence.

ABERDEEN.—OCCUPATION OF PERSONS NOTIFIED AS SUFFERING FROM TUBERCULOSIS.
(a) *Males.*

	1922.		...	1923.	
	Respiratory.	Other.		Respiratory.	Other.
Children under school age,	15	26	...	9	30
Children at school,	46	10	...	27	14
Soldier (on service or discharged),	4	—	...	4	1
Engineer, Riveter, Fireman,	8	2	...	6	1
Labourer,	19	4	...	12	—
Millworker (including Combmaker),	6	1	...	2	—
Stonecutter or Mason,	5	—	...	6	—
Stonepolisher, Sawyer, Settmaker,	3	—	...	3	—
Clerk,	5	—	...	7	2
Joiner, Sawyer, Shipwright, Cabinet-maker,	5	—	...	7	2
Carter,	5	—	...	5	1
Tailor,	4	—	...	—	—
Painter,	1	—	...	1	—
Baker,	3	—	...	—	—
Printer or Lithographer,	—	—	...	—	1
Other or no occupation,	50	4	...	48	12
No information,	5	2	...	3	—
Totals,	184	49	...	140	64

(b) *Females.*

	1922.		...	1923.	
	Respiratory.	Other.		Respiratory.	Other.
Children under school age,	20	20	...	9	33
Children at school,	45	13	...	31	10
Wife or Widow,	52	10	...	35	9
Mill or Factory Worker,	11	3	...	13	3
Domestic Servant or Charwoman,	9	2	...	4	3
Dressmaker or Milliner,	4	1	...	4	—
Clerk or Typist,	5	2	...	4	4
Shop Assistant,	5	1	...	4	2
Fishworker,	3	1	...	2	—
Nurse,	4	—	...	1	—
Teacher or Student,	2	—	...	—	1
Laundry Worker,	1	—	...	—	—
Other, at home, or no occupation,	4	—	...	15	5
No information,	4	3	...	2	—
Totals,	169	56	...	124	70

TABLE XVIII (A).—ABERDEEN.—TUBERCULOSIS.—SIZE OF HOUSE IN RELATION TO NOTIFIED CASES AND REGISTERED DEATHS DURING 1922.

		1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	5 Rooms and up.	Institu- tional or not stated.	Totals for 1922.	CORRESPONDING TOTALS FOR	
									1921.	1920.
Respiratory Tuber- culosis (Cases),	Male, .	26	82	37	14	9	16	184	190	192
	Female, .	23	74	44	12	...	16	169	192	197
Both Sexes, {	Cases, .	49	156	81	26	9	32	353	382	389
	Deaths, .	14	59	40	15	4	11	143	141	158
Average Number of Inmates, including Patient, . . }		3.1	5.0	5.8	5.9	7.3	...	5.1	5.2	5.0
Other Tuberculosis . (Cases)	Male, .	5	26	10	1	2	5	49	43	66
	Female, .	3	26	16	4	3	4	56	53	79
Both Sexes, {	Cases, .	8	52	26	5	5	9	105	96	145
	Deaths, .	4	19	11	3	2	2	41	27	51
Average Number of Inmates, including Patient, . . }		3.1	4.7	6.4	4.8	6.8	...	5.1	5.6	5.7
All Houses in City at Census, 1921 } Average Number of Inmates, }		2.2	3.9	4.7	4.7	4.8	...	4.2	...	...

Insured Persons (National Insurance Act).—Of the 353 cases of respiratory tuberculosis notified during 1922, 133 were insured persons, 97 being male and 36 being female. In 1923, of the 264 notified cases of respiratory tuberculosis, 106 were insured persons, 76 being male and 30 being female.

The notified cases of other forms of tuberculosis in 1922 included 15 insured persons, 7 of whom were males and 8 females. In 1923, there were 27 insured persons, 15 male and 12 female.

As stated in the 1916-1921 report, the Town Council have now assumed full financial responsibility for the treatment of insured tuberculous patients. The accounts for medical prescriptions and the prescriptions themselves are forwarded to the National Health Insurance Central Checking Bureau in Glasgow to be audited, and are thereafter submitted for payment to the Town Council. In 1922 and 1923, the number of such prescriptions passed for payment amounted to 1,844 and 1,903 respectively.

Food Supply.—During 1922, food, chiefly milk and margarine, was supplied to an average daily total of 43 patients, and during 1923 the average daily number of patients receiving such supplies was 47.

TABLE XVIII (B).—ABERDEEN.—TUBERCULOSIS.—SIZE OF HOUSE IN RELATION TO NOTIFIED CASES AND REGISTERED DEATHS DURING 1923.

		1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	5 Rooms and up.	Institu- tional or not stated.	Total for 1923.	CORRESPONDING TOTALS FOR	
									1922.	1921.
Respiratory Tuber- culosis (Cases),	Male, .	10	52	45	15	10	8	140	184	190
	Female, .	15	56	29	14	5	5	124	169	192
Both Sexes,	Cases, .	25	108	74	29	15	13	264	353	382
	Deaths, .	7	54	28	20	14	5	128	143	141
Average Number of Inmates, including Patient, . . . }		3.0	5.1	5.7	5.4	5.6	...	5.0	5.1	5.2
Other Tuberculosis . (Cases)	Male, .	3	30	20	3	4	4	64	49	43
	Female, .	8	27	21	5	7	2	70	56	53
Both Sexes,	Cases, .	11	57	41	8	11	6	134	105	96
	Deaths, .	3	30	20	6	7	2	68	41	27
Average Number of Inmates, including Patient, . . . }		4.0	5.4	5.3	6.3	6.5	...	5.5	5.1	5.6
All Houses in City at Census, 1921 Average Number of Inmates, }		2.2	3.9	4.7	4.7	4.8	...	4.2	...	...

Supervision of Cases.—The Tuberculosis Medical Officer had the assistance of three Tuberculosis Health Visitors or Nurses in the visitation and supervision of tuberculosis cases throughout the period under review.

Size of House and Density of Occupancy.—The accompanying Tables XVIII. (A) and (B) give for 1922 and 1923 the number of cases occurring in houses of different sizes, along with the average number of inmates. In the case of respiratory tuberculosis, the average number of inmates, including the patient, varied from 3.1 in one-roomed houses, to 5.8 in three-roomed, 5.9 in four-roomed, and 7.3 in houses of five rooms and upwards. For 1923, these numbers were 3.0, 5.7, 5.4 and 5.6 respectively. The average for houses of all sizes taken together was 5.1 for 1922 and 5.0 for 1923.

In the cases of other forms of tuberculosis in 1922, the average ran from 3.1 for one-roomed houses to 6.4 for three-roomed houses and 6.8 for houses of five rooms and upwards. In 1923, the corresponding numbers were 4.0, 5.3, and 6.5 respectively. The average for all houses was 5.1 in 1922, and 5.5 in 1923.

As regards the position of the tuberculous cases in relation to room and bed accommodation at the time of notification, it was found in 1922 that of the 353 cases of respiratory tuberculosis, only 67, or 19 per cent., were occupying a separate

TABLE XIX.—ABERDEEN—TUBERCULOSIS CASES—ROOM AND BED ACCOMMODATION AT NOTIFICATION.

Year.	RESPIRATORY TUBERCULOSIS.												OTHER TUBERCULOSIS.																			
	MALES.				FEMALES.				BOTH SEXES.				MALES.				FEMALES.				BOTH SEXES.											
	Separate Bed.		No separate Room or Bed.		Not stated.		Totals.		Separate Bed.		No separate Room or Bed.		Not stated.		Totals.		Separate Bed.		No separate Room or Bed.		Not stated.		Totals.		Separate Bed.		No separate Room or Bed.		Not stated.		Totals.	
	and separate Room.	but not separate Room.							and separate Room.	but not separate Room.							and separate Room.	but not separate Room.							and separate Room.	but not separate Room.						
1923	38	19	81	2	140	37	15	68	4	124	75	34	149	6	264	9	17	37	1	64	12	15	41	2	70	21	32	78	3	134		
1922	43	26	101	14	184	24	13	115	17	169	67	39	216	31	353	4	14	24	7	49	6	12	34	4	56	10	26	58	11	105		
1921	57	22	102	9	190	42	24	116	10	192	99	46	218	19	382	7	10	23	3	43	6	19	22	6	53	13	29	45	9	96		
1920	59	23	98	12	192	58	19	109	11	197	117	42	207	23	389	11	14	33	8	66	9	23	41	6	79	20	37	74	14	145		
1919	66	29	138	15	248	56	25	122	8	211	122	54	260	23	459	9	19	51	1	80	13	15	32	7	67	22	34	83	8	147		
1918	92	21	104	12	229	59	23	81	8	171	151	44	185	20	400	13	20	41	6	80	15	24	54	8	101	28	44	95	14	181		
1917	71	33	94	16	214	55	25	116	6	202	126	58	210	22	416	9	22	33	1	65	12	25	52	7	96	21	47	85	8	161		
Aver. 1917-1921	69	26	107	13	215	54	23	109	8	194	123	49	216	21	409	10	17	36	4	67	11	21	40	7	79	21	38	76	11	146		

bed in a separate room, and 39, or 11 per cent., had a separate bed but not a separate room. In 1923, of the 264 respiratory cases, 75, or 28 per cent., were occupying a separate bed in a separate room, and 34, or 13 per cent., had a separate bed but not a separate room. In both years, more than one-half had neither a separate bed nor a separate room.

Assistance in Payment of Rent.—In December, 1916, the Town Council voted £100 out of the Common Good for the purpose of assisting necessitous tuberculous patients to secure improved housing accommodation while suffering from tuberculosis. During the two years under review two tuberculous patients have received such assistance.

Loan of Beds.—In order to facilitate the separation of the patient from the other members of the household, 69 beds or cots, with the necessary bedding, were given on loan to needful patients in 1922, and 68 such beds or cots in 1923. On the last day of 1923, there were on loan 184 beds with bedding, as against 267 at the end of 1921. In addition, at the end of 1923, there were 11 sets of bedding on loan, as against 59 at the end of 1921. The loaned beds and bedding continue to be well cared for, and are nearly always returned in good and clean condition, subject to the unavoidable effects of ordinary use.

Institutional Treatment.—The accompanying Table contains information as to the number of cases that were admitted to indoor institutional treatment during the years under review, or were in clinical institutions when notified. The number of cases for each institution is given, and a distinction is made between respiratory cases and cases of other forms of tuberculosis.

In 1922, a total of 385 cases of all forms of tuberculosis were admitted to indoor institutional treatment, after deducting 13 cases that had received treatment in two institutions. The net number for 1923 was 363, 18 cases having received treatment in two institutions.

Of 317 respiratory cases treated in 1922, 78 were under ten years of age, 81 between ten and twenty years, 105 between twenty and forty years, and 53 above forty. Of 276 respiratory cases treated in 1923, 70 were under ten years of age, 53 between ten and twenty years, 90 between twenty and forty years, and 63 above forty. Of the other tuberculous cases, the numbers for the corresponding age periods in 1922 and 1923 were, respectively, 28, 24, 14, and 2; and 49, 16, 19, and 3.

The average stay of the tuberculosis cases discharged during 1922 from the hospitals and sanatoria giving indoor institutional treatment was, in respect of respiratory cases, 126 days for the City Hospital, 74 days for the Royal Infirmary, 60 days for the Sick Children's Hospital, and 143 for Newhills Sanatorium. The corresponding numbers for 1923, for the same institutions, were 141, 64, 16, and 158.

As regards the cases of other forms of tuberculosis in 1922, the average stay was 90 for the City Hospital, 83 for the Royal Infirmary, and 48 for the Sick Children's Hospital; the corresponding figures for 1923 being 171, 29, and 50.

As to outdoor institutional treatment during 1922, 687 cases, all of which were respiratory except 43, received treatment in the Tuberculosis Institute at the City Hospital; and in 1923 the cases numbered 670, 31 being cases other than respiratory.

TUBERCULOSIS CASES NOTIFIED AND RECEIVING INDOOR INSTITUTIONAL TREATMENT.

	1922.				1923.		
	Resp. Tuberc.	Other Tuberc.	Total.		Resp. Tuberc.	Other Tuberc.	Total
City Hospital (Sanator. Wards and Shelters), . . .	238	25	263	...	195	46	241
Newhills Sanatorium, . . .	10	0	10	...	19	1	20
Parish Council Hospital, . . .	6	2	8	...	5	2	7
Royal Infirmary, . . .	18	9	27	...	25	8	33
Cults Convalescent Home, . . .	0	3	3	...	1	0	1
Royal Hospital for Sick Children, . . .	5	20	25	...	4	28	32
Eidda Home (for children), . . .	1	2	3	...	1	0	1
Linnmoor Home, do. . .	32	6	38	...	20	2	22
Scotston Moor Camp, do. . .	6	2	8	...	2	0	2
Kingseat Mental Hospital, . . .	3	0	3	...	4	0	4
Royal Mental Hospital, . . .	1	0	1	...	1	0	1
Nursing Home (Aberdeen), . . .	1	0	1	...	0	1	1
Institutions not connected with city :—							
A. In Scotland, . . .	7	1	8	...	10	2	12
B. In England, . . .	0	0	0	...	3	1	4
Total admissions, . . .	328	70	398	...	290	91	381
Deduct cases treated in two institutions, . . .	11	2	13	...	14	4	18
	317	68	385	...	276	87	363

VENEREAL DISEASES SERVICES.

The Chief Treatment Centre under the Joint Venereal Diseases Scheme for the City of Aberdeen and North-Eastern Counties continues to function at Aberdeen Royal Infirmary. In 1922, the County of Zetland became a contributor to the Scheme, on the same basis as to share in costs as the County of Orkney. The accommodation for the treatment of venereal diseases at the Royal Infirmary, however, is inadequate. Representations to this effect have been made by the Infirmary Directors to the Town Council, and plans have been prepared with a view to providing increased in-patient and out-patient accommodation at the Infirmary. In giving consideration to this matter, it is necessary to have in mind the conditions under which the Venereal Disease service developed, and that an examination should be made of the results achieved under the existing arrangement. When the Venereal Diseases Regulations, 1916, made it the duty of the Local Authority to formulate a scheme for the early diagnosis and treatment of venereal infections, there was an increasing wave of venereal disease throughout the country due to war conditions. In this emergency the obvious course was to utilise existing centres of medical treatment, and accordingly the Royal Infirmary became the main treatment centre and was equipped for this new purpose. This arrangement entailed the contracting out of the venereal disease work to the Directors of the Royal Infirmary. In none of the other three chief cities in Scotland was the work contracted out in anything like the same degree. In Glasgow, while part of the work was contracted out to the voluntary hospitals, a main municipal centre was also established. In Edinburgh, the part of the Royal Infirmary utilised for a venereal disease centre became to all intents and purposes a municipal centre staffed and controlled by Edinburgh Town Council. In Dundee, the undertaking became wholly a municipal one. The record of the work done at these treatment centres in each of the four principal cities of Scotland is available for comparison, and the accompanying Table records the activities of these centres during the past five post-war years, when the centres can be regarded as functioning to their full extent. Examination of this Table shows that in Glasgow an average of 5·9 per 1,000 of the population have received treatment at the treatment centres; in Edinburgh, an average of 6·2 per 1,000 of population; in Dundee, an average of 7·7 per 1,000; and in Aberdeen, an average of 3·6 per 1,000. In other words, the treatment centres in Glasgow, Edinburgh and Dundee have been doing double the amount of work on an equal population basis as compared with the work accomplished at the Aberdeen centres.

VENEREAL DISEASES.—Fresh Cases dealt with under Schemes at Treatment Centres in Four Principal Towns of Scotland. (Where Centres serve Joint Area, figures refer to City Cases only.)

	POPULATION. (Census, 1921.)	NUMBER OF CASES.						PER 1,000 OF POPULATION.						VENEREAL DEATHS. Syphilis, Parasyph. (gen. paral., loc. atax., and aneurysm), and other venereal diseases.	
		Total.	Syph.	Gen.	Soft Ch.	Mixed Infs.	Not V.D.	Total.	Syph.	Gen.	Soft Ch.	Mixed Infs.	Not V.D.	Number of Deaths.	Per 1,000 of Population.
Glasgow.	1923	5643	2327	2348	135	446	387	5.5	2.3	2.3	0.1	0.4	0.4	187	0.18
	1922	5858	2737	2040	211	666	204	5.7	2.7	2.0	0.2	0.6	0.2	178	0.17
	1921	6552	2690	2215	396	803	448	6.3	2.6	2.1	0.4	0.8	0.4	208	0.20
	1920	6565	2514	2441	293	911	406	6.4	2.4	2.4	0.3	0.9	0.4	192	0.19
	1919	5724	2044	2385	202	826	267	5.5	2.0	2.3	0.2	0.8	0.2	184	0.18
Average .		6068	2463	2286	247	730	342	5.9	2.4	2.2	0.3	0.7	0.3	190	0.18
Edinburgh.	1923-24	3051	919	1343	112	51	626	7.2	2.2	3.2	0.3	0.1	1.4	64	0.15
	1922-23	2555	950	1042	105	67	391	6.1	2.3	2.5	0.2	0.2	0.9	80	0.19
	1921-22	2198	939	653	109	216	281	5.2	2.2	1.5	0.3	0.5	0.7	103	0.24
	1920	...	...	...	...	...	...	...	...	...	...	...	...	79	0.25
	1919	...	...	...	...	...	...	...	...	...	...	...	...	65	0.21
Average .		2602	936	1013	109	111	433	6.2	2.2	2.4	0.3	0.3	1.0	78	0.21
Dundee.	1923	715	306	343	...	16	50	4.3	1.8	2.1	...	0.1	0.3	38	0.23
	1922	970	365	359	...	...	246	5.8	2.2	2.2	...	...	1.4	29	0.18
	1921	1611	854	757	...	...	...	9.6	5.1	4.5	...	...	...	35	0.21
	1920	1816	1057	759	...	...	...	10.8	6.3	4.5	...	...	...	37	0.22
	1919	1399	620	344	...	...	435	8.3	3.7	2.0	...	...	2.6	29	0.18
Average .		1302	641	512	...	3	146	7.7	3.8	3.0	...	...	0.9	34	0.20
Aberdeen.	1923	468	154	213	2	18	81	2.9	1.0	1.3	...	0.1	0.5	32	0.20
	1922	491	174	206	1	21	89	3.0	1.1	1.3	...	0.1	0.5	40	0.25
	1921	572	309	263	...	...	...	3.6	1.9	1.7	...	...	...	34	0.21
	1920	737	439	298	...	...	...	4.6	2.7	1.9	...	...	...	44	0.28
	1919	621	354	267	...	...	...	3.9	2.2	1.7	...	...	...	36	0.23
Average .		578	286	249	1	8	34	3.6	1.8	1.6	...	...	0.2	37	0.23

It must clearly be recognised that the personnel engaged in the work in Aberdeen are in no way responsible for the disappointing results obtained. On the contrary, their earnest endeavour to carry out their duties in inadequate premises has always been of a high order. Nevertheless, the inadequacy of the premises at the Royal Infirmary does not explain the meagreness of the achievement, since at a time when the City Hospital Sub-Centre was functioning unfettered, but in premises much less adequate than those at the Royal Infirmary, abundant evidence was obtained of the swelling volume of cases that could be attracted there and that proportionately exceeded the figures for the other three great cities. Nor is there any evidence to show that venereal disease is less rife in Aberdeen than in the south. On the contrary, reference to the accompanying Table shows that the death-rate from syphilis and other venereal diseases and from parasyphilitic conditions in Aberdeen is in slight excess of the death-rate from these causes in the other three cities. The more that the causes that may have influenced the failure of the chief Aberdeen Centre to attract cases are studied, the more does it appear that it is the atmosphere and environment of the dispensary of a general hospital that is inimical to successful results. Broadly speaking, the general dispensary is an end in itself. It provides treatment for a multiplicity of conditions which are usually capable of more or less rapid alleviation and cure. Thus the patient with a subcutaneous abscess wants the abscess evacuated and dressed, and there the service ends. In such a case social services can be largely discounted. The institutional services of any of the municipal services, however, are only a part, and often a small, though vital, part of the newer health measures. The newer health services are essentially social in character, and the social service must permeate every aspect of the work. The dispensaries of general hospitals are primarily organised on a charitable basis to provide certain clearly defined and limited curative services for the deserving poor, and in such surroundings any communal health service, and especially such a communal service as that relating to venereal disease with its peculiar problems, must almost inevitably languish. In this respect the experience of Aberdeen has been the experience of Glasgow and other centres where venereal disease work has been farmed out.

The establishment of the chief venereal centre in the premises of the Royal Infirmary was further alleged to have an additional advantage in that the Infirmary receives most of the cases that suffer from the remote effects of venereal infection. Thus, neurological, circulatory and gynecological diseases appearing as late manifestations of venereal infection, are commonly admitted to the wards of the Royal Infirmary, and it was considered advantageous that the venereal

diseases clinical officer working on the premises should be available for consultation in connection with such cases. Such a contention probably holds good for all the clinical services of the Town Council. Thus the consultative services of the tuberculosis clinical officer would no doubt be helpful in connection with cases of pulmonary and surgical tuberculosis appearing in the course of the practice of the Royal Infirmary. But the advantages to be derived from an association of expert services under one roof are greater in relation to clinical services other than venereal services owing to the fact that the venereal infections are so protean in their clinical manifestations that it is impossible for any venereal clinician to be expert in all branches of the work. Basic knowledge of venereal investigation is essential to the expert neurologist and gynecologist. In any event, consultative services have always been made available to the fullest extent by the Town Council, and there is no argument that can be urged as to the desirability of having the institutional provision for venereal diseases at the Royal Infirmary, that cannot be urged with greater justification in favour of such association for the other clinical services of the Council.

In order to achieve the best results, the new buildings for the in-patient and out-patient treatment of cases of venereal disease should be made homologous with the institutional provision of the other health services of the City. The urgency of the need for new institutional accommodation for venereal diseases is very great, and under this heading there falls to be provided 30 beds for in-patients and an out-patient department.

The Sub-Centre at the City Fever Hospital continues to deal with such cases as might not take advantage of the general clinic.

The following statistical data of the incidence and treatment of venereal diseases, as measured under the Joint Scheme, is submitted for the years under review :—

CHIEF TREATMENT CENTRE AT ABERDEEN ROYAL INFIRMARY.

TOTAL NUMBER OF NEW CASES.

YEAR.	WHOLE JOINT SCHEME.												ABERDEEN CITY CASES ONLY.											
	TOTAL.	Syphilis.		Gonorrhoea.		Soft Ch.		Mixed Infs.		Not V.D.		TOTAL.	Syphilis.		Gonorrhoea.		Soft Ch.		Mixed Infs.		Not V.D.			
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
1923	626	109	100	235	41	6	0	24	9	58	44	460	64	83	183	29	2	0	13	5	48	33		
1922	677	139	91	240	49	4	0	21	13	77	43	469	85	69	174	30	1	0	15	6	56	33		
*1921	711	256	151	263	41							539	173	107	221	38								
*1920	762	325	137	263	37							580	228	99	221	32								
*1919	648	280	92	240	36							512	204	71	205	32								
*1918	387	149	104	110	24							316	112	90	96	18								
Aver. 1918-21	627	252	121	219	35							487	179	92	186	30								

IN-PATIENT CASES.

YEAR.	WHOLE JOINT SCHEME.												ABERDEEN CITY CASES ONLY.											
	TOTAL.	Syphilis.		Gonorrhoea.		Soft Ch.		Mixed Infs.		Not V.D.		TOTAL.	Syphilis.		Gonorrhoea.		Soft Ch.		Mixed Infs.		Not V.D.			
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
1923	63	16	6	13	12	2	0	5	7	0	2	22	5	3	6	4	1	0	1	1	0	1		
1922	54	10	9	13	10	0	0	1	9	0	2	16	2	4	6	2	0	0	1	0	1	1		
1921	72	12	29	9	11	1	0	2	8	0	0	32	6	17	4	3	0	0	1	1	0	0		
1920	56	15	15	17	4	0	0	2	3	0	0	18	4	5	6	1	0	0	2	0	0	0		
1919	66	27	18	12	4	0	0	2	3	0	0	23	6	8	5	2	0	0	1	1	0	0		
1918	45	11	10	7	6	0	0	4	7	0	0	22	3	6	1	4	0	0	2	6	0	0		
Aver. 1918-21	60	17	18	11	6	0	0	3	5	0	0	24	5	9	4	3	0	0	1	2	0	0		

ATTENDANCES OF ALL CASES.

YEAR.	WHOLE JOINT SCHEME.												† ABERDEEN CITY CASES ONLY.											
	TOTAL.	Syphilis.		Gonorrhoea.		Soft Ch.		Mixed Infs.		Not V.D.		TOTAL.	Syphilis.		Gonorrhoea.		Soft Ch.		Mixed Infs.		Not V.D.			
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
1923	24,457	3,959	3,892	10,485	3,607	18	8	858	1,128	117	85	21,286	3,191	3,346	9,706	3,225	10	1	709	965	75	58		
1922	23,415	4,485	3,366	10,878	2,586	14	0	998	892	126	70	20,550	3,670	2,832	10,054	2,176	9	0	930	727	96	56		
*1921	18,413	3,697	2,211	10,548	1,957																			
*1920	14,231	2,764	1,461	8,753	1,253																			
*1919	10,658	2,184	1,224	6,355	895																			
*1918	5,784	1,337	1,229	2,514	704																			
Aver. 1918-21	12,272	2,496	1,531	7,043	1,202																			

* Until 1922 all V. D. cases were classified under either "Syphilis" or "Gonorrhoea."

† Until 1922 no separate record was kept of the attendances of City Cases.

LABORATORY EXAMINATIONS.

(a) Total Number.

YEAR.	WHOLE JOINT SCHEME.							*ABERDEEN CITY CASES ONLY						
	TOTAL.	Syphilis.				Gonorrhoea.		TOTAL.	Syphilis.				Gonorrhoea.	
		Wassermann		Spirochete.		Gonococcus.			Wassermann.		Spirochete.		Gonococcus.	
		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
1923	7,164	1,459	3,163	41	117	514	1,870	5,635	1,115	2,518	27	105	407	1,463
1922	6,336	1,128	3,211	54	129	415	1,399	4,869	862	2,544	34	115	312	1,002
1921	4,462	677	2,401	88	145	384	767							
1920	3,441	795	1,716	74	122	299	435							
1919	2,337	669	1,072	54	86	276	180							
1918	1,322	435	578	38	47	111	113							
Aver. 1918-1921	2,891	644	1,442	63	100	268	374							

(b) Included in the foregoing Table (a) are the following number of specimens sent by private practitioners.

YEAR.	WHOLE JOINT SCHEME.							*ABERDEEN CITY CASES ONLY.						
	TOTAL.	Syphilis.				Gonorrhoea.		TOTAL.	Syphilis.				Gonorrhoea.	
		Wassermann.		Spirochete.		Gonococcus.			Wassermann.		Spirochete.		Gonococcus.	
		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
1923	749	119	321	1	15	80	213	519	62	196	1	15	69	176
1922	873	124	433	2	8	72	234	550	72	239	2	8	56	173
1921	741	114	387	10	16	49	165							
1920	768	187	407	7	17	48	102							
1919	463	146	227	7	10	27	46							
1918	251	73	105	4	11	21	37							
Aver. 1918-1921	556	130	282	7	14	36	87							

(c) Included in Table (a) are also the undernoted numbers of bodies of infants, mostly still-born (all from City) examined for Syphilis.

YEAR.	Number of Bodies Examined.	Number found to contain the Spirochete of Syphilis
1923	65	7
1922	65	5
1921	56	14
1920	57	12
1919	43	7
1918	34	7
Average 1918-1921	48	10

* Until 1922, no separate record was kept of Laboratory examinations for City cases.

SPECIAL DRUGS.

(a) *No. of injections of Salvarsan or substitutes for all cases—either in-patients or out-patients—attending Treatment Centre.*

YEAR.	Total Doses.	Male.	Female.
1923	3,981	2,095	1,886
1922	4,265	2,452	1,813
1921	2,979	1,847	1,132
1920	2,619	1,720	899
1919	2,179	1,306	873
1918	1,806	951	855
Average 1918-1921	2,396	1,456	940

(b) *Number of doses supplied to private practitioners.*

YEAR.	WHOLE JOINT SCHEME.		ABERDEEN CITY ONLY.	
	Number of Private Practitioners.	Total Number of Doses.	Number of Private Practitioners.	Total Number of Doses.
1923	31	333	11	268
1922	28	555	10	311
1921	24	821	10	519
1920	22	871	9	519
1919	16	521	8	451
1918	4	218	4	218
Average 1918-1921	17	608	8	427

SUB-CENTRE AT ABERDEEN CITY FEVER HOSPITAL FOR
TREATMENT OF CERTAIN CITY CASES.

TOTAL NUMBER OF NEW CASES.

YEAR.	TOTAL.	Syphilis.		Gonorrhœa.		Soft Ch.		Mixed Infs.		Not V.D.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1923	8	3	4	1	0	0	0	0	0	0	0
1922	22	15	5	0	2	0	0	0	0	0	0
*1921	33	15	14	1	3						
*1920	157	67	45	26	19						
*1919	109	33	46	28	2						
*1918	129	53	51	23	2						
Aver. 1918-1921	107	42	39	19	7						

* Until 1922, all V.D. cases were classified under either "Syphilis" or "Gonorrhœa."

IN-PATIENT CASES.

YEAR.	TOTAL.	Syphilis.		Gonorrhœa.		Soft Ch.		Mixed Infs.		Not V.D.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1923	5	2	2	1	0	0	0	0	0	0	0
1922	10	4	4	0	2	0	0	0	0	0	0
1921	13	4	3	1	5	0	0	0	0	0	0
1920	38	12	4	1	19	0	0	0	2	0	0
1919	21	5	10	0	5	0	0	0	1	0	0
1918	8	4	4	0	0	0	0	0	0	0	0
Aver. 1918-1921	20	6	5	1	7	0	0	0	1	0	0

ATTENDANCES.

YEAR.	TOTAL.	Syphilis.		Gonorrhœa.		Soft Ch.		Mixed Infs.		Not V.D.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1923	131	98	27	3	3	0	0	0	0	0	0
1922	248	196	50	0	2	0	0	0	0	0	0
*1921	445	203	151	58	33						
*1920	1,007	382	254	351	20						
*1919	884	306	215	358	5						
*1918	1,049	366	388	290	5						
Aver. 1918-1921	846	314	252	264	16						

* Until 1922, all V.D. cases were classified under either "Syphilis" or "Gonorrhœa."

LABORATORY EXAMINATIONS.

YEAR.	TOTAL.	SYPHILIS.				GONORRHŒA.	
		Wassermann.		Spirochete.		Gonococcus.	
		Positive.	Negative.	Positive.	Negative.	Positive.	Negative.
1923	194	52	117	2	2	8	13
1922	184	40	129	0	3	3	9
1921	280	63	178	2	3	20	14
1920	541	133	273	8	16	72	39
1919	311	77	200	0	4	30	0
1918	348	98	212	0	1	30	7
Average 1918-1921	370	93	216	2	6	38	15

Ophthalmia Neonatorum.—Cases of this disease properly come under the survey and control of the Mother and Child Welfare officials, and the Health Department keeps all such cases under review and arranges for expert ophthalmic services whenever required.

In 1922, 47 cases of ophthalmia neonatorum were notified, and in 1923 there were 63 cases, the average annual number of cases during the three years 1919-1921 being 104. This decrease in cases of ophthalmia neonatorum during the years under review is coincident with a decrease in venereal infections in general, as recorded at the treatment centres.

Ophthalmia neonatorum is commonly due to gonorrhœal infection at birth, and may lead to permanent impairment and even loss of sight if not immediately treated. During the two years under review, every case was visited by a Health Visitor. With the exception of two cases that died from intercurrent illness during treatment, all the cases recovered without impairment of vision.

BLIND PERSONS SERVICES.

The Welfare of Blind Persons became a statutory duty of the Town Council under the Blind Persons Act, 1920. The Act permits the Council, subject to the approval of the Scottish Board of Health, to make such arrangements as they consider desirable for promoting the welfare of blind persons either through existing voluntary agencies or by taking over such agencies and discharging their functions to municipalise the service.

In this connection, the Public Health Committee of the Town Council, in October, 1923, instructed the Medical Officer of Health to report on the existing provision made for blind persons in the City, and as to what action had been taken under Section 2 of the Blind Persons Act, 1920, which states *inter alia*—"It shall be the duty of the Council, whether in combination with any other Council or Councils, to make arrangements, to the satisfaction of the Board of Health, for promoting the welfare of blind persons resident within their area, and such Council may, for this purpose, provide and maintain or contribute towards the provision and maintenance of workshops, hostels, homes, or other places for the reception of blind persons, whether within or without their area."

The following is an excerpt of the report, dated 14th January, 1924, submitted to the Town Council:—

Regulations under which grants would be paid by the Scottish Board of Health in aid of the welfare of the blind were issued prior to the Act, and intimated that the Board of Health would pay 50 per cent. both in respect of capital expenditure and of all expenditure incurred in the way of maintenance of blind persons. In 1920, also, in correspondence with the Board, it was made clear that a combined scheme for Aberdeen and the North-Eastern Counties should be prepared; and in terms of the Minute of Conference of the Public Health Sub-Committee of the Town Council of Aberdeen with representatives from the County Councils of the North-Eastern Area and representatives of the Aberdeen Asylum for the Blind and the Aberdeen Town and County Association for Teaching the Blind at their Homes, it was resolved to recommend to the Councils concerned—

- (1) That the Town Council of Aberdeen and the County Councils of Aberdeen, Banff, Kincardine, Orkney and Shetland, and also of Moray (if disposed to join) combine for carrying out the powers and provisions of the Act.
- (2) That such provision for the blind as the combined Councils may find it expedient or necessary to undertake be made through and with the assistance of approved voluntary agencies for the blind.

It was further resolved to suggest—

- (a) That the existing voluntary agencies within the proposed combination area, *i.e.*, the Aberdeen Asylum for the Blind and the Aberdeen Town and County Association for Teaching the Blind at their Homes, be, if possible, amalgamated with one body of managers.

- (b) That a remit be made to the Town Clerk of Aberdeen, the County Clerk of Aberdeen, and the Medical Officer of Health for the City of Aberdeen to prepare a draft scheme for the purpose of giving effect to the foregoing resolutions, the draft to be submitted to an adjourned meeting.

Grants in Aid.—Previous to the coming into force of the Blind Persons Act, the Scottish Board of Health, in a circular dated 18th August, 1919, accompanied by a letter dated 13th September, 1919, provided for the payment of grants by the Scottish Board of Health in aid of the welfare of the blind. In that circular it was stated that grants would be payable to agencies (that is, institutions, societies, or bodies engaged in work for the blind) only if these agencies were approved by the Board after consultation with the Council of the appropriate County or Burgh. In later correspondence the Board approved the Aberdeen Asylum for the Blind and the Aberdeen Town and County Association for Teaching the Blind at their Homes as eligible for the grants in question. The reason that mainly instigated the Board to make these grants in favour of agencies providing for the care and training of blind persons was due to the fact that the cost of maintenance and training had become so high that the great majority of voluntary institutions for the blind found it impossible to maintain their activities from voluntary sources. This was not the case with regard to the Aberdeen Asylum for the Blind, which had, so far, always been able to meet the demands made upon its resources. These grants in aid were standardised by the Scottish Board of Health's Circular, Blind Persons, No. I., 1921, in which the grants as available to the Aberdeen Asylum for the Blind were fixed at £20 per annum for each fully trained and employed blind worker in the Asylum; and in which £78, or up to three-quarters of the salaries, were paid for teachers engaged by the Aberdeen Town and County Association for Teaching the Blind at their Homes, as also £20 per 100 persons on the roll of that Association. More recent correspondence with the Board makes it obvious that the Board of Health do not intend to withdraw these grants in aid.

Restriction of Expenditure.—In the Scottish Board of Health's Circular, Public Health, No. I., 1921, however, headed "Restriction of Public Expenditure," it was laid down that "it is an instruction to all spending departments that, except with fresh Cabinet authority, schemes involving expenditure not yet in operation are to remain in abeyance." The circular goes on to state that the Government regard the necessity for a reduction in local expenditure as no less imperative than a reduction in expenditure by the Treasury, and they urge every Local Authority to secure that the principles adopted by His Majesty's Government should be regarded as applying to all branches of local administration. The circular further points out that with a service such as Public Health it is clear that no absolute or rigid rules as to expenditure are practicable, or would be wise even if they were practicable. It is stated also that the details of the various services should be carefully examined with a view to the elimination of unnecessary items of expenditure, and that it will often be found that the most effective way of doing this is to review the expenditure

and commitments of the spending committees of the council *seriatim*. The circular further states that "*private help and beneficence must be encouraged in every possible way to assist in the promotion of useful auxiliary services.*" Under the paragraph devoted to the "Welfare of the Blind," it is stated that, "in accordance with the terms of the Blind Persons Act, Local Authorities should continue their preparation of schemes for submission within the period laid down by the Statute. The Board will consider the whole situation, from the point of view of finance, when in presence of the schemes, but it should be clearly understood that the Board will find it very difficult to sanction expenditure by Local Authorities on new buildings." The circular states also that "*much may be done by the proper utilisation of existing facilities and buildings, and every inducement should be given to the continuance of voluntary effort.*"

Moreover, the following points were elucidated in correspondence with the Scottish Board of Health or otherwise:—

- (a) The Board are not at present prepared to consider as ranking for grant any expenditure by the Local Authority incurred in making provision for the maintenance of blind persons.
- (b) The Board are not inclined to favour any proposal on the part of the Local Authority to make provision for the necessitous blind persons where such provision has already been made by the Poor Law Authority.
- (c) The maintenance of insane blind persons remains in the hands of the Poor Law Authority.
- (d) The maintenance and technical education of necessitous blind children in the age-period 5-18 years remains in the hands of the Education Authority.

It will be seen, therefore, that in any scheme approved by Aberdeen Town Council to provide assistance in any manner for the promotion of the welfare of the blind, the expenditure will wholly fall on the local rates, and will receive no assistance from Treasury sources.

Modern Attitude regarding Training and Treatment of Blind Persons.—

It appears desirable here to make it clear to the Committee that during the present generation a much more comprehensive and useful attitude towards the world of the blind has been developed. In the past there was too much pity for their blindness and not enough sympathy for their human natures. Benevolently disposed people had talked to them of their affliction and the terrible difficulties under which they lived. As Sir Arthur Pearson puts it in his book, "Victory over Blindness"—"If you tell a man often enough that he is afflicted, he will become afflicted and will adopt the mental and physical attitude befitting that soul-destroying word." Sir Arthur determined that at least in his own dealings with the blind the word "pity" and the word "affliction" should not be used. He set himself to live as active and as independent a life as possible, and it became his ambition to do whatever he could to help blind people to escape from that passive half-life which seemed so commonly accepted as inevitable; and that as the blind man found himself increasingly self-reliant, taking something like his accustomed place in the world, astonishing himself even more than he astonished others, to

whom he seemed something of a miracle, the sense of happiness increased. Sir Arthur Pearson further states that "there is much we, the blind, cannot see; there is one thing we will not see if we can help it, and that is the gloomy side of our lives." This is the gospel of St. Dunstons. The main idea that animated the establishment of St. Dunstons for the blinded soldiers was that the sightless men, after being discharged from hospital, might come into the little world of St. Dunstons, where the things which blind men cannot do were forgotten, and where every one was concerned with what blind men can do. They would naturally need to be looked after and trained, and their future happiness, their success—everything, in short—would depend on the atmosphere with which they were surrounded. It was necessary that they should be led to look upon blindness not as an affliction, but as a handicap; not merely as a calamity, but as an opportunity.

This modern method, requiring at the first the maintenance of the blind, their education, and vocational training, while surrounded by an atmosphere of cheerfulness and energetic occupation, has long been illustrated in the Aberdeen Asylum for the Blind, wherein the more normal the blind inmates can make their lives, the happier they are found to be.

Present Position in Aberdeen as regards Blind Persons.

The number of blind persons ordinarily resident within the areas of certain Local Authorities, as at present given by the Central Register of the Blind, is as follows:—

Local Authority.	No. Registered.		Not Registered.		Total.
	M.	F.	M.	F.	
City of Aberdeen, .	116	115	<i>Nil.</i>	<i>Nil.</i>	231
Aberdeen County, .	77	74	„	„	151
Banff County, .	24	35	„	„	59
Kincardine County,	9	5	„	„	14
Moray County, .	12	21	„	„	33
Elgin Burgh, . .	4	8	„	„	12
Orkney County, .	34	34	„	„	68
Zetland County, .	33	67	„	„	100
Lerwick, . . .	6	14	„	„	20
	315	373	<i>Nil.</i>	<i>Nil.</i>	688

Total Number of Blind Persons in the City of Aberdeen.—Of the total 231 blind persons in Aberdeen, 17 are in receipt of relief from the Parish Council from time to time, 12 of whom are in receipt of old age pensions—the old age pension being made available to blind persons aged 50 years and upwards, in terms of the Blind Persons Act, 1920. The total number of persons in Aberdeen receiving old age pensions under the Act is 73. Under the old age pensions provision for blind persons aged 50 and upwards, the application for pension of an additional three blind persons was disallowed on account of their having means for subsistence outwith the limits of the Old Age Pensions Act. Provision is made for the remaining 158 blind persons in the following manner:—75 are blind workers within or on the roll of the Blind Asylum, some three of which receive a pension from the Asylum,

the others being occupied. It may be stated here that the earning ability of these 75 persons is by no means the whole criterion of their eligibility for admission to the Blind Asylum—blind persons of small earning capacity being admitted to the workshops as readily as those capable of earning a decent living, since the view is taken by the Directors of the Asylum that it is more useful and beneficial to the blind persons without measurable capacity for earning an adequate wage to be daily associated with the actual workers and with the energising atmosphere of the Asylum workshops rather than to be left to brood alone over their handicap.

There are, in addition, 142 blind persons on the roll of the Aberdeen Town and County Association for Teaching the Blind at their Homes, where, under such visitation and instruction as is available, the production of home workers is increasing, in terms of the 1923 report of the Association, and where literature for blind persons, and social services for them, together with relief for necessitous cases, are provided.

The remaining 14 blind persons not accounted for appear to be in such a financial position as to require no assistance from the two accredited agencies.

Wages of Blind Workers.—In the Aberdeen Asylum for the Blind, the wages paid to trained blind workers vary from 30/- to 49/- per week. It is to be noted that 11 men are on the highest wage, namely 49/-, the present wage of the firemen in the City Fever Hospital. In the Aberdeen Asylum for the Blind, women are paid 29/- per week.

In the Dundee Institution for the Blind, the wages for men who have completed their training are 40/- (set), and for women 25/- (set) per week.

In Edinburgh Royal Blind Asylum and School, the wages of the trained male workers range from 35/- to 46/- per week, the latter being the maximum; and the female workers are paid from 30/- to 35/6 per week.

In the Royal Glasgow Asylum for the Blind, the following scales for time-workers and piece-workers have been adopted:—

Year.	Time-Workers.			Piece-Workers.	
	Males. Per week.	Females. Per week.		Males. Per week.	
1st, . . .	8/6	8/6	...	8/6	
2nd, . . .	10/6	9/6	...	2d. per journeyman's 1/-	
3rd, . . .	12/6	10/6	...	4d.	„
4th, . . .	14/6	12/-	...	6d.	„
5th, . . .	16/6	14/-	...	8d.	„
6th, . . .	19/6	16/6	...	10d.	„
7th, . . .	36/-	33/-			
8th, . . .	50/-				

Overtime paid to time-workers at time and quarter rate after working 47 and 44 hours respectively.

An examination of these figures shows that the payment received by the blind workers in Aberdeen is equal to, and frequently in excess of, the payments received by workers in the other three centres in Scotland.

Industrial Blindness.—Rapid development has been made as a result of scientific investigations in recent years into the causes and prevention of industrial blindness, and it is mainly the duty of the Factory Inspector to see that the provision necessary for the prevention of industrial blindness is provided in all works, but the Medical Officer of Health works in close co-operation with the Scottish officials of the Home Office who are responsible for the carrying out of the Factory and Workshop Acts, with the result that provision for the prevention of industrial blindness is well maintained. It is interesting to note that the University Court of Aberdeen have recently appointed Dr. Middleton, Medical Inspector of Factories for Scotland, a lecturer on Factory Hygiene to students for the Diploma in Public Health at the University; and an arrangement is in process whereby Dr. W. Clark Souter, who has made a special study of the prevention of industrial blindness, may provide instruction to Public Health graduates also. By these means it is hoped that the medical men who will in future be employed in the Public Health service will have a much wider knowledge of the prevention of industrial blindness than has hitherto been made available.

Ophthalmia Neonatorum.—The main cause of blindness in children is due to ophthalmia neonatorum, the bulk of such cases being gonococcal infections contracted from their parents, provision for the treatment and cure of the parents being provided for under the Venereal Diseases Services of the Town Council. Cases of ophthalmia neonatorum, which were made compulsorily notifiable in Aberdeen under the Infectious Diseases (Notification) Act in 1913, were made compulsorily notifiable throughout Scotland by Public Health Regulations in 1918. These cases of ophthalmia neonatorum are entirely preventable, and properly come under the survey and control of the Mother and Child Welfare officials; and the Health Department keeps all such cases under review and arranges for expert ophthalmic services whenever required. In 1923, 63 cases of ophthalmia neonatorum were notified. In 1922, 47 cases of this disease were notified; in 1921, there were 100 cases; in 1920, 112; in 1919, 99 cases. In 1918, there were 39 cases; in 1917, 42; and in 1916, 40 cases. It follows, therefore, that in each of the three years 1919 to 1921 inclusive, the number of cases notified was greatly more than the number recorded in any year since notification was begun. The increase in cases of ophthalmia neonatorum was coincident with the demobilisation of the Army, and with an increase in venereal infections in general as recorded at the treatment centres. Every case of ophthalmia neonatorum is visited by a Health Visitor, and specialist medical services and, if need be, institutional treatment are immediately provided.

A measure of the result of the treatment of such cases in Aberdeen during the past eighteen years shows that only two cases of blindness in children aged 5 to 18 years are being dealt with by the Education Authority, who are responsible for the maintenance and training during the school age-period up to 18 years; and that of children under 5 years of age in the City, at present only two cases of blindness are in existence. It would appear, therefore, that under the increasingly effective work of the Maternity and Child Welfare service, such cases

of gonorrhœal ophthalmia resulting in blindness will practically disappear. The cost of treatment of cases under 5 years of age ranks for grant under the Mother and Child Welfare Scheme.

In addition to the Town Council's expenditure on ophthalmia neonatorum in children under 5 years of age, the Blind Persons Act makes the Town Council responsible for the maintenance of blind persons over 18 years of age while receiving technical training, but the provision of continued educational or technical training of such persons remains with the Education Authority. The maintenance of the blind persons over 18 years of age undergoing vocational training is provided for by the Town Council in every case following on a report made by the Medical Officer of Health on an inquiry into the whole of the circumstances associated with each application for maintenance.

Blind Persons Soliciting Alms, Street Trading, Providing Music, &c.—It can be stated with authority that all blind persons engaged in soliciting alms on the streets of Aberdeen, whatever the means employed, can be removed forthwith on instruction to the Aberdeen Chief Constable, and adequate provision made for their maintenance by means of one or other of the voluntary agencies making provision for the blind.

I am not at all convinced that this would be a proper procedure, since many persons, including some of the blind, resent organised charity, and prefer to receive charity by their own individual efforts.

Consideration of a Joint Scheme for Aberdeen and the North-Eastern Counties, as required under Section 2 of the Blind Persons Act, 1920.

That a joint scheme should be provided for Aberdeen City and the North-Eastern Counties has been pressed upon the Health Committee by repeated correspondence and interviews with the officials of the Scottish Board of Health. It has already been pointed out, however, that it was recommended by the Aberdeen Public Health Sub-Committee and representatives of other North-Eastern Local Authorities that such Authorities should give sanction for drafting such a combined scheme in 1921; but it later appeared undesirable to proceed with the drafting of a combined scheme since the Restriction of Public Expenditure Circular of the Board of Health indicated that all the capital and maintenance charges of such a scheme would have to be met locally without any provision from Imperial sources.

Whatever the limitations imposed upon Local Authorities by the failure of the Treasury to meet the 50 per cent. of capital and maintenance expenditure provided for in the circulars in connection with the Blind Persons Act, Aberdeen Town Council—being aware of the value of training blind persons to make them useful citizens engaged in productive work, instead of being units of society, morbid and burdensome, as they brood on their handicap—have at no time departed from the view that the cost of training of blind persons, especially of young adult blind persons, was an expenditure to be sanctioned in so far as it concerned the Local Authority, whether or not the Treasury contributed. It has been already shown that the Town Council have in every case accepted

responsibility for such expenditure. At present the Aberdeen Asylum for the Blind and the Aberdeen Town and County Association for Teaching the Blind at their Homes have adequate resources to meet the requirements of the blind in Aberdeen, and these two voluntary bodies have, as has already been made apparent, been carrying out their duties in connection with the care of the blind and training of the blind in as adequate a manner, or more adequately, than is accomplished elsewhere.

Present Procedure in Aberdeen and the North-Eastern Area.—The present procedure within Aberdeen and the adjacent Local Authorities is for the blind persons desiring training to make personal application to the Education Authority in the district in which they reside, and the Authority then makes application to the Blind Asylum for admission of the persons for training. So far as the Local Authorities are concerned, the Aberdeen Asylum for the Blind has always been able to meet these applications when the applicant was considered a suitable person for training. In the case of an Aberdeen applicant, the resources and income within his family are measured, and, on a report by the Medical Officer of Health, the Town Council give what is considered to be an adequate maintenance allowance to the Asylum for the Blind in respect of the individual concerned. On the other hand, the blind person accepted for training from a Local Authority other than the Town Council has to be provided with lodging within the City while undergoing training, and the maintenance allowance required for such a County case is accordingly considerably greater than that required by the Aberdeen applicant, who can reside with his family.

It has already been pointed out that blind children under 5 years of age are looked after by the Maternity and Child Welfare Department of the Town Council, and it is reasonable to consider whether the Maternity and Child Welfare Services of all the contributing authorities are on the same level, since in the event of provision for the prevention of ophthalmia neonatorum in one Local Authority's area being more highly developed than in that of another Local Authority, then it may be assumed that there will be a higher incidence of blindness in the Local Authority's area in which preventive services as regards ophthalmia neonatorum are less efficient.

It follows, therefore, that together with the increased expenditure involved on the maintenance of County cases and the increased number of children blinded by ophthalmia neonatorum in districts in which the prevention of ophthalmia neonatorum is not rigorously pursued, the financial arrangements in such a combined scheme would be difficult to adjust.

Under the present arrangement by which each area makes its own financial adjustments with, or voluntary contributions to, the Aberdeen Asylum for the Blind and the Aberdeen Town and County Association for Teaching the Blind at their Homes, no difficulty has been experienced in securing adequate services by Aberdeen or any of the North-Eastern Counties.

Combined Schemes in Operation.—It was found, however, on inquiry, that combined schemes have been approved of by the Board of Health for the three

other main centres of the country, namely, Glasgow, Edinburgh, and Dundee. Consideration of these schemes, however, makes it obvious that in Glasgow the scheme was made necessary by the entire failure of voluntary methods to maintain the Glasgow Blind Asylum; that in Edinburgh the scheme amounted to the Town Council making a contribution of £15 per employed blind person to the Royal Blind Asylum and School, Edinburgh, since they were unable from voluntary sources to continue their activities; and that in Dundee the practical expression of the scheme was a contribution of £20 per employed blind person per annum. Dundee in their scheme have moreover undertaken to provide additional institutional accommodation should it be required. As a matter of fact, the Glasgow scheme aims only at such provision as is already available in Aberdeen from voluntary sources, but in the failure of such voluntary contributions in Glasgow the expenditure incurred in providing for the maintenance of the blind had to be rated for locally. As regards Edinburgh and Dundee, it is equally apparent that the failure of voluntary contributions has necessitated these two cities making a yearly contribution per employed blind person.

In Aberdeen and the North-East, this situation has at no time arisen, the instincts of generosity and philanthropy in the population of this area having always more than met the existing requirements. The services for the training and care of the blind in Aberdeen are at as high a level or a higher level than in any of the other three areas; and it is an extraordinary comment on the alleged hard-heartedness, and an attribute to the hard-headedness of the north-eastern population of Scotland, that they have in a just cause voluntarily made full provision for the maintenance of all their blind persons—a voluntary provision that the rest of Scotland has failed lamentably to secure. In other words, and in accordance with the Scottish Board of Health's Public Health Circular, No. I., 1921, on Restriction of Public Expenditure, the other three main areas of Scotland have failed to secure the proper utilisation of existing facilities and buildings, and have failed to secure the necessary continuance of voluntary effort. Their so-called "schemes" are more or less paper schemes, placing on the rates at a time of acute financial stringency the care of the blind which has been secured more fully and favourably in Aberdeen by wholly voluntary effort. In addition, in some of such schemes the Local Authority has assumed responsibility for the erection or extension of buildings that may be required in future by the various blind asylums with reference to workshops, administrative offices, &c.

Outstanding Consideration.—The most crucial point that has arisen in this report regarding the welfare of the blind appears to me to be the consideration as to how far any scheme involving definite commitments by the Town Council would interfere with the voluntary effort that has so far made adequate provision for the blind, the stimulation of such voluntary contributions being urged upon us by the Board of Health and being essential to the community until such time as the industrial depression and excessive taxation have made rating for the blind a matter of future consideration.

I have been in communication with the Chairman of the Directors and the

Manager of the Aberdeen Asylum for the Blind, with the Secretary of the Aberdeen Town and County Association for Teaching the Blind at their Homes, and with the County Clerk of Aberdeenshire, and they are in general agreement with my considered view, that under the present circumstances each Local Authority should make individual arrangements for their blind persons until such time as the Treasury are in a financial position to meet 50 per cent. of the capital and maintenance expenditure originally intended by the Act.

Conclusion.

I believe that, should the Town Council in any scheme bind themselves to make an annual contribution, *per capita* or otherwise, to either of the voluntary associations for the blind, it would result in a diminution or even discontinuation of the bequests, donations, and subscriptions that are at present fully meeting the requirements of Aberdeen and the North-Eastern Counties; and that, should the Town Council undertake to meet any deficit in the working of the Blind Asylum and the Association for Teaching the Blind at their Homes, the legacies and generous contributions at present forthcoming from Aberdeen and the North-East would simultaneously decline or cease.

In Aberdeen and the North-Eastern Counties, impulses of generosity, philanthropy and helpfulness have stood the test of the manifold requirements that the proper care of the blind demands—a condition of affairs that prevails in no other part of Scotland—and I am convinced that if these facts are brought to the notice of the Board of Health they will agree with the opinion here expressed—that the present voluntary system adequately meeting the needs of blind persons in the North-Eastern Area, should meantime be maintained, and that the time for consideration of a joint scheme for this area should be postponed until such time as the voluntary system fails in its adequacy, or until such time as the Scottish Board of Health are in a position to meet their financial provisions intensioned under the Blind Persons Act and relative circulars. A combined scheme at the present time would provide, at most, an expenditure by the Town Council which it is already meeting, and might bind the Council to a future expenditure which at present cannot properly be estimated or defined.

In terms of the Council Minutes, of 7th April, 1924, it was resolved that, before proceeding further in the matter, and in view of the circular, dated 22nd February, received from the Board withdrawing the restrictions of expenditure on grant-aided public health services, the Medical Officer of Health should be instructed to report on all the special health services of the City, with respect to the urgency of their varying needs and necessity for their development.

During the two years under review, a total of 9 persons applied for and received from the Town Council assistance towards their maintenance during the period of technical training.

MOTHER AND CHILD WELFARE SERVICES.

The arrangements under the original Scheme, approved by the Board of Health in 1918, and detailed in the Report for the years 1916-1921, continue in force.

EXTENSIONS OF SCHEME.

Centres.—In 1922, owing to the large numbers attending Charlotte Street Centre, it was found necessary to have two weekly meetings at this Centre. The Voluntary Workers provided a separate committee to supervise the second meeting, which is now held on Thursday afternoons, the original meeting being continued on Tuesdays.

In 1923, an additional Centre under the Maternity Service and Child Welfare Scheme was initiated by the Aberdeen Mother and Child Welfare Voluntary Association, and the Centre was opened in Ferryhill United Free Mission Hall on 18th October. It was considered that the provision of a Centre in this part of the town would meet the requirements of a district of the town that had not previously been receiving mother and child welfare services. The Mother and Child Welfare Medical Officer exercises general supervision over the Centre and one of the Health Visitors is made available for the meetings, but the medical services are provided by a medical practitioner in the City, who is engaged by the Mother and Child Welfare Voluntary Association. The accommodation at the Ferryhill Centre consists of a hall, toddlers' room, room for clinic, small kitchen, and lavatory. The Ferryhill Centre is supported by voluntary means, and the Town Council has no financial responsibility. In terms of the Board of Health's letter of 9th November 1923, the Board have formally sanctioned the establishment of this additional centre under the Maternity Service and Child Welfare Scheme.

Co-operation with Education Authority.—(a) *Dental Clinic.*—With reference to the 1921 agreement between the Town Council and the Education Authority of Aberdeen as to dental treatment for mothers and children, the Provisional Agreement, as set forth in the Medical Officer's report for 1916-1921, states that the Town Council are to refund to the Education Authority such proportion of the total expenditure as the number of persons treated in connection with the Maternity Service and Child Welfare Scheme of the Town Council bears to the total number of persons treated, these terms to be open to re-adjustment after 15th May, 1922, by which date experience will have been obtained of the relative requirements of the different groups of patients. Having before them a statement representing the actual cost per individual, based on the cost of the clinic per hour, the Town Council in 1922 agreed to a flat rate of 10s. per adult and 5s. per child treated under the Scheme. The first cases were sent to the clinic in February, 1922. During 1922, 40 mothers and 30 children received treatment, and during 1923 the numbers were 71 and 57 respectively.

(b) *Ophthalmic Clinic.*—In May, 1923, the Board of Health gave formal approval to the arrangement between the Town Council and the Education

Authority, whereby suitable cases of eye ailments in children under five years of age receive treatment at the special ophthalmic clinic of the Education Authority, this arrangement being confined to the treatment of cases suffering from refractive defects, &c., where there is a risk of permanent damage of visual function failing immediate treatment. A flat rate of 5s. per case was agreed upon between the Education Authority and the Town Council.

HEALTH VISITORS' CONFERENCE.

The Third Annual Conference of the Scottish National Association of Health Visitors, Women Sanitary Inspectors and School Nurses was held in Aberdeen on Saturday, 20th May, 1922, and was attended by 150 delegates, and met in the University Buildings. The Principal of the University welcomed the delegates to the City, the congress was initiated by the President, Lady Leslie Mackenzie, and papers were contributed by the Medical Officer of Health, the Mother and Child Welfare Officer, the Tuberculosis Medical Officer, and the Director of the Rowett Institute for Animal Nutrition. Subsequently, the delegates visited the Castlegate Welfare Centre, Charlotte Street Welfare Centre and Day Nursery, Burnside Home, the Tuberculosis Institute, and Ward for Ailing Babies, City Hospital. An exhibition was provided in the Pathology Department of the University.

STATISTICS.

The following statistics relating to Mother and Child Welfare, in addition to Tables II., IV., V., and VI., are submitted:—

TABLE XX.—ABERDEEN.—NATURE OF PROFESSIONAL ATTENDANCE AT BIRTH.

Year.	* Total Registered Births.	Cases visited by Health Visitors.		Professional Attendance at Birth in Visited Cases (with percentage for each Group in relation to visited cases).							
		Number.	Percent- age of Reg. Births.	Private Medical Practitioner.		Midwife.		Maternity Hospital.			
								Outdoor.		Indoor.	
				No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.
1923	3852	3175	82	1807	56·9	839	26·4	125	3·9	404	12·7
1922	4038	3268	81	1993	60·9	776	23·7	144	4·4	355	10·9
1921	4326	3485	81	2143	61·5	787	22·6	128	3·7	427	12·3
1920	5010	3787	76	2370	62·6	873	23·1	142	3·7	402	10·6
1919	3458	2461	71	1366	55·5	799	32·5	70	2·8	226	9·2
1918	2794	1977	71	1147	58·0	593	30·0	85	4·3	152	7·7
1917	2946	2127	72	1256	59·1	656	30·8	69	3·2	146	6·9
Aver. 1917-21 }	3707	2767	74	1656	59·3	742	27·8	99	3·5	271	9·3

* Uncorrected for transfers.

TABLE XXI.—ABERDEEN.—FEEDING OF VISITED INFANTS IN RELATION TO SIZE OF HOUSE.

YEAR.	TOTAL REGISTERED BIRTHS.	ALL HOUSES.		HOUSES OF							
		No. of Visited Infants.	Percentage Breast-fed (whole or part).	1 ROOM.		2 ROOMS.		3 ROOMS.		4 ROOMS.	
				No. of Visited Infants.	Percentage Breast-fed (whole or part).	No. of Visited Infants.	Percentage Breast-fed (whole or part).	No. of Visited Infants.	Percentage Breast-fed (whole or part).	No. of Visited Infants.	Percentage Breast-fed (whole or part).
1923	3852	3177	89	916	92	1525	89	503	83	233	87
1922	4038	3268	88	801	92	1635	88	580	84	252	82
1921	4326	3485	87	830	92	1693	87	649	83	313	86
1920	5010	3787	87	823	91	1866	87	793	84	305	82
1919	3458	2461	86	461	87	1236	89	561	81	203	78
1918	2794	1977	82	232	93	1047	84	538	80	160	69
1917	2946	2127	81	301	89	1102	83	548	74	176	70
Aver. 1917-21	3707	2767	85	529	90	1389	86	618	80	231	77

Centre Attendances.—During 1922, the total attendances at the Welfare Centres numbered 27,420 (13,107 by mothers and 14,313 by children); and during 1923 there were 34,084 attendances (16,011 by mothers and 18,073 by children).

Clinic Attendances.—For 1922, there was a total of 5,464 clinic attendances (849 by mothers and 4,615 by children); and during 1923, there were 6,143 attendances (1,043 by mothers and 5,100 by children).

Food Supply.—During 1922, food, chiefly milk, was supplied gratuitously to a daily average of 97 mothers (nursing or expectant) and 137 babies and children under five years, as also at part cost to an average of 11 such children and mothers. In 1923, a daily average of 55 mothers and 94 children received supplies gratuitously; and a daily average of 9 such children and mothers received supplies at part cost. The influenza epidemic in 1922 was responsible for the larger number of mothers and children receiving milk during that year, as compared with 1923.

Ante-Natal Annexe of Maternity Hospital.—During 1922, 115 City cases received in-patient treatment, and 365 expectant mothers were seen at the out-patient department, the total number of attendances being 718. During 1923, 125 cases received in-patient treatment, and 431 expectant mothers made a total of 925 attendances at the out-patient department.

Burnside Home.—During 1922, 70 mothers and 114 babies were admitted; and for 1923 the admissions were 99 and 115 respectively. The average daily numbers of mothers and babies in residence during 1922 were 8 and 20 respectively, and during 1923, 8 and 17 respectively.

Loch Street Home.—During 1922, 36 mothers and 27 babies were admitted; and for 1923 these numbers were 42 and 29 respectively. The average daily numbers of mothers and babies in residence during 1922 were 8 and 7 respectively, and during 1923, 4 and 4 respectively.

Day Nursery (Charlotte Street).—During 1922, the fresh admissions numbered 61, and the average daily number of inmates was 30; and during 1923 the fresh admissions numbered 91, and the average daily number of inmates was 33.

Ailing Infant Ward (City Hospital).—The number of admissions was 192 for 1922, and 167 for 1923. The average daily number of inmates during both the years under review was 19.

DEPARTMENTAL COMMITTEE ON PUERPERAL MORBIDITY AND MORTALITY.

In 1923, a Departmental Committee was appointed by the Board of Health to inquire into the incidence of puerperal morbidity and mortality, and the following is a précis of the evidence submitted to the Committee by Dr. James A. Stephen, Medical Officer for Mother and Child Welfare:—

Considerable knowledge of the conditions associated with maternal deaths in relation to pregnancy and parturition has been available in Aberdeen since the beginning of 1917, when a special system of inquiry was instituted by the Medical Officer of Health.

Previous to 1917, and since the introduction of the compulsory notification of puerperal fever as an infectious disease under the Infectious Diseases Act of 1889, all such cases have been visited by the Inspector dealing with infectious diseases in general, and certain information obtained on the ordinary card for infectious disease in regard to age of patient, size of house, and number of inmates, as also any known source of infection—these being the usual inquiries for all cases of notifiable infectious diseases.

In order to obtain fuller information regarding not only these septic puerperal cases, but of all cases of puerperal mortality, the additional system of inquiries of 1917 was begun.

Under this system, the local registrars of deaths, who had been accustomed, by arrangement with the Medical Officer of Health, to notify daily to the Health Department all deaths from an infectious disease, were asked to include in their notification every "death of a woman dying (1) within four weeks after child-birth, or (2) during pregnancy, when pregnancy is stated." It was understood that any case of death certified as due to puerperal conditions, although the death occurred beyond the four weeks, was to be included.

It was also definitely understood in the written and other communications with the registrars that all deaths were to be included which happened within the four weeks, although no reference to child-birth had been made in the death certificate, the registrar depending, for his information as to the child-birth, on the previous registration of the birth.

When the information regarding the association of the death with child-birth did not appear in the death certificate and had been overlooked by the registrar, it was occasionally known to a Health Visitor through her district visitations.

On the receipt of the intimation of every such death associated with maternity, steps are taken, with the assistance of the Health Visitor of the district in which the death occurred, to obtain information, so far as may be reasonably obtainable, regarding the home conditions, the pre-natal health of the deceased and any pre-natal professional care, the main facts of the child-birth, the nature of the professional attendance, whether a doctor or midwife present, and the course of the condition of the woman after child-birth, as also some information as to her previous maternity history. In most cases, the attending doctor, and in all cases the

midwife, is seen or communicated with. Where no such communication is made, it is only because of the main facts of the case being quite apparent and uncomplicated.

In interviews or communications with the medical attendant, in cases of doubtful interpretation, the fullest respect is given to the opinion of the medical attendant. Any questions to the medical attendant, as, say, to his precautions against septic infection, are always general, and are not made specifically in regard to the case in question, unless he himself offers the information. The interview has always been entirely friendly and agreeable.

There is no notion of pillorying the medical attendant. It is simply a question of the Health Department obtaining information regarding the circumstances of an exceedingly important section of deaths in the hope eventually of making use of the information for the lessening of such deaths. Anyhow, the mere discussion of the circumstances with the medical attendant is likely to be beneficial. The Medical Officer for Mother and Child Welfare being in touch with all such cases in the City, is able sometimes to give useful information.

In every case in which septic infection has occurred, or the possibility of it is admitted by the medical attendant, disinfection is carried out with the approval of the medical attendant. The disinfection in all cases of sepsis or suspected sepsis extends to any nurse that may have been in attendance.

It is, of course, possible to assume a more directly educative attitude towards the midwife; and it is done.

The information submitted is necessarily in the main from the side of the Health Officer, and is lacking in much that could be said more competently from the clinical side.

Although the total number of puerperal deaths is small, they represent all the deaths connected with 23,027 births in the six years, 1917-1922, within the City of Aberdeen, after elimination of the relatively few confinements—chiefly in the Aberdeen Maternity Hospital—of women coming specially from outside the City, and after including the confinements—almost wholly in the Aberdeen Parish Council Hospital, outside the City boundary—of women outside the City, but ordinarily resident in the City.

Results of Inquiries.

During the six years (1917-1922) which the evidence covers, there were 154 puerperal deaths in which reference was made to pregnancy or parturition in the death certificate presented to the registrar; and, in addition, there were 22 deaths with a puerperal association, information as to which was obtained in the manner already referred to.

In the following statement, these 22 deaths are dealt with by themselves, and are grouped and analysed in a single table (Table 1) and are referred to as Group A.

The main group of 154 deaths constitute Group B, and practically all the information given in Table 2 and subsequent tables is confined to this group.

Deaths associated with Pregnancy or Child-birth in which death is known to have occurred during Pregnancy or at Child-birth or within Four Weeks after Child-birth, but in the death certificate for which reference to Pregnancy or Child-birth did not appear.

GROUP A.

(Table 1.)

There were 22 such deaths, as already stated, within the six years (1917-1922), and these represent 14 to 15 per cent. more deaths than constitute Group B.

These 22 deaths are arranged, according to age of woman and cause of death, in the Table.

Two of the deaths occurred before confinement, and both patients died from pneumonia, accompanying, in one case, influenza. A third case, where abortion occurred, and death was due to acute pneumonia and bronchitis, beginning before the abortion, may be added to the pregnancy group, raising it to 3.

Of the remaining 19 deaths, 11 were of women in whom the certified cause of death began before delivery.

In these 11 cases the interval between delivery and death ran from 9½ hours in one case (bronchitis and myocarditis), one day in another case (influenzal pneumonia), three days in a

third case (pulmonary tuberculosis), to twenty days in a case of Bright's disease, and twenty-five days in a case of otitis media. In one case at eighteen days, death was due to endocarditis after delivery, with a prolonged history of rheumatism and heart affection, while in another at 11 days, death was due to heart failure following on heart symptoms during pregnancy. In the remaining four cases, death was due to pneumonia or bronchitis.

As to the 8 deaths in which the illness had not appeared until the delivery, death occurred after an interval from delivery, varying from 5 days (pneumonia) to 24 days (meningitis). One was due to septicæmia following (10 days) a still-birth, but with a previous and still existing bacilluria. There were 3 cases of thrombosis (8, 14, and 15 days), one of asthenia (14 days), and one of acute yellow atrophy (7 days).

It can scarcely be doubted that in many of the deaths within Group A pregnancy or delivery was a contributory cause of the death, and probably, in some, the preponderating cause.

It would appear, therefore, to be desirable that in all such cases the Registrar-General should arrange that the fact of the pregnancy (when known) or of the child-birth should find mention in the death certificate, if for no other reason than to give a more complete picture of the circumstances attending deaths during pregnancy or the puerperium.

It may be added that, of the whole 22 cases, almost three-fourths of them appear from the available information not to have been laid up by illness before delivery began.

Puerperal Mortality in Relation to Age.

GROUP B.

(Table 2.)

Age.—It is easy to ascertain from the death certificates the age of the mother at death; but as the age of the living mother at the registration of a birth is not required by the registrars, it is not possible, without a special inquiry into the ages of all the mothers by visitation of their homes, to obtain the number of births in relation to each age group. Without such information, there is no basis on which to calculate the proportion of maternal or puerperal deaths in relation to the total births at a given age.

Such an inquiry as to the age of the mother was, however, made for Aberdeen by the Medical Officer of Health in the year 1911, for the purposes of a special report on Births and Fertility. A special census for last year might have been made, but there is reason to believe that in normal conditions the proportion of births at the various ages does not vary much from year to year in any district. As already remarked, the years covered in the present inquiry include years much influenced by war and post-war conditions, which may have affected the proportion of births at different ages. The interference, to judge from rough estimates made from the information obtained by the Health Visitors in their visits to a large part of the mothers, seems to make it possible, however, to place some reliance on the 1911 proportions.

Accordingly, the death-rates for the various age-groups of mothers have been calculated on populations derived from an adaptation of the figures for 1911.

The main points brought out in the Table, in respect of mortality in relation to age, are that the death-rate per 1,000 births for the successive quinquennial age-periods from 15 to 49 years is lowest at the period 25-29, with 4·7 per 1,000 births, and is nearly as low at the immediately adjacent periods, 20-24 and 30-34, with 5·9 and 5·3 respectively. At the age-periods below or above these—that is, below 20 and above 34—the rate is practically doubled. The safest stretch of ages for mothers is, therefore, from about, say, 19 or 20 to about 35.

No doubt the higher mortality among first confinements is a substantial factor in heightening the death-rate at ages under 20.

The Table further shows that the high death-rate at ages under 20 is mainly due to sepsis and to albuminuria and convulsions; while at the late age-periods it is also in large measure affected by sepsis, and in considerable measure by hæmorrhage.

The death-rate from hæmorrhage increases steadily with the age from 25 onwards.

A further discussion of the causes, apart from age, will be undertaken in relation to later headings in the questionnaire submitted by the Committee.

Puerperal Mortality in Relation to Illegitimacy.

GROUP B.

(Table 3.)

As is well known, illegitimacy is higher relatively in the north-east and south-west than elsewhere in Scotland.

In Aberdeen, roughly about one-tenth of all the births during the 1917-1922 period were births of illegitimate children.

It is also well known that the death-rate among illegitimate infants is usually more than twice as high as that among legitimate infants.

Information as to the comparative death-rate in the two groups of mothers is not so readily available.

In Aberdeen, as the table shows, the death-rate among the mothers of illegitimate children for 1917-1922 was also, like that for their infants, considerably greater—fully one and a half times as great—as among the other mothers, viz., 10·9 per 1,000 births, as against 6·2.

Further, the death-rate from sepsis is three times as high in the former group as in the latter—the difference being still greater for non-septic abortions.

The difference for sepsis in abortion cases is even more pronounced.

Deaths from albuminuria and convulsions are also distinctly higher, but the reverse is true with regard to hæmorrhage.

Some part of the difference must be attributed to the much higher proportion of first pregnancies among the illegitimate cases than among the legitimate, and also, but to a lesser extent, to the larger proportion of women of ages under 20.

There is obviously room for a considerable reduction of the mortality among the mothers of illegitimates; and the excessive death-rate among them and their infants is deserving of careful consideration, in the interests of the nation, at a period when the birth-rate, owing to methods of birth control, is steadily declining.

In Aberdeen, the Maternity Hospital never refuses admission to an unmarried woman in her first pregnancy, but it usually refers cases of later pregnancies to the Parish Council Hospital. One of the two Homes maintained by the Town Council for expectant mothers and mothers freshly confined admits, for a small weekly payment, such single women of later pregnancies.

Occupation and Time of Cessation of Work before Confinement.

The conclusion to be drawn from analysis of the record cards with regard to these points is that the nature of the occupation and the continuance of that occupation up to the time of labour had no pronounced effect on puerperal mortality.

Of the 154 women, 121 were engaged in household duties, 7 were fish-workers, 7 mill-workers, 6 factory-workers, and the others were engaged in light employment.

Sufficiency of Means.

Information under this heading is somewhat vague, depending on the standard followed by the investigator.

In 4 cases only out of the 154 deaths were the means stated to be bad, and in two only of these was the food supply somewhat meagre. Although unemployment has been largely prevalent during the last two of the years under review, sufficient food was being provided through the Unemployment Bureau or Parish Authorities. Several pregnant mothers were also supplied with food by the Maternity and Child Welfare Service of the Health Department.

On the whole, it can scarcely be said that insufficient means measurably increased the maternity mortality.

*Habits of Woman and Husband or Father of Child.**(e.g., Alcoholism.)*

In five cases, the habits of the mother were stated to have been bad. In two of these, the woman was very dirty. In these two cases, death was due to puerperal sepsis. In a third, the woman was stated to have been alcoholic, and she died from post-partum hæmorrhage.

The Health Visitors made a special note of evidence of definite intemperance among mothers, and found such evidence in 54 among 5,042 mothers, or a proportion of 1 in 93, as against an experience among women who died from puerperal conditions of 1 in 154; so that alcoholism cannot be said to have played any important part as a cause of death.

The information as to the habits of the husband or father of the child was naturally difficult to elicit.

Cleanness of House.

GROUP B.

(Table 4.)

With reference to the two houses recorded under sepsis as bad, it may be mentioned that in a third case the house was clean, but the personal clothing of the patient was dirty. In this case, pregnancy had been concealed up to the last moment, and no preparations for the confinement were made. At the bottom of the Table is given the condition of all the houses visited by the Health Visitors in their ordinary rounds with regard to cleanliness.

It shows that the proportion of dirty (bad) houses associated with sepsis was distinctly higher than the proportion of such houses met with by the Health Visitors in their collective visitations.

Puerperal Mortality and Size of House.

GROUP B.

(Table 5.)

Here, as already indicated for other purposes, there is some difficulty in obtaining a basis for the calculation of the deaths in the different sized houses in proportion to the number of births by living mothers, without a census of the whole births in such houses—the size of house being, of course, not given in either the death or the birth registers. The special inquiry as to deaths, by the Health Department, supplies this for the deaths only, but unless every house with a birth is visited, similar information is not available for the births.

Although an examination of the Census reports for 1911 and 1921 shows, in view of the possible effects of the War, remarkably little difference in the proportions of the population occupying different sized houses, our general experience in Aberdeen, in connection with the domiciliary visitations of the Health Visitors, suggests that this is not quite true in regard to the distribution of births. Otherwise advantage could have been taken, for present purposes, of the information obtainable from special censuses of all the births in respect to housing, &c., made in 1907 and in 1908.

As no such complete census of births was made for any year in the period 1917 to 1922, and, even if made, would scarcely have been reliable unless made for every year, owing to the varying conditions produced by the War, we have for present purposes had recourse to the information obtainable from the ordinary record cards kept by the Health Visitors of the Health Department, who in the six years under review visited the houses in upwards of 17,000 of the total 23,027 births, omitting, both as a birth and death, any case visited exclusively for inquiries into the circumstances of a maternal death, as may have been required for the special puerperal mortality inquiry, and not as one of the maternal or infant cases visited in the routine of their ordinary duties.

In this way, although not all the births and maternal deaths are brought into view, reliable proportions of deaths to births are got for each group of the different sized houses visited. It is more or less a sampling method, but the samples are on a large scale, embracing almost all the births in one-roomed houses, a high proportion of those in two- and three-roomed houses, and a considerably less proportion in the larger houses—the number of cases visited for the four sets of houses being 3,448, 8,579, 3,669, and 1,409 respectively.

The chief objection to this basis is that the cases visited in the larger houses are more or less selected—the grounds, however, being very various—and, accordingly, do not offer a quite fair sample of all families occupying such houses.

For the 17,105 births thus visited, and size of house obtained, the puerperal death-rate per 1,000 births was, for houses of—

	1 Room.	2 Rooms.	3 Rooms.	4 or more Rooms.
All Causes,	6.4	6.6	8.2	8.3
Sepsis,	1.7	1.6	0.8	2.1
Albuminuria and Convulsions,	0.6	1.3	1.6	0.0
Hæmorrhage,	0.9	0.6	1.4	2.8

Cases dying in an institution are debited to their dwellings. No doubt the rates thus brought out for houses of four rooms and upwards are too high, although it has to be kept in mind that in the larger houses many of the women, owing to the progressive social rise from smaller to larger houses, have reached the larger house in the later stages of the child-bearing period, with its higher mortality. The high death-rate from hæmorrhage is indicative of this.

It would seem possible to arrive at the conclusion that the size of house does not materially affect the puerperal mortality rate.

Trials made with other bases, such as the population in different houses, which is known from the Census of the Registrar-General, or with estimates obtainable from the special inquiries in 1907 and 1908, tend to emphasise, and not to lessen, the exoneration of the small house.

Table 5, relating to size of house as submitted, gives a fuller analysis of the causes of death, and deals with *every* puerperal death in the different sized houses, and not merely the deaths in birth cases ordinarily visited by the Health Visitors, and has its own value, apart from the estimates just given. It is not based on any assumptions, however justified.

Puerperal Mortality and Crowdedness.

GROUP B.

(Table 6.)

The observations made under Size of House in regard to the basis on which to determine the comparative mortality applies equally to crowdedness. It is proper to keep in mind that the smallest houses are not necessarily the most crowded. A large proportion of them have only one or two occupants. On the other hand, many of the three-and four-roomed houses contain large families, sometimes augmented by lodgers, and since the War, owing to scarcity of houses, by a married son or daughter with spouse and possible child.

The Table submitted makes no assumptions, and gives the number of deaths from different causes as met with in houses of different degrees of crowdedness, as ascertained by direct inquiry into the number of persons per room in each case.

It shows that the percentage of septic deaths to all the deaths in the three different groups of houses with different degrees of crowdedness is lowest in the houses of least crowdedness, *i.e.*, with two persons or under per room; but is about equally high for the two higher degrees of crowdedness given in the Table. The proportion, however, of deaths from albuminuria and convulsions is definitely highest in the least crowded houses. In the most crowded houses there were no such deaths during the period to which the inquiry relates.

Working on the basis followed in the comments made on the relation of puerperal mortality to size of house, by taking the deaths with the births among the cases visited by the Health Visitors, the following death-rates per 1,000 births for houses with different degrees of crowdedness are obtained. These rates are open to the same reservations as were indicated in connection with size of house:—

<i>Puerperal Deaths per 1,000 Births—</i>	HOUSES WITH PERSONS PER ROOM.		
	2 or under.	3 and above 2.	Above 3.
All Causes,	8.1	6.4	7.5
Sepsis,	1.9	0.9	2.0
Albuminuria, Convulsions,	1.4	1.2	—
Hæmorrhage,	1.1	1.2	0.7

From these figures, if in any substantial degree reliable in their application to the whole births, it appears as if crowdedness was not, on the average, an important factor in puerperal mortality.

Here, as with size of room, the least reliable figures relate to the least crowded houses, as the larger houses, with the least crowdedness, have a much smaller proportion of visited cases than the more crowded houses.

Estimates have also been made on the basis of population living in these different degrees of crowdedness, as ascertained from the Census of the Registrar-General, as also the special censuses of all births in the City in 1907 and 1908.

On a population basis, and taking all the registered puerperal deaths, the corresponding rates to these just given, used in the same order, are—

All Deaths,	1.4	1.9	1.4
Sepsis,	0.2	0.5	0.4

On the basis of the special birth censuses, the figures are not less favourable to the more crowded houses than these for the Health Visitors' cases.

Puerperal Mortality and Congested Areas.

There is no evidence to show that congested areas have any definitely larger puerperal mortality in Aberdeen more than may be inferred from the Tables relating to Size of House, Crowding of Occupants, and Want of Cleanliness.

The more congested areas in Aberdeen have been in large part dealt with in the last thirty or forty years, although its housing conditions, as in other large towns, await further improvement.

Health of Woman before Pregnancy.

GROUP B.

(Table 7.)

There is not sufficient information available regarding the health of mothers generally before pregnancy, apart from those who died and are included in this Table, to give a proper basis for comparison, but from ordinary observation of the health of women generally, it is obvious from the Table that the proportion of the deceased mothers whose general health was unsatisfactory is much above the proportion in mothers generally. Some interest attaches to the analysis of the causes of death in the two groups.

Health of Woman during Pregnancy.

GROUP B.

(Table 8.)

The Table shows that in four-fifths of all the cases of births (nearly 3,000 a year) visited by the Health Visitors the mothers had satisfactory health during pregnancy, and that in the remainder it was unsatisfactory.

It also shows that the death-rate among the latter was four to five times higher than among women of good health. The proportions for the different causes of death are roughly similar for both groups.

Duration of Pregnancy in Relation to Cause of Death.

GROUP B.

(Table 9.)

Deaths resulting from a pregnancy of less than seven months' duration and classified under hæmorrhage, might have been classified otherwise—*e.g.*, under abortion or embolism, &c.—but the certified cause of death has been taken. It is important to note that only 51 per cent. of the women whose deaths are under review reached the normal period of gestation.

Abortion is variously stated to take place in from 1 in 5 to 1 in 7 or 8 pregnancies. The Table shows that abortion was the cause of death in 24 out of the 154 deaths, or in the proportion of 1 in 192 of the total births.

It may be stated here that with proper examination and appropriate treatment the pregnancy which was allowed to go beyond the physiological time in four cases, might have been terminated at an earlier and safer period.

Comparative Danger of First and Subsequent Pregnancies.

GROUP B.

(Table 10.)

The Table gives, in regard to the 154 deaths investigated in 1917-1922, the order of confinement or pregnancy for each case. It also gives, based on the information obtained as to upwards of 17,000 births visited by the Health Visitors during the same period, the approximate death-rate for each group of women according to the order of their confinement.

The Table shows, in regard to deaths from all causes, that the lowest fatality attends the second confinement, and that it is less than one-half of that for the first confinement; and that the fatality, with one or two exceptions, depending probably on the statistical error arising from the treatment of small numbers, gradually increases with the successive confinements after the second.

The Table further indicates a distinctly high death-rate from sepsis in first confinements, relatively to other confinements, except the very latest, when certain rates are obviously vitiated by the smallness of the numbers dealt with.

Albuminuria and convulsions, as a cause of death, are markedly predominant in connection with first confinements. On the other hand, some causes of death, such as hæmorrhage, are on the whole more evident in the later pregnancies.

It is proper to add that there is, of course, a larger proportion of illegitimacy in the first than in other births, which serves to increase the mortality because of the smaller attention received by such cases, due mainly to the patient herself or her relatives. The danger of first confinements is already well known, and the Aberdeen Table only assists in confirming it.

Place of Confinement, or Death (if no Confinement).

GROUP B.

(Table 11.)

Table 11 is interesting when taken in conjunction with housing and personal conditions of the women whose deaths are under consideration. The death-rate per 1,000 births in the homes of the women is 5, as against a higher rate in both private nursing home or public institution, but it has to be remembered that a considerable proportion of the serious and more difficult cases would be sent to these institutions. This accounts, for example, for the high death-rate in public institutions, as the cases which proved fatal were to a large extent sent to the institution after serious symptoms had supervened. The same remarks apply to the other causes, including sepsis, as patients in poor circumstances with unsatisfactory environment are more likely to be sent to an institution, especially if any abnormality be found.

Nature of Skilled Attendance.

GROUP B.

(Table 12.)

It is necessary to explain the construction of Table 12. All cases sent to an institution, public or private, have been referred back to the doctor, midwife, or district practice from whom they were admitted, and are shown in the Table in bracketed figures. These include the more difficult cases, and, in order to maintain the balance fairly, this procedure has been adopted. The total figure for each type of practice is obtained by adding the figure in brackets to the unbracketed figure.

The Table shows the comparative death-rates for each type of practice, from all causes, and for the separate causes of death.

Practice of Individual Midwives

GROUP B.

(Tables 13 and 14.)

The information regarding the practice of midwives in Aberdeen is of considerable interest. As already stated, the results are creditable to the midwives, the more that only 5 out of the 16 midwives in practice in Aberdeen are registered by examination.

The largest individual practices are held by the midwives uncertified by examination, which is, of course, mainly due to the fact that the compulsory registration of midwives was only recently introduced.

During the six years 1917-1922, 4,611 cases—or about one-fifth—of the total 23,027 confinements in the City during these years were attended by midwives, with 13 deaths, giving the relatively low mortality of 2·8 per 1,000 births, including all cases of difficulty in which medical assistance was obtained.

Of the 4,611 cases, 543 were attended by examination-certified midwives, of whom there are 5. The number of deaths among the 543 cases was only 1, or about 2 per 1,000. The single death happened to be due to sepsis. The proportion of deaths among the much more numerous cases (4,068) attended by the other and older midwives was somewhat higher—2·9 per 1,000.

The examination-certified midwives, on an average, ask medical assistance in a slightly larger proportion of their cases than do the other midwives—about 1 in 7½ for the former, and 1 in slightly above 9 for the latter.

All the midwives, except two of the certified midwives, are married, or are widows. Many of them have had families of their own, and their personal experience of child-bearing may be a recommendation of their services to the women who seek their attendance.

The midwife with the largest practice is married, her husband being a labourer, and has had two children.

One or two of the midwives are rather old to be able to carry on their practice satisfactorily, and it would be an advantage if some provision were made for a small pension for superannuated midwives when they reach a fixed age.

There is much to be said for the maintenance of a good, adequately qualified, and intelligent midwife service under medical supervision and with readily available personal medical advice and assistance. Medical practitioners, on the whole, favour such a service, as they recognise the difficulty they often experience in finding the necessary time in a busy general medical practice to devote to a tedious case of labour.

Evidence of Unskilled Attendance at Delivery, as by Relative or Neighbour.

GROUP B.

There is practically no unskilled attendance on cases of confinement in Aberdeen, if the occasional help of a neighbour, before the midwife or doctor arrives, is excluded. In such cases, no interference with the delivery is ventured upon.

Adequate Facilities for Skilled Attendance, or Institutional Treatment.

GROUP B.

Skilled attendance by a doctor or midwife on confinements among women of the working classes is now very largely provided in Aberdeen, as elsewhere, through the Maternity Benefit under the Insurance Act. A large proportion of the women who seek admission to the Maternity Hospital are entitled to Maternity Benefit. Those who remain at home are attended either by a midwife or by a doctor. The Maternity Benefit allowance, which was increased from 30s. to £2 in July, 1920, may have tended to increase slightly the proportion of such women seeking medical attendance in place of midwife attendance, although the movement in this direction may be largely due to the fuller availability of medical attendance since the end of the War. There is no difficulty in obtaining skilled attendance, either medical or midwife.

Adequate Facilities for Institutional Treatment.—The Aberdeen Maternity Hospital has provision for 20 in-patients, besides 8 beds in the Ante-Natal Annexe, but the space and general accommodation is much too limited. At least 10 more beds are needed, including small rooms for cases willing to pay from £2 2s. to £4 4s. weekly. There is reason to believe that there would be a considerable demand for such rooms. Parish Council cases are treated in the maternity wards of the Council's Hospital.

Skilled Ante-Natal Care and Examination.

GROUP B.

(Table 15.)

Table 15 shows that out of the 154 fatal cases investigated in the six years, no skilled attendance was engaged prior to the confinement in 25 cases. In the two cases where no information on this point is recorded, it may be presumed from the history of the case that no skilled attendance had been engaged, thus making 27 cases in all, or 17 per cent. of the whole cases. As most of these deaths occurred in connection with abortions or during pregnancy, it is not surprising to find that skilled attendance was not previously arranged for. In other 29 cases, or 19 per cent., skilled attendance was engaged before the confinement began, but there was no record of the period when such engagement was made, nor was there any evidence of ante-natal care having been given. In other 32 cases, or 21 per cent., skilled attendance was engaged, but there was no evidence of definite ante-natal care having been given. In the remaining 66 cases, amounting to 43 per cent. of the total, skilled attendance was secured at various periods before confinement, as shown in the Table, and some ante-natal care was given in these cases. Of these, 14 attended the ante-natal department at the Maternity Hospital, but 8 of them for a period of less than six weeks before confinement, or a period too short for complete treatment.

The class of case for which ante-natal treatment has been found to be most successful is "Albuminuria, Convulsions," especially if occurring in first pregnancies. Of the 23 cases of death from this cause, 18 were first pregnancies. The Table shows that in 4 cases no skilled attendance was engaged before labour or the occurrence of the eclampsia. In 5, skilled attendance was secured, but there was no evidence when such was obtained or of the urine having been examined. In 4 others, skilled attendance was obtained at various periods from two weeks upwards. For these also there is no evidence that the urine was examined. In the remaining 10 cases, the urine was probably examined, but at too short a period for proper treatment to be carried out.

It is of importance that, in cases of first pregnancies especially, the necessity for examination of the urine should be emphatically impressed on medical students and pupil midwives. Midwives are now being virtually obliged, under a recent alteration of the Rules for Midwives, to make such examination, and we are now endeavouring in Aberdeen to see that this recommendation is being attended to, and are offering assistance, when required, at Maternity and Child Welfare Centres or in the Municipal Laboratory. It is only fair to the midwives to add that it would appear as if also, in a considerable proportion of medically attended cases, the urine had not been examined.

In connection with the National Health Insurance Act, we think it would greatly make for fuller and better ante-natal care if the payment of full Maternity Benefit were made dependent on the mother having sought skilled attendance, say, at least two months before her expected confinement.

Ante-natal care should, if possible, be undertaken or supervised in every case by a duly qualified medical practitioner—especially in first pregnancies, and in every case where a midwife finds indication of unsatisfactory conditions. For poorer women, and it may be for the working classes generally, such examination should be provided gratuitously by the Local Authority under Mother and Child Welfare Scheme, to all who may desire to have it. This is practically the position at present in Aberdeen.

Clinics are held at the Ante-Natal Annexe—already referred to—twice weekly. During 1922, 437 new cases attended.

Ante-natal cases are also seen at the various Mother and Child Welfare Centres in the City.

All the midwives complain that they are not engaged for confinements in time to allow of ante-natal examination and care. Education of the pregnant women in this respect is much required, and such education can be, and in Aberdeen, as has already been referred to, is given at the Child Welfare Centres.

Causes, Prevention and Treatment in Relation to Puerperal Mortality.

GROUP B.

All the information given under the other headings has a more or less direct bearing on this matter.

In referring to Table 2, when dealing with ages of women whose death was associated in the death certificate with puerperal conditions, it was stated that further reference would be made to the contents of this Table, which gives the causes of death for the whole 154 deaths forming Group B. It would have probably been more instructive to have grouped the causes of death in the Table in relation to two periods, namely, the period before delivery had begun and the period commencing with delivery.

From the information available, partly from the death certificates themselves and partly from the inquiries made by the Health Department, it can be stated that out of the total 154 deaths during the six years 1917-1922 the pre-parturition deaths, excluding 18 abortion deaths, amounted to 17, or about one-ninth of all the deaths. Including the abortion deaths, the proportion of such cases rises to between one-fourth and one-fifth.

This fact emphasises the importance of full attention being given to the pre-parturient period, apart from the great preventive value of such care in diminishing the mortality at delivery or in the puerperium.

Not all such pre-parturient deaths are preventable, as some are due to diseases to which any person may succumb, such as a zymotic disease; but probably upwards of a half of the 17 deaths may be regarded as falling within the more preventable category.

Thus, there were six deaths from albuminuria and convulsions, and three from hæmorrhage. The remaining deaths were certified as due to pneumonia, influenzal pneumonia, hepatic cirrhosis, pneumo-thorax, tubal gestation with rupture, ectopic gestation, acute hydramnios and uncontrollable vomiting.

As to the 119 deaths at parturition or subsequently—practically all after parturition—the chief single cause of death, as certified, was sepsis, with 31 deaths; and the next largest was hæmorrhage, with 19 deaths; albuminuria and convulsions, with 17—all of these belonging to the more preventable causes. Failure of the heart—a very vague cause—was certified for 13 deaths, and 11 for pneumonia. There had been much influenzal pneumonia in Aberdeen, as elsewhere, in 1918-19. The other certified causes, to which there were in no instance ascribed more than 4 deaths, were embolism, contracted pelvis, difficult labour, uterine rupture, pleurisy, peritonitis, gastric ulcer, erysipelas, tubercle, sarcoma, goitre.

The narration of these causes clearly indicates a large scope for the reduction of both pre-parturient and post-parturient mortality.

Harmful Effects, if any, of Use of Instruments in Labour.

GROUP B.

In order to determine fully the extent to which instruments are used in confinements in Aberdeen, it would be necessary to have the information regarding all cases of confinement, as well as for the 154 cases of death specially dealt with in the Tables. There is, however, in Table 14, a complete record of the instrumental cases in the practice of midwives. There it is shown that in 4,657 confinements attended by midwives in the course of the six years, medical assistance was asked for in 393 cases during parturition. In 226 of these 393 (or fully one-half) instruments were used. This represents about 1 in every 20 of the total midwives' cases. It may be stated that there were no deaths among the midwives' cases in which instruments had been used. This is a somewhat remarkable experience, but it has to be kept in mind that, as a rule, midwives do not send for medical assistance in difficult cases

until labour is well advanced, by which time instruments can be applied with much less danger than when used earlier.

With regard to the total puerperal deaths in the City, viz., 154 in 1917-1922, instruments had been used in 49 of the cases, the causes of death, as certified, being as follows:—Sepsis, 15; albuminuria, 10; hæmorrhage, 10; heart failure (including 1 mitral disease), 6; contracted pelvis, 3; influenza, 2; difficult labour, 1; rupture of uterus, 1; uncontrollable vomiting, 1.

Harmful Effects, if any, of Use of Anaesthetics in Labour.

GROUP B.

In only one case in the series of 154 did the anaesthetic appear to have a causal connection with death, as was brought out in the usual inquiry made in such cases, on Crown instructions. The woman died during delivery by forceps, and while more or less under the influence of the anaesthetic, which in this case was chloroform and ether, and, later, ether only.

Sources of Sepsis in Relation to Nature of Attendance and Precautions Taken.

GROUP B.

Table 17, dealing with the notification of puerperal sepsis or puerperal fever, shows that notification has been improving in relation to deaths since 1893. There was a decline in 1911-1916, probably due to some extent to the War and reduction of medical practitioners. Since 1917, the proportion has again risen. Although notification is improving, it is probably still far from being complete. The notification of this disease is difficult for medical practitioners, especially for the young medical practitioner, whose reputation as a practitioner often depends on his success in midwifery, and the lay mind is inclined to attribute the occurrence of this disease to neglect in some form. Two of the cases of septic abortion referred to in Table 12 had no vaginal examination before, during, or after delivery, until sepsis was well developed. No skilled attendant had been summoned at the time of abortion, and within a week in one case, and two weeks in the other, when a doctor was called in, sepsis was detected. Of course, the possibility of interference to procure abortion in these two cases has to be considered, and inquiry into that was not pressed.

A review of the deaths from sepsis and septic abortions in previous Tables, keeping in view the condition of the woman and the nature of the attendance at confinement, shows a rather high rate at the extremes of age—Table 2; a higher rate among illegitimate mothers than legitimate—Table 3; an association with dirty house—Table 4; that the size of house had not much effect—Table 5; that crowdedness had probably not much effect—Table 6; a higher rate among the unhealthy than among the healthy—Table 7; and a distinctly higher rate in the first pregnancies as compared with the second, third, and upwards, till the later pregnancies are reached (the higher rate in first pregnancies is probably in part due to more interference during delivery)—Table 10.

Table 12 shows the rate of sepsis in various types of practice. Experience in regard to midwives' cases would seem to show that the ordinary examinations, including vaginal, such as are made by the midwives in almost every confinement, are not a serious source of sepsis, as the death-rate for septic cases in the practice of midwives is the lowest, viz., 0·9 per 1,000 confinements. Particular care is taken by periodical examination of equipment, person (including hands and nails), house, and clothing of the midwives, to see that thorough cleanliness is maintained.

The use of instruments as a cause of sepsis has already been discussed.

There can be no doubt that cases of puerperal sepsis occurring in homes without adequate accommodation and nursing should be removed to hospital, and at the earliest opportunity, so that the best treatment procurable may be obtained.

Frequency of Close Succession of Septic Cases in Individual Practices (Doctor, Midwife, or Nurse or Pupil).

GROUP B.

Only very rarely has any such succession of septic cases in the practice of either doctors or midwives been experienced in Aberdeen. There have been at somewhat long intervals one or two cases in close succession in the practice of a midwife or a doctor.

General High Incidence of Septic Cases in Individual Practices, apart from a Close Succession of Cases.

GROUP B.

The medical practitioners with the largest number of septic cases in their practice have been also these with large midwifery practices, but there is no reason to believe that the proportion of septic cases in their practice exceeded that of other practitioners. As regards midwives, reference may be made to Table 13.

Possible Source of Sepsis in Husband.

GROUP B.

No evidence on this point is obtainable from our record cards. It is not unlikely that the husband may be a source of sepsis, as coitus at a late stage of pregnancy is not unusual. In the *Journal of the American Medical Association* of September 29th, 1923, in a review of current medical literature, the following statement appears:—

Present Conception of Puerperal Fever.—Brouha remarks in the course of this study of the etiology, pathologic anatomy, and prophylaxis of puerperal fever, that coitus during the last two months of pregnancy is dangerous. The streptococcus was cultivated from under the prepuce in more than 50 per cent. of the men examined.

Effect of Venereal Disease.

GROUP B.

In only one case out of the 154 deaths was evidence of gonorrhœa or syphilis obtained. This was in a case of illegitimate birth. The mother had dirty personal clothing. Vaginal swabs showed gonococci and streptococci. The woman died eleven days after confinement.

Association with Still-Birth.

GROUP B.

(Table 16.)

Table 16 shows that the proportion of still-births to live-births for the years 1917-1922 was 43 to 1,000.

The death-rate per 1,000 births among mothers of still-born children, compared with that among mothers of live-born children, is twelve times as great, showing that the association of still-birth with parturition would appear to have a definite causal relation with mortality. The same may be said for the different causes of death, the proportion for hæmorrhage being twenty-one times greater.

The total number of abortions is not known, so that we cannot compare the rates for abortion with those for live and still-births.

In Aberdeen it is customary to have the bodies of all still-born children in the practice of midwives and of the Maternity Hospital examined for spirochaetes. Two hundred and thirty-five bodies were so examined, and the result shows that the percentage with syphilis was almost the same for the three years 1917-1919 and the three definitely post-war years 1920-1922. The mothers of these still-born children found to be syphilitic were seen by the Child Welfare Medical Officer, and in most cases persuaded to attend for treatment at the clinic for venereal diseases.

Effect of Ordinary Zymotic Diseases in Causing Death during First Four Weeks after Child-Birth.

GROUP B.

Only three deaths of this nature occurred during the six years 1917-1922—one from scarlet fever, one from erysipelas, and one from diphtheria. The association with parturition in these cases was as follows:—In the first case the woman contracted scarlet fever typical in all details and accompanied by acute vomiting. She was about two months pregnant. The condition of her general health for some time before was not satisfactory. Incomplete abortion followed the next morning, pleurisy two days later, and death on sixth day after

delivery. There was bacteriological evidence of streptococcal infection, and *post-mortem* examination revealed a portion of retained placenta. The details of this case are given, as the case is an interesting one.

In the case of erysipelas, the disease developed before the birth of the child, and death followed two days after delivery. In the third case, the woman contracted diphtheria three days after delivery, and death followed two days later.

There is thus no evidence of special susceptibility to zymotic disease among parturient women.

It has to be remembered that the Registrar-General classifies these deaths under Infectious Disease.

Results of Bacteriological Examinations in Living or Dead, and of Post-mortem Examinations.
GROUP B.

Bacteriological findings have been obtained only for those cases which were admitted to the City Hospital for infectious disease. Dr. Smith, the Bacteriologist at the Hospital, has kindly furnished a brief summary of the cases which he has examined since 1921 up to the present date. The information is interesting:—

Nineteen cases of puerperal sepsis, with varying degrees of pyrexia, have been blood cultured. Blood cultures from nine cases remained sterile, and all these cases recovered. The only organisms isolated from the other ten cases were hæmolytic streptococci.

Eight of the septicæmic cases died, and two recovered.

Both of the cases which recovered had antistreptococcic serum given. It would accordingly appear that if the blood of patients, suffering from puerperal sepsis, or sent to hospital as such, is found to be sterile, the prognosis is good, whereas if the blood contains hæmolytic streptococci, the prognosis is very grave.

Post-mortem examinations were made in eight cases. In two of these, portions of retained placenta were found. The others showed no special features referring to parturition.

The various points of interest have been commented upon in the course of the text, and a few suggestions have been made with regard to improvement in the midwifery service in the future, with the hope of reducing puerperal mortality, so that further comment seems unnecessary.

TABLE 1.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP A.

Deaths with no reference in Certificate of Death to Pregnancy or Parturition—got by Aberdeen system of inquiry.

Classified according to Certified Cause of Death and Age, for Years 1917-1922 (six years).

22 Deaths.

CAUSE OF DEATH.	NUMBER OF DEATHS IN EACH AGE GROUP.							Totals
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Pneumonia	*1 (19 yrs.)	1	0	*1	0	*1	0	4
Influenzal Pneumonia .	0	0	0	*1	*1	0	0	2
Bronchitis	0	*2	0	*1	0	0	0	3
Pulmonary Tuberculosis	0	0	0	0	*1	0	0	1
Heart Failure	0	0	*1	0	0	0	*1	2
Endocarditis	0	*1	0	0	0	0	0	1
Otitis Media	0	0	0	*1	0	0	0	1
Meningitis	0	0	0	1	0	0	0	1
Bright's Disease . . .	0	0	0	0	*1	0	0	1
Cerebral Thromb. . . .	0	1	1	0	0	1	0	3
Septicæmia	0	0	0	1	0	0	0	1
Asthenia, Syncope . . .	0	0	0	0	1	0	0	1
Acute Yellow Atrophy	0	0	0	1	0	0	0	1
TOTALS	1	5	2	7	4	2	1	22

* Disease stated to have begun before birth.

TABLE 2.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Deaths in which association with Pregnancy or Parturition stated in Certificate
1917-1922 (six years).

Total Births (Live and Still)—23,027.

Total Deaths—154.

Classified according to Certified Cause of Death and Age.

CAUSE OF DEATH.	AGE.													TOTAL.
	SINGLE YEARS, 15—19.					FIVE-YEARLY PERIODS.								
	15.	16.	17.	18.	19.	15-19.	20-24.	25-29.	30-34.	35-39.	40-44.	45-49.		
Sepsis,	1	...	2	3	10	5	4	6	3	...	31	
Abortion—septic,	1	...	1	...	...	4	...	3	...	8	
Abortion—other than septic,	2	2	2	3	1	...	10	
Albuminuria, Convulsions,	1	...	1	2	4	8	6	2	3	...	...	23	
Hæmorrhage,	2	5	7	5	2	1	22	
Phlegmasia, Phlebitis, Embolism, Uncontrollable Vomiting, Ectopic Gestation,	1	1	...	2	...	3	1	...	7	
Other diseases and accidents of Pregnancy,	1	1	4	5	3	5	2	...	20	
Other diseases and accidents of Childbirth,	1	3	4	6	1	1	16	
Other diseases and accidents of Puerperium,	2	6	2	6	1	...	17	
TOTAL,	1	1	2	6	10	29	34	28	37	14	2	154	
Number of Mothers, based on figures in Special Report of 1911,	12	116	329	440	897	4862	7131	5229	3627	1168	113	23027	
Deaths per 1,000 Births, from—														
Sepsis,	8.6	...	4.5	3.3	2.1	0.7	0.8	1.6	2.5	...	1.3	
Abortion—septic,	3.0	...	1.1	...	...	0.8	...	2.5	...	0.3	
Abortion—other than septic,	0.4	0.3	0.4	0.8	0.9	...	0.4	
Albuminuria, Convulsions,	83.3	...	3.0	4.5	4.4	1.6	0.8	0.4	0.8	...	...	1.0	
Hæmorrhage,	0.4	0.7	1.3	1.4	1.7	8.8	1.0	
Phlegmasia, Phlebitis, Embolism, Uncontrollable Vomiting, Ectopic Gestation,	2.3	1.1	...	0.3	...	0.8	0.8	...	0.3	
Other diseases and accidents of Pregnancy,	2.3	1.1	0.8	0.7	0.6	1.4	1.7	...	0.9	
Other diseases and accidents of Childbirth,	0.2	0.4	0.7	1.7	0.9	8.8	0.7	
Other diseases and accidents of Puerperium,	0.4	0.8	0.3	1.7	0.9	...	0.7	
All Causes (Group B),	83.2	8.6	6.0	13.6	11.0	5.9	4.7	5.3	10.2	11.9	17.6	6.6	
* All Causes (Group A), (see Table I.),	2	1	1	0.3	1	1	2	9	0.9	

* These Deaths are not included in the tabular analysis.

TABLE 3.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Puerperal Deaths in relation to Illegitimacy.

1917-1922 (six years).

Total Legitimate Births (Live and Still)	20,731
Deaths	129
Deaths per 1,000 Legitimate Births	6·2
Total Illegitimate Births (Live and Still)	2,296
Deaths	25
Deaths per 1,000 Illegitimate Births	10·9

CAUSES OF DEATH.

CAUSE OF DEATH.	DEATHS AMONG MOTHERS BEARING—				Total Deaths.
	Legitimate Children.		Illegitimate Children.		
	No. of Deaths.	Deaths per 10,000 Legit Births.	No. of Deaths.	Deaths per 10,000 Illegit. Births.	
Sepsis	23	11	8	35	31
Abortion—Septic	5	2	3	13	8
Abortion—Other than Septic	7	3	3	13	10
Albuminuria, Convulsions	17	8	6	26	23
Hæmorrhage	21	10	1	4	22
Phlegmasia, Phlebitis, Embolism, Uncontrollable Vomiting, Ectopic Gestation	7	3	...	...	7
Other Diseases and Accidents of Pregnancy	18	9	2	9	20
Other Diseases and Accidents of Childbirth	15	7	1	4	16
Other Diseases and Accidents of Puerperium	16	8	1	4	17
TOTAL DEATHS	129	62	25	109	154

TABLE 4.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Cleanness of House (Usual Residence).

1917-1922 (six years)

*Total Births (Live and Still)—23,027.**Total Deaths—154.*

CAUSE OF DEATH.	Good.	Medium.	Bad.	Unrecorded.	Total.
Sepsis	26	3	2	...	31
Abortion—Septic	8	...	...	...	8
Abortion—Other than Septic	9	1	...	...	10
Albuminuria, Convulsions	22	1	...	...	23
Hæmorrhage	20	2	...	...	22
Phlegmasia, Phlebitis, Embolism, Uncontrollable Vomiting, Ectopic, Gestation	7	...	...	...	7
Other Diseases and Accidents of Pregnancy	19	...	...	1	20
Other Diseases and Accidents of Child- birth	15	1	...	...	16
Other Diseases and Accidents of Puer- perium	15	2	...	...	17
TOTALS	141	10	2	1	154
Percentage of Total Deaths according to condition of house	91·6	6·5	1·3	0·6	100
Percentage of Sepsis (including Septic Abortion)	87·2	7·7	5·1	...	100
All Houses visited by Health Visitors in connection with Births: Percentage	95·4	4·3	0·2	...	100

TABLE 5.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Puerperal Deaths in relation to Size of House (Usual Residence).
1917-1922 (six years).

Total Births (Live and Still)—23,027.

Total Deaths—154.

CAUSE OF DEATH.	HOUSES OF									
	1 Room.		2 Rooms.		3 Rooms.		4 Rooms and upwards.		Total.	
	No. of Deaths	% of Total.	No. of Deaths	% of Total.	No. of Deaths	% of Total.	No. of Deaths	% of Total.	No. of Deaths	% of Total.
Sepsis	7	29	15	25	4	11	5	15	31	20
Abortion—Septic . . .	1	4	4	6	1	3	2	6	8	5
Abortion—other than Septic	2	8	1	2	4	11	3	9	10	6.5
Albuminuria, Convulsions .	3	13	11	18	7	20	2	6	23	15
Hæmorrhage	3	13	5	8	6	17	8	25	22	15
Phleg., Phleb., Embol., Un- contra. Vomit., Ectopic Gestation	1	4	3	5	1	3	2	6	7	4.5
Other Dis. and Accid. of Pregnancy	3	13	6	10	5	15	5	15	20	13
Other Dis. and Accid. of Childbirth	1	4	7	11	4	11	4	12	16	10
Other Dis. and Accid. of Puerperium	3	12	9	15	3	9	2	6	17	11
TOTALS	24	100	61	100	35	100	33	100	154	100

TABLE 6.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Puerperal Deaths in relation to Crowdedness.
1917-1922 (six years).

Total Births (Live and Still)—23,027.

Total Deaths—154.

CAUSE OF DEATH.	NUMBER OF DEATHS IN HOUSES, IN RELATION TO PERSONS PER ROOM.							Total No.
	2 Persons or under.		3 Persons and above 2.		Above 3.		No Record.	
	No. of Deaths.	% of Total.	No. of Deaths.	% of Total.	No. of Deaths.	% of Total.		
Sepsis	14	15.4	12	26.7	4	25.0	1	31
Abortion—Septic . . .	3	3.3	4	8.9	1	6.3	...	8
Abortion — Other than Septic	6	6.6	1	2.2	3	18.7	...	10
Albuminuria — Convulsions	17	18.7	6	13.3	...	...	...	23
Hæmorrhage	15	16.5	4	8.9	3	18.7	...	22
Phleg., Phleb., Embol., Uncontrl. Vomiting, Ectopic Gestation . . .	4	4.3	3	6.7	...	...	...	7
Other Dis. and Accid. of Pregnancy	14	15.4	5	11.1	...	...	1	20
Other Dis. and Accid. of Childbirth	10	11.0	5	11.1	1	6.3	...	16
Other Dis. and Accid. of Puerperium	8	8.8	5	11.1	4	25.0	...	17
TOTAL	91	100	45	100	16	100	2	154

TABLE 7.—CITY OF ABERDEEN.—PUERPERAL DEATHS

GROUP B.

Health of Woman before Pregnancy.
1917-1922 (six years).

Total Births (Live and Still), 23,027.

Total Deaths—154.

CAUSE OF DEATH.	HEALTH.					Total Deaths.
	Good.		Unsatisfactory.		Unrecorded.	
	No. of Deaths.	% of Total.	No. of Deaths.	% of Total.	No. of Deaths.	
Sepsis	18	19	9	21	4	31
Abortion—Septic	4	4	1	2	3	8
Abortion—Other than Septic .	8	8	1	2	1	10
Albuminuria	17	18	4	9	2	23
Hæmorrhage	16	16	5	11	1	22
Phlegmasia, Phlebitis, Embolism, Uncontrollable Vomiting, Ectopic Gestation .	4	4	3	7	...	7
Other Diseases and Accidents of Pregnancy	15	15	4	9	1	20
Other Diseases and Accidents of Childbirth	10	10	6	14	...	16
Other Diseases and Accidents of Puerperium	6	6	11	25	...	17
TOTAL	98	100	44	100	12	154
Percentage of Total . . .	64		28		8	100

TABLE 8.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Health of Woman during Pregnancy.
1917-1922 (six years).

Total Births (Live and Still)—23,027.

Total Deaths—154.

CAUSE OF DEATH.	HEALTH OF WOMEN.*	
	Good.	Unsatisfactory.
Sepsis	13	15
Abortion—Septic	2	5
Abortion—Other than Septic	7	2
Albuminuria, Convulsions	10	12
Hæmorrhage	9	11
Phlegmasia, Phlebitis, Embolism, Uncontrollable Vomiting, Ectopic Gestation	3	4
Other Diseases and Accidents of Pregnancy	9	10
Other Diseases and Accidents of Childbirth	6	10
Other Diseases and Accidents of Puerperium	6	11
Total Deaths	65	80
All Mothers visited by Health Visitors (six years)	13,684	3,421
Deaths per 1000 Mothers from :—		
All Causes	4·8	23·4
Sepsis	0·9	4·4
Abortion (all)	0·7	2·1
Albuminuria, Convulsions	0·7	3·5
Hæmorrhage	0·7	3·1

* Excluding 9 women for whom condition of health not recorded.

TABLE 9.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Duration of Pregnancy in relation to Cause of Death.
1917-1922 (six years).

Total Births (Live and Still)—23,027.

Total Deaths—154.

CAUSE OF DEATH.	NUMBER OF DEATHS.					
	Under 7 Months.	7 Months and under 9 Months.	Full Time.	Overdue.	Deaths dur- ing Preg- (no Birth).	Total.
Sepsis . . . . .	...	5	24	2	...	31
Abortion—Septic	8	...	...	...	...	8
Abortion—other than Septic .	10	...	...	...	...	10
Albuminuria, Convulsions .	...	8	9	...	6	23
Hæmorrhage	3	3	12	1	3	22
Phlegmasia, Phlebitis, Embol- ism, Uncontrollable Vomit- ing, Ectopic Gestation .	3	...	4	...	...	7
Other Dis. and Accid. of Preg- nancy . . . . .	...	10	5	...	5	20
Other Dis. and Accid. of Child- birth . . . . .	...	...	14	1	1	16
Other Dis. and Accid. of Puer- perium . . . . .	...	6	11	...	...	17
TOTAL	24	32	79	4	15	154
Percentage of Total	16	21	51	3	10	100

TABLE 10.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Comparative Danger of First and Subsequent Pregnancies or Confinements in relation to Cause of Death.

1917-1922 (six years).

Total Births (Live and Still)—23,027.

Total Deaths—154.

CAUSE OF DEATH.	NUMBER OF PREGNANCY OR CONFINEMENT.												Total.
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	Over 11	
Sepsis	14	5	3	3	2	...	...	2	...	...	...	2	31
Abortion—Septic	1	...	...	2	2	...	1	2	...	...	...	...	8
Abortion—Other	1	2	...	2	1	...	2	...	...	...	1	1	10
Albuminuria	18	2	1	1	1	...	...	...	...	...	...	...	23
Hæmorrhage	6	2	7	2	1	2	...	1	...	1	...	...	22
Phleg., Phleb., Embol., Uncont. Vom., Ectopic Gestation	2	...	1	...	2	1	...	...	...	...	...	1	7
Other Dis. and Accid. of Pregnancy	6	5	2	2	3	1	...	1	...	...	...	...	20
Other Dis. and Accid. of Child-birth	5	1	1	2	1	...	4	...	1	...	...	1	16
Other Dis. and Accid. of Puerperium	5	1	4	2	1	...	...	2	...	2	...	...	17
TOTAL DEATHS	58	18	19	16	14	4	7	8	1	3	1	5	154
Estimated Number of Women with such Pregnancies or Confinements (based on Health Visitors' Cases)	7525	5024	2841	2174	1625	1050	766	618	476	359	235	334	23,027
Deaths per 10,000 Births, from :—													
Sepsis	18	10	11	14	12	...	...	32	...	...	...	60	13
Abortion—Septic	1	...	...	9	12	...	13	32	...	...	...	...	3
Abortion—Other	1	4	...	9	6	...	26	...	...	...	43	30	4
Albuminuria	24	4	3	5	6	...	...	...	...	...	...	...	10
Hæmorrhage	8	4	25	9	6	19	...	16	...	43	...	...	10
Phleg., Phleb., Embol., Uncont. Vom., Ectopic Gestation	3	...	3	...	13	10	...	...	...	...	...	30	3
Other Dis. and Accid. of Pregnancy	8	10	7	9	19	9	...	16	...	...	...	...	9
Other Dis. and Accid. of Child-birth	7	2	4	9	6	...	52	...	21	...	...	30	7
Other Dis. and Accid. of Puerperium	7	2	14	9	6	...	...	32	...	85	...	...	7
ALL CAUSES	77	36	67	73	86	38	91	128	21	128	43	150	66

TABLE 11.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Place of Confinement, or Death (if No Confinement).

1917-1922 (six years).

*Total Births (Live and Still)—23,027,**Total Deaths—154.*

CAUSE OF DEATH.	Dwelling.	Public Institution.	Private Nursing Home.	Total.
Sepsis	23	7	1	31
Abortion—Septic	7	1	...	8
Abortion—other than Septic	9	...	1	10
Albuminuria	10	13	...	23
Hæmorrhage	18	4	...	22
Phleg., Phleb., Embol., Uncontr. Vomiting, Ectopic Gestation	4	3	...	7
Other Dis. and Accid. of Pregnancy	10	10	...	20
Other Dis. and Accid. of Childbirth	9	6	1	16
Other Dis. and Accid. of Puerperium	13	4	...	17
TOTAL	103	48	3	154
Estimated Number of Births (1917-1922).	20,731	1946	350	23,027
Deaths per 1000 Births, from :—				
Sepsis	1·1	3·6	2·9	1·3
Abortion—Septic	0·3	0·5	...	0·3
Abortion—other than Septic	0·4	...	2·9	0·4
Albuminuria	0·5	6·7	...	1·0
Hæmorrhage	0·9	2·1	...	1·0
Phleg., Phleb., Embol., Uncontr. Vomiting, Ectopic Gestation	0·2	1·5	...	0·3
Other Dis. and Accid. of Pregnancy	0·5	5·1	...	0·9
Other Dis. and Accid. of Childbirth	0·4	3·1	2·8	0·7
Other Dis. and Accid. of Puerperium	0·7	2·1	...	0·7
ALL CAUSES	5·0	24·7	8·6	6·6

TABLE 12.—CITY OF ABERDEEN.—PUERPERAL DEATHS. GROUP B.
Nature of Skilled Attendance at Delivery, or at Death if before Delivery. 1917-1922 (six years).
Total Births (Live and Still)—23,027. Total Deaths—154.

	DOCTOR.	ATTENDANCE BY MIDWIFE.						*INSTITUTION.		No Skilled Attendance.	GRAND TOTALS.
		Alone.	With Medical Assistance				Total.	In-Pat.	Dist.		
			During Pregnancy.	During Birth.	After Birth.	Total with Medical Assistance.					
Number of Maternity Cases, . . .	15,683 (692)	4171 (6)	53 (1)	392 (1)	69 (..)	514 (2)	4685 (8)	1232 +	713 (14)	Not known	22,313 (714)
Number of Deaths from—											
Sepsis,	18 (4)	(..)	1 (..)	(1)	(1)	2 (..)	3 (1)	3 (..)	2 (..)	(..)	26 (5)
Abortion—septic,	3 (1)	(..)	(..)	(..)	(..)	(..)	(..)	(..)	1 (..)	3 (..)	7 (1)
Abortion—other,	5 (1)	(..)	(..)	(..)	(..)	(..)	(..)	(..)	(..)	4 (..)	9 (1)
Albuminuria, Eclampsia, . . .	10 (9)	(..)	(..)	(..)	(..)	(..)	(..)	(..)	4 (..)	(..)	14 (9)
Hæmorrhage.	16 (1)	1 (..)	(1)	(..)	(..)	(..)	(1)	1 (1)	1 (..)	(..)	20 (2)
Phlegmasia, Phlebitis, Embolism, Uncontrollable Vomiting, Ectopic Gestation,	4 (2)	(..)	(..)	(..)	(..)	(..)	(..)	(..)	1 (..)	(..)	5 (2)
Other diseases and accidents of Pregnancy,	8 (8)	1 (1)	(..)	(..)	(..)	(..)	(..)	1 (1)	1 (..)	(..)	11 (9)
Other diseases and accidents of Childbirth,	8 (3)	(..)	(..)	(..)	(..)	1 (..)	1 (..)	1 (..)	4 (..)	(..)	13 (3)
Other diseases and accidents of Puerperium,	9 (2)	(..)	(..)	(..)	(..)	4 (..)	4 (..)	2 (..)	(..)	(..)	15 (2)
TOTAL DEATHS,	81 (31)	2 (1)	1 (1)	(1)	(1)	7 (..)	8 (2)	10 (3)	17 (..)	7 (..)	120 (34)
Including transfers,	112	3	2	1	7	10	13	17	5	7	154
Deaths per 1,000 cases (including transfers) from—											
Sepsis,	1.3	(..)	(..)	(..)	(..)	7.8	0.9	2.4	2.8	(..)	1.3
Abortion—septic,	0.2	(..)	(..)	(..)	(..)	(..)	(..)	(..)	1.4	(..)	0.3
Abortion—other,	0.4	(..)	(..)	(..)	(..)	(..)	(..)	(..)	(..)	(..)	0.4
Albuminuria,	1.2	(..)	(..)	(..)	(..)	(..)	(..)	3.2	(..)	(..)	1.0
Hæmorrhage,	1.0	0.2	(..)	(..)	(..)	1.9	0.4	1.6	1.4	(..)	1.0
Phleg., Phleb., Embol., Uncontr. Vom., Ectop Gestn.,	0.4	(..)	(..)	(..)	(..)	(..)	(..)	0.8	(..)	(..)	0.3
Other dis. and acc. of Preg., . .	1.0	0.5	(..)	(..)	(..)	(..)	0.4	0.8	1.4	(..)	0.9
Other dis. and acc. of Childbirth, .	0.7	(..)	(..)	(..)	(..)	1.9	0.2	3.2	(..)	(..)	0.7
Other dis. and acc. of Puerperium, .	0.7	(..)	(..)	(..)	(..)	7.8	0.9	1.6	(..)	(..)	0.7
ALL CAUSES,	6.8	0.7	(..)	(..)	(..)	19.4	2.7	13.8	7.0	(..)	6.7

* Cases admitted as In-patients to an Institution or Nursing Home from the practice of a Doctor, Midwife, or Hospital District, are not included in the Institution figures as given in Table, having been transferred to columns for Doctor, Midwife, or Hospital District, and are shown separately within brackets. All Nursing Home cases (350) were so transferred, including the deaths, of which there were 3 (1 Sepsis, 1 Non-septic Abortion, 1 other Diseases and Accidents of Childbirth).
† Excluding transferred cases.

TABLE 14.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Number and Classification of Cases in which Medical Assistance obtained by Midwives in connection with Pregnancy and Parturition.

1917-1922 (six years).

Total Confinements (including Abortions), attended by Midwives—4657.

A.—DURING PREGNANCY.

Conditions indicating need for Medical Assistance.	All Cases.	Deaths.
Abortion (Total or Complete)	40	...
Antepartum Hæmorrhage	5	1
Sickness	2	1
Facial Paralysis	1	...
Cough and Pain in Ribs	2	..
Oedema	2	...
Pain in Arm	2	...
TOTALS	54	2

B.—DURING PARTURITION.

Conditions indicating need for Medical Assistance.	All Cases	Cases in which Forceps used.	Deaths.
Unusual Presentations	117	65	...
Tedious Labour (including Uterine Inertia)	157	105	...
Contracted Pelvis	43	35	...
Other Disproportion between Pelvis and Child	22	21	...
Retained Placenta	17	...	...
Ruptured Perineum	5	...	...
Placenta Prævia	4	...	1
Prolapsed Cord	6	...	...
Sickness	2	...	...
Rigid Cervix	6	...	...
Carcinoma Recti	1	...	...
Hæmorrhage	8	...	...
Inversion of Uterus	1	...	...
Rise of Temperature	2	..	...
Puerperal Eclampsia	1	...	...
Heart Failure	1	...	..
TOTALS	393	226	1

Number of Cases in which Forceps used 226

Number of Confinements 4657

Number of Cases in which Forceps used, per 100 Confinements 4.9

No Deaths occurred in Cases where Forceps used.

C.—AFTER PARTURITION.

Conditions indicating need for Medical Assistance.	All Cases.	Deaths.
Rise of Temperature	22	2
Postpartum Hæmorrhage	7	...
Sickness	8	...
Quick Pulse and Abdominal Pain	2	...
Pneumonia	3	2
Bronchitis	2	...
Appendicitis	1	...
Phlegmasia Alba Dolens	4	...
Hæmatoma of Vagina	1	...
Collapse	3	1
Influenza	2	...
Rigor	1	...
Heart Failure	2	1
Pain in Ribs	7	1
Inflammation of Breasts	2	...
Retention of Urine	2	...
TOTALS	69	7

TABLE 15.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Sufficiency of Skilled Ante-Natal Care and Examination
(whether by Doctor or Midwife).

1917-1922 (six years).

CAUSE OF DEATH.	SKILLED ATTENDANT ENGAGED BEFORE LABOUR.				AT ANTE-NATAL CLINIC.		No Engage-ment made.	No in-formation received.	Total.
	2 mths or more.	1 mth. or less than 2 mths.	Under 1 mth.	Time not stated.	6 weeks or more.	Under 6 weeks.			
Sepsis	15 (8)	3 (1)	3 (2)	6	3 (3)	...	1	...	31 (14)
Abortion—Septic	1 (1)	...	1 (1)	3	...	...	3	...	8 (2)
Abortion—other than Septic	2 (2)	1 (1)	...	1	...	...	6	...	10 (3)
Albuminuria	5 (3)	3 (2)	4 (3)	5	...	2 (2)	4	...	23 (10)
Hæmorrhage	7 (3)	1	...	7	...	3 (3)	2	2	22 (6)
Phleg., Phleb., Embol., Un-contr. Vomit., Ectopic Gestn.	3 (3)	...	1 (1)	1	...	...	2	...	7 (4)
Other Dis. and Accid. of Preg-nancy	5 (4)	2 (2)	4 (4)	2	...	...	7	...	20 (10)
Other Dis. and Accid. of Child-birth	7 (3)	1	1	3	2 (2)	2 (2)	...	...	16 (7)
Other Dis. and Accid. of Puer-perium	10 (6)	3 (1)	1 (1)	1	1 (1)	1 (1)	...	...	17 (10)
TOTAL	55 (33)	14 (7)	15 (12)	29	6 (6)	8 (8)	25	2	154 (66)

The unbracketed figure gives the total number of Women dying from the particular cause, and includes the adjacent bracketed figure.

The bracketed figure denotes the cases in which there was definite evidence of ante-natal care having been given.

TABLE 16.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Puerperal Mortality in relation to Still-Births. Occurring after Seventh Month of Pregnancy.
1917-1922 (six years).

Number of Live-Births (as registered)	22,071
Number of Still-Births (as notified)	956
Proportion of Still-Births to Live-Births	43 to 1000
Percentage of Still-Born Infants in which Syphilis detected by Laboratory Examination :—	
Years 1917-19 (3 years)	18·5 per cent.
Years 1920-22 (3 years)	18·8 per cent.

PUERPERAL DEATHS IN RELATION TO—

	Live-Births.		Still-Births.		*Abortions.	†Child not Born.
	No. of Deaths.	Deaths per 1000 Births.	No. of Deaths.	Deaths per 1000 Births.	No. of Deaths.	No. of Deaths.
All Causes	76	3·4	39	40·8	24	15
Sepsis	25	1·1	6	6·3	8	...
Albuminuria and Eclampsia .	10	0·5	7	7·3	...	6
Hæmorrhage	8	0·4	8	8·4	3	3
Other	33	1·5	18	18·8	13	6

* Number of Abortions not known.

† Number of Pregnancies not known.

There were no deaths among the mothers of syphilitic still-born children.

TABLE 17.—CITY OF ABERDEEN.—PUERPERAL DEATHS.

GROUP B.

Deaths from Puerperal Sepsis in relation to Notification.
1893-1922 (in six yearly periods).

	NUMBER OF CASES			Number of Deaths Registered	Proportion of Deaths to Cases Notified.
	Notified.	Not Notified.	Total.		
1893-1898	46	17	63	38	1 : 1·2
1899-1904	54	11	65	39	1 : 1·4
1905-1910	51	6	57	30	1 : 1·7
1911-1916	71	8	79	47	1 : 1·5
1917-1922	63	9	72	39	1 : 1·6

In terms of the Midwives (Scotland) Act, 1915, the following reports are submitted on the work of the Aberdeen Midwives during the two years under review :—

REPORT ON THE WORK OF THE MIDWIVES, 1922.

A total of 25 midwives gave notice of their intention to practise in Aberdeen in 1922.

A. *Number of Midwives.*

Of the 25 midwives, 10 were employed in connection with the Maternity Hospital, and during the year four of these left the Maternity Hospital, three of whom ceased to practise as midwives in this area, while the other was transferred to Burnside Home for Mothers and Babies, Westburn Road, Aberdeen. Two midwives are now employed at Burnside Home. The remaining 13 midwives were engaged in practice on their own account. Of the thirteen, one midwife had no cases during 1922.

STATE OF MIDWIVES.—Married, 6; widows, 5; single, 14.

QUALIFICATIONS.—(a) Certificated by examination, 17; (b) registered by service, 8.

B. *Inspection of Midwives.*

On several occasions the midwives were interviewed by the Inspector of Midwives at the Public Health Office, when their bags, equipment, and registers were inspected. These were found to be in a satisfactory condition on every occasion. As the midwives are now required (Rule E. 16) to place one or two drops of a 1 per cent. solution of silver nitrate within the opening of the lids of the eyes as soon as the child's head is born, they have been requested to make a note in their Registers that this has actually been done.

Visits without notice were paid to the houses of the midwives, when they were found to be clean and well kept. At these inspections opportunity has been taken to discuss with the midwives any points of difficulty that may have arisen in the carrying out of their duties.

C. *Suspension of Midwives.*

During the year it was not found necessary to suspend any midwife from practice.

D. *Births in Aberdeen.*

Total number of births in the City, 4,189 (live, 4,008; still, 181), of which 2,091 were male and 2,098 female.

Of the 4,008 live-births, 3,599 were legitimate and 409 were illegitimate.

Of the 181 still-births, 155 were legitimate and 26 were illegitimate.

In 162 live and still birth cases the mother resided ordinarily outside the City.

The proportion of males to females was as 99·8 to 100 (registered births).

In 1912 it was 97

In 1913 „ 108

In 1914 „ 105

In 1915 „ 101

In 1916 „ 101

In 1917 „ 102

In 1918 „ 105

In 1919 „ 105

In 1920 „ 104

In 1921 „ 106

In 51 confinements there were twin births.

Allowing for twin births there were in all 4,138 confinements (excluding abortions or miscarriages) in the City during 1922.

E. *Nature of Attendance at Birth.*

	No. of Confinements (excluding Abortions or Miscarriages).	TOTAL NUMBER OF BIRTHS		Percentage of Confinements attended.
		Live.	Still.	
MIDWIVES (including cases in which Medical assistance was summoned)	779	768	21	19
MATERNITY HOSPITAL—				
(a) In Wards	386	343	46	9
(b) At Home	162	151	11	4
MEDICAL PRACTITIONERS (excluding cases in which assistance given to Midwives)	2810	2745	103	68
NOT ATTENDED AT TIME OF BIRTH	1	1	..	...
TOTAL	4138	4008	181	...

The midwives attended about 19 per cent. of the total confinements. The number of confinements attended by the several midwives, excluding all Maternity Hospital cases, varied from 1 to 282.

F. *Premature Births (Live).*

Information regarding these is readily obtainable only from the practice of the midwives. In 16 cases, or 2 per cent. of the total confinements attended by midwives (excluding Maternity Hospital cases) the birth was stated to be premature.

G. *Still Births.*

A total of 181 still-births (male, 99; female, 82) were notified during the year, and were distributed as follows in relation to attendance at birth:—

	No. of Live Births.	No. of Still Births.	No. of Still Births per 1,000 Live Births.
MIDWIVES	768	21	27
MATERNITY HOSPITAL—			
(a) In Wards	343	46	134
(b) At Home	151	11	73
MEDICAL PRACTITIONERS	2745	103	38
NOT ATTENDED	1	...	...
TOTAL	4008	181	...

Sixty-five bodies of still-born children, or children who had only lived a few hours, were examined for spirochetes, which were found in four cases, giving a percentage of 6. Arrangements were made to have the mothers of these children in which spirochetes were found, treated by their own doctor or at the V.D. Clinic.

Year.	No. of Still Births.	No. of Registered Births.	No. of Still Births per 1,000 Registered Births.
1916	143	3596	40
1917	134	2946	45
1918	143	2794	51
1919	179	3458	52
1920	170	5010	34
1921	189	4336	44
1922	181	4038	45

H. *Deaths of Infants within Ten Days after Birth.*

	No. of Births (live).	No. of Deaths under ten days.	Percentage of Deaths to Births.
MIDWIVES	768	11	1
MATERNITY HOSPITAL—			
(a) In Wards	343	28	8
(b) At Home	151	...	...
MEDICAL PRACTITIONERS	2745	78	3
NOT ATTENDED	1	...	...
TOTAL	4008	117	3

The causes of the foregoing deaths were as follows:—

Prematurity,	73
Atelectasis and diseases of early infancy,	21
Marasmus, debility, and icterus,	11
Diseases of digestive system, including diarrhoea,	4
Convulsions,	4
Syphilis,	0
Other causes,	4
Total	117

J. Deaths of Mothers.

As regards the deaths of women from any cause associated with pregnancy or child-birth, including all such deaths whatever the precise cause, within four weeks after child-birth (or later if illness originated in the puerperium) there were in the whole City 29 deaths reported by the local Registrars, and one transferred in by the Registrar-General, as belonging to the City. All these deaths were inquired into by the Health Visitors, or information regarding them was obtained from the attending Medical Practitioners, who kindly co-operate in giving the desired information.

ATTENDED BY	No. of Confinements (including Abortions or Miscarriages).	No. of Deaths,	Percentage of Deaths to Confinements.
1. MIDWIVES	788	1	0·1
2. MATERNITY HOSPITAL—			
(a) In Wards	434	6	1·3
(b) At Home	166	4	2·4
3. MEDICAL PRACTITIONERS	2810	19	0·6
4. NOT ATTENDED AT BIRTH.	1	...	...
TOTAL	4199	30	0·7

CAUSES OF DEATH.

	ATTENDED BY				Not At'ended.	Other Institu- tions.	TOTAL.
	Midwives.	MATERNITY HOSPITAL.		Medical Practi- tioners			
		In Wards.	At Home.				
Accidents of Pregnancy—							
Abortion, Miscarriage	1	...	...	...	...	1
Uncontrollable Vomiting
Ectopic Gestation	1	1
Other Accidents of Pregnancy	1	...	...	1
Other Diseases of or associated with Pregnancy	1	1	...	1	...	1	4
Puerperal Hæmorrhage	1	1	...	...	2
Other Accidents of Parturition	1	...	...	1
Puerperal Sepsis	4	3	5	...	...	12
Phlegmasia Alba Dolens
Embolism (and Sudden Death)	3	...	...	3
Albuminuria of Pregnancy	1	...	...	1
Eclampsia	1	..	...	1
Other Diseases of or associated with the Puerperium	2	...	1	3
TOTAL	1	6	4	16	...	3	30

In five of the above cases death occurred before confinement took place. This number includes the case attended by a midwife, one case attended by the Maternity Hospital, one case attended by a doctor but removed to the Maternity Hospital where death occurred, and two cases attended by doctors at home. In a sixth case death occurred from eclampsia during labour. Three cases attended by the Maternity Hospital District were removed to the Maternity Hospital subsequent to confinement. Three cases attended by medical practitioners were removed to the Maternity Hospital subsequent to confinement, and a fourth case was removed to the City Hospital. Abortion or miscarriage, not full confinement, took place in five cases. In all 16 cases received institutional treatment. As far as can be ascertained from the records, the confinement which proved fatal was the first in eight cases.

NOTIFICATION OF DEATH BEFORE MEDICAL ATTENDANCE OBTAINED.—One notification was received of the death of a mother before medical attendance was obtained. This death, referred to above, occurred during pregnancy. The midwife had tried to

persuade the woman to see her doctor, but failed to do so. Death occurred suddenly from heart disease.

Deaths of four children were notified. In all cases the children lived for only a few hours, and a doctor was sent for, but did not arrive before child died.

K. Puerperal Sepsis.

	No. of Confinements (including Abortions or Miscarriages).	No. of Cases.	Percentage of Cases to Confinements.	No. of Deaths.					
				-1	-2 (Weeks).	-3	-4	4+	Total
MIDWIVES	788	...	...	...	...	...	...	...	...
MATERNITY HOSPITAL—									
(a) In Wards	434	5	1.2	2	1	1	...	1	5
(b) At Home	166	3	1.8	...	2	1	...	...	3
MEDICAL PRACTITIONERS .	2810	8	0.2	...	1	1	1	2	5
NOT ATTENDED	1	...	...	...	...	...	...	...	...
TOTAL	4199	16	..	2	4	3	1	3	13

During the year a total of 16 cases of puerperal sepsis was brought to the notice of the Department as having occurred in the City. The above Table shows the incidence of cases in relation to the attendance at birth. No case occurred in the practice of a certified midwife. In all 11 cases received institutional treatment, and of these one recovered while another was still under treatment on 31st December, but was then recovering. Of the five cases treated at home one recovered.

YEAR.	PUERPERAL SEPSIS.			Death Rate per 100 Cases.
	No. of Cases.	Rate per 1,000 Registered Births.	No. of Deaths.	
1912	12	2.9	8	67
1913	10	2.6	7	70
1914	24	5.9	15	63
1915	11	2.9	8	73
1916	11	3.1	5	45
1917	12	4.1	8	67
1918	8	2.9	6	75
1919	10	2.9	1	10
1920	13	2.6	5	38
1921	13	3.0	6	46
1922	16	4.0	13	81

L. *Ophthalmia Neonatorum.*

During the year, 47 cases of ophthalmia neonatorum were notified. These occurred as follows:—

	No. of Births.	No. of Cases of O.N.	Percentage of Cases to Births.
In practice of:—			
MIDWIVES	768	17	2
MATERNITY HOSPITAL—			
(a) In Wards	343	1	...
(b) At Home	151	...	...
MEDICAL PRACTITIONERS	2745	28	1
NOT ATTENDED AT BIRTH	1	1	...
TOTAL	4008	47	1

Notifications of the above were as follows:—

MIDWIVES,	13
MATERNITY HOSPITAL—	
(a) In Wards,	1
(b) At Home,	—
MEDICAL PRACTITIONERS,	27
HEALTH VISITORS,	6
	—
Total,	47
	<u> </u>

In 37 cases the discharge from the eyes was examined bacteriologically, and in 6 cases gonococci were found. The 10 cases in which the discharge was not examined bacteriologically were chiefly slight cases, so it may be concluded that in 13 per cent. of cases a positive result was obtained. In 11 cases, or 23 per cent. of all cases, the mother was stated to have had a vaginal discharge before confinement. One case, which occurred in an institution, received treatment there, while 19 cases received out-patient treatment at the Royal Lfirimary or Eye Institute. The remaining 27 cases were treated at home.

RESULTS.

In all cases a complete cure was reported.

OPHTHALMIA NEONATORUM.

Year.	No. of Registered Births	No. of Cases Notified.	Rate per 1000 Registered Births.
1913	3889	41	10·5
1914	4057	48	11·8
1915	3835	40	10·4
1916	3596	40	11·1
1917	2946	42	14·3
1918	2794	39	13·9
1919	3458	99	28·6
1920	5010	112	22·4
1921	4336	100	23·1
1922	4038	47	11·6

M. *Number and Nature of Cases occurring in 1922 in which the Midwives advised that a Registered Medical Practitioner should be sent for.*

Notifications were received from midwives of having in 154 cases sent for medical assistance. In all cases medical assistance was obtained, and in one of the cases two doctors had to be sent for.

In 113 cases the assistance was required for the mother and in 41 cases for the child.

SUMMARY OF CASES.

1. During pregnancy,	10
2. During parturition,	90
3. After parturition,	13
4. For infant,	41
Total,	<u>154</u>

The proportion of cases in which medical assistance was summoned, varied considerably for the different midwives:—

Reference No. of Midwife.	Total No. of Confinements including Abortions or Miscarriages.	Total No. of Confinements excluding Abortions and Miscarriages.	Total No. of Cases where Medical Assistance obtained.	Percentage of Cases where Medical Assistance obtained.
1	282	282	59	21
2	141	137	28	20
3	52	52	15	29
4	70	70	13	19
5	86	84	13	15
6	45	45	9	20
7	33	33	7	21
8	57	57	6	10
9	4	2	2	50
10	5	4	1	20
11	12	12	1	8
12	1	1	...	...
—	788	779	154	19

FEES PAID.—Fees amounting to £174 6s. were paid to medical practitioners for the above services.

N. Notification of Artificial Feeding.

Forty-two notifications were received during the year. Satisfactory reasons were given in each case.

O. Notification of having laid out a Dead Body.

One notification received during the year.

P. Notification of liability to be a Source of Infection.

No notifications received during the year.

Q. Salaries Paid to Inspectors and Assistant Inspectors of Midwives in the District for their work under the Midwives Act.

£125 of the salary of the Medical Officer of Health, and the whole salary (£650) of the Medical Officer for Maternity and Child Welfare, who acts as Inspector of Midwives, is charged to the Maternity and Child Welfare Scheme, but no allocation has been made specially for the work done under the Midwives Act.

R. *General Report on Working of the Act.*

During the year the Act has worked smoothly in this area. Complaints have been received from the midwives that they have had great difficulty in recovering their fees, even in cases where it was ascertained that maternity benefit had been received.

It will be noted that in this area the midwives attended about 19 per cent. of the total confinements.

REPORT ON THE WORK OF THE MIDWIVES, 1923.

A total of 27 midwives gave notice of their intention to practise in Aberdeen in 1923.

A. *Number of Midwives.*

Of the 27 midwives, 11 were employed in connection with the Maternity Hospital, and during the year five of these left the Maternity Hospital, four of whom ceased to practise as midwives in this area, while the other was transferred to Burnside Home for Mothers and Babies, Westburn Road, Aberdeen. Two midwives were employed at Burnside Home, and one of these during the year went to the Maternity Hospital for duty there. One midwife was employed as Matron of Loch Street Home, Aberdeen. The remaining 13 midwives were engaged in practice on their own account.

STATE OF MIDWIVES.—Married, 6; widows, 5; single, 16.

QUALIFICATIONS.—(a) Certified by examination, 19; (b) registered by service, 8.

B. *Inspection of Midwives.*

On several occasions the midwives were interviewed by the Inspector of Midwives at the Public Health Office, when their bags, equipment, registers, and charts were inspected. These were found to be in a satisfactory condition on every occasion.

Visits without notice were paid to the houses of the midwives, when they were found to be clean and well kept.

C. *Suspension of Midwives.*

During the year it was not found necessary to suspend any midwife from practice.

D. *Births in Aberdeen.*

During the year 1923 there were 3,960 confinements in Aberdeen (this figure excludes abortions and miscarriages). In 61 confinements there were twins, which gives a total of 4,021 births (live, 3,862; still, 159).

Of the 3,862 live births:—

Male.		...	Female.	
Legitimate.	Illegitimate.		Legitimate.	Illegitimate.
1743	155	...	1798	165

Plus one male child found (uncertain whether legitimate or illegitimate).

Of the 159 still births:—

Legitimate.	Male. Illegitimate		Legitimate.	Female. Illegitimate.
73	6	...	73	7

In 147 confinements (live and still) the mother resided ordinarily outside the City.

The proportion of males to females was as 95 to 100 (registered births).

In 1912 it was	97
In 1913 „	108
In 1914 „	105
In 1915 „	101
In 1916 „	101
In 1917 „	102
In 1918 „	105
In 1919 „	105
In 1920 „	104
In 1921 „	106
In 1922 „	100

E. *Nature of Attendance at Birth.*

	Total No. of Confinements (excluding Abortions and Miscarriages).	TOTAL NUMBER OF BIRTHS.		Percentage of Confinements attended.
		Live.	Still.	
MIDWIVES (including cases in which Medical Assistance was summoned)	834	823	21	21
MATERNITY HOSPITAL—				
(a) In Wards . . .	427	399	35	11
(b) At Home . . .	128	130	2	3
MEDICAL PRACTITIONERS (excluding cases in which assistance given to Midwives) . . .	2568	2507	101	65
NOT ATTENDED AT TIME OF BIRTH	3	3	...	...
TOTAL	3960	3862	159	...

The midwives attended about 21 per cent of the total confinements. The number of confinements attended by the several midwives, excluding all Maternity Hospital cases, varied from 1 to 267.

F. *Premature Births (Live).*

Information regarding these is readily obtainable only from the practice of the midwives. In 30 cases, or 4 per cent. of the total confinements attended by midwives (excluding Maternity Hospital cases) the birth was stated to be premature.

G. *Still Births.*

A total of 159 still births (male, 79; female, 80) were notified during the year, and were distributed as follows in relation to attendance at birth:—

	No. of Live Births.	No. of Still Births.	No. of Still Births per 1000 Live Births.
MIDWIVES	823	21	25
MATERNITY HOSPITAL—			
(a) In Wards	399	35	88
(b) At Home	130	2	15
MEDICAL PRACTITIONERS	2507	101	40
NOT ATTENDED	3	...	...
TOTAL	3862	159	41

Sixty-five bodies of still-born children, or children who had only lived a few hours, were examined for spirochetes, which were found in seven cases, giving a percentage of 11. Arrangements were made to have the mothers of these children in which spirochetes were found, treated by their own doctors or at the V.D. Clinic.

Year.	No. of Still Births.	No. of Registered Births.	No. of Still Births per 1000 Registered Births.
1916	143	3596	40
1917	134	2946	45
1918	143	2794	51
1919	179	3458	52
1920	170	5010	34
1921	189	4336	44
1922	181	4038	45
1923	159	3847	41

II. Deaths of Infants within ten days after birth.

	Total No. of Live Births.	No. of Deaths under ten days.	Percentage of Deaths to Births.
MIDWIVES	823	22	3
MATERNITY HOSPITAL—			
(a) In Wards	399	21	5
(b) At Home	130	4	3
MEDICAL PRACTITIONERS	2507	69	3
NOT ATTENDED	3	2	67
TOTAL	3862	118	3

The causes of the foregoing deaths were as follows :—

Prematurity,	78
Atelectasis and diseases of early infancy,	9
Marasmus, debility, and icterus,	18
Congenital malformations,	5
Diseases of digestive system (including diarrhœa),	2
Convulsions,	3
Syphilis,	1
Other causes,	2
Total,	<u>118</u>

J. Deaths of Mothers.

As regards the deaths of women from any cause associated with pregnancy or child birth, including all such deaths whatever the precise cause, within four weeks after child-birth (or later if illness originated in the puerperium) there were in the whole City 24 deaths reported by the local Registrars. All these deaths were inquired into by the Health Visitors, or information regarding them was obtained from the attending medical practitioners, who kindly co-operate in giving the desired information.

DEATHS OF MOTHERS.

ATTENDED BY	No. of Confinements (including Abortions and Miscarriages).	No. of Deaths.	Percentage of Deaths to Confinements.
MIDWIVES	838	3	0.4
MATERNITY HOSPITAL.—			
(a) In Wards	468	7	1.5
(b) At Home	135	1	0.7
MEDICAL PRACTITIONERS	2568	13	0.5
NOT ATTENDED AT BIRTH	3	...	...
TOTAL	4012	24	0.6

CAUSES OF DEATH.

	ATTENDED BY.				Not Attended.	Other Institu- tions.	Total.
	Midwives.	Maternity Hospital.		Medical Practi- tioners.			
		In Wards.	At Home.				
Accidents of Pregnancy—							
Abortion, Miscarriage . . . . .	...	...	1	1	...	...	2
Uncontrollable Vomiting . . . . .	...	...	..	...	...	...	...
Ectopic Gestation . . . . .	...	...	...	...	...	...	...
Other Accidents of Pregnancy . . . . .	...	...	...	...	...	...	...
Other Diseases of, or Associ- ated with Pregnancy . . . . .	...	1	...	...	...	...	1
Puerperal Hæmorrhage	1	1	...	...	...	..	2
Other Accidents of Parturition . . . . .	...	...	...	1	...	...	1
Puerperal Sepsis	1	2	...	4	...	1	8
Phlegmasia Alba Dolens, Em- bolism (and sudden death) . . . . .	...	...	...	1	...	...	1
Albuminuria of Pregnancy . . . . .	...	...	..	...	...	...	...
Eclampsia	1	1	...	2	..	...	4
Other Diseases of or Associated with the Puerperium . . . . .	...	2	...	3	...	...	5
TOTAL	3	7	1	12	...	1	24

In one of the above cases death occurred before confinement took place. Abortion or miscarriage took place in four cases, and in six others labour was stated to have occurred prematurely.

Twelve patients died in their own homes, the other 12 in an institution. In five of the seven deaths which occurred in the Maternity Hospital, the patient had been sent in at the onset of labour owing to threatening or expected difficulty.

Four deaths were certified as due to albuminuria or eclampsia, and in none of these cases was evidence obtained that the urine had been examined in reasonable time for treatment to be undertaken.

As far as can be ascertained from the records, the confinement which proved fatal was the first in seven cases.

NOTIFICATION OF DEATH BEFORE MEDICAL ASSISTANCE OBTAINED.—One notification was received of the death of a mother before medical assistance was obtained. This death is referred to above.

During the year the deaths of three children before medical assistance was obtained were notified to the Department. In all cases the children only lived a few hours, and a doctor was sent for, but did not arrive before child died.

K. *Puerperal Sepsis.*

	No. of Confinements (including Abortions and Miscarriages).	No. of Cases.	Percentage of Cases to Confinements.	No. OF DEATHS.					
				-1	-2 (Weeks).	-3	-4	4+	To
MIDWIVES	838	3	0·4	...	...	...	...	1	1
MATERNITY HOSPITAL—									
(a) In Wards . . .	468	3	0·6	...	1	...	1	...	2
(b) At Home . . .	135	...	...	...	...	...	...	...	...
MEDICAL PRACTITIONERS.	2568	9	0·4	2	...	...	1	2	5
NOT ATTENDED . . .	3	...	...	...	...	...	...	...	...
TOTAL	4012	15	0·4	2	1	...	2	3	8

During the year a total of 15 cases of puerperal sepsis was brought to the notice of the Department as having occurred in the City. The above Table shows the incidence of cases in relation to the attendance at birth, with the relative mortality. Three cases occurred in the practice of certified midwives, one of which proved fatal. In all 11 cases received institutional treatment, and of these five recovered; of the four cases treated at home two recovered.

It is of interest to record that in nine of the above cases, in which the blood was examined bacteriologically, hæmolytic streptococci were found in four cases, all of which proved fatal. Of the five cases in which the blood proved sterile, four recovered and one died.

These bacteriological results and similar bacteriological findings in Aberdeen during the past few years prove that the presence of hæmolytic streptococci in the blood of a patient suffering from puerperal sepsis is of grave prognostic significance. Similar results have been obtained elsewhere.

YEAR.	PUERPERAL SEPSIS.			Death rate per 100 Cases.
	No. of Cases	Rate per 1000 Registered Births.	No. of Deaths.	
1914	24	5·9	15	63
1915	11	2·9	8	73
1916	11	3·1	5	45
1917	12	4·1	8	67
1918	8	2·9	6	75
1919	10	2·9	1	10
1920	13	2·6	5	38
1921	13	3·0	6	46
1922	16	4·0	13	81
1923	15	3·9	8	53

L. *Ophthalmia Neonatorum.*

During the year 63 cases of ophthalmia neonatorum were notified. These occurred as follows:—

	No of Live Births.	No. of Cases of O.N.	Percentage of Cases to Births.
In practice of:—			
MIDWIVES	823	32	4·0
MATERNITY HOSPITAL—			
(a) In Wards	399	2	0·5
(b) At Home	130	1	0·8
MEDICAL PRACTITIONERS	2507	28	1·0
NOT ATTENDED AT BIRTH	3	...	...
TOTAL	3862	63	2·0

Notifications of the above were as follows:—

MIDWIVES,	26
MATERNITY HOSPITAL—	
(a) In Wards,	1
(b) At Home,	1
MEDICAL PRACTITIONERS,	25
HEALTH VISITORS,	10
	—
Total,	63
	—

In 52 cases the discharge from the eyes was examined bacteriologically, and in five cases gonococci were found. In three of the 47 negative cases, pneumococci were found, and such cases are found to be resistant to cure. The 11 cases in which the discharge was not examined bacteriologically were slight cases, so it may be concluded that in 8 per cent. of cases a positive result was obtained, as compared with 13 per cent. in 1922.

In 15 cases, or 24 per cent. of all cases, the mother was stated to have had a vaginal discharge before confinement.

Five cases received partial treatment in an institution, 25 received out-patient treatment at the Royal Infirmary or Eye Institute, and 23 were treated at home.

RESULTS.

A complete cure was obtained in 61 cases. The other two cases died while under treatment, but in one of them the eyes were clear before death.

OPHTHALMIA NEONATORUM.

Year.	No. of Registered Births.	No. of Cases Notified.	Rate per 1000 Registered Births.
1914	4057	48	11.8
1915	3835	40	10.4
1916	3596	40	11.1
1917	2946	42	14.3
1918	2794	39	13.9
1919	3458	99	28.6
1920	5010	112	22.4
1921	4536	100	23.1
1922	4038	47	11.6
1923	3847	63	16.3

M. *Number and Nature of Cases occurring in 1923 in which the Midwives advised that a Registered Medical Practitioner should be sent for.*

Notifications were received from midwives of having in 195 cases sent for medical assistance. In all cases medical assistance was obtained, and in three cases it was found necessary to send for a second doctor.

In 131 cases the assistance was required for the mother and in 64 cases for the child.

SUMMARY OF CASES.

1. During pregnancy,	14
2. During parturition,	95
3. After parturition,	22
4. For infant,	64
Total,	195

The proportion of cases in which medical assistance was summoned, varied considerably for the different midwives:—

Reference No. of Midwife.	Total Number of Confinements <i>including</i> Abortions or Miscarriages.	Total Number of Confinements <i>excluding</i> Abortions and Miscarriages.	Total Number of Cases where Medical Assistance obtained.	Percentage of Cases where Medical Assistance obtained.
1	160	158	51	32
2	267	267	50	19
3	91	90	32	35
4	78	77	17	22
5	67	67	16	24
6	80	80	11	14
7	40	40	8	20
8	37	37	6	16
9	2	2	3	150
10	11	11	1	9
11	2	2	...	...
12	2	2	...	...
13	1	1	...	...
TOTAL .	838	834	195	23

FEES PAID.—Fees amounting to £181 7s. 6d. were paid to medical practitioners for the above services.

N. *Notification of Artificial Feeding.*

Thirty-six notifications were received during the year. Satisfactory reasons were given in each case.

O. *Notification of having laid out a dead body.*

One notification was received during the year.

P. *Notification of Liability to be a Source of Infection.*

Three notifications were received during the year.

Q. *Salaries paid to Inspectors and Assistant Inspectors of Midwives in the District for their work under the Midwives Act.*

£75 of the salary of the Medical Officer of Health and the whole salary (£650) of the Medical Officer for Maternity and Child Welfare, who acts as Inspector of Midwives, is charged to the Maternity and Child Welfare Scheme, but no allocation has been made specially for the work done under the Midwives Act.

R. *General Report on Working of the Act.*

During the year the Act has worked smoothly in this area. Arrangements have been made at the Child Welfare Centres for the examination of urine of patients sent by the midwives, and increasing advantage of such facilities is being taken by the midwives, especially in the case of first pregnancies.

Complaints continue to be received from midwives that they experience great difficulty in recovering their fees from patients.

PORT SANITARY SERVICES.

The Public Health (Port Administration, Infectious Diseases) Regulations (Scotland), 1921, made by the Scottish Board of Health, provide additions to the statutory conditions under which the Port Sanitary Services function. The new powers conferred by the Port Regulations are additional to the provisions of existing regulations with respect to the powers of the Local Authority and their Medical Officer of Health to ensure that infectious diseases shall not be introduced into this country from abroad; and accordingly the provisions of Section 54 (1) of the Public Health (Scotland) Act, 1897, which gives power to remove from a ship any case of infectious disease, and Section 47 (4) of the Public Health (Scotland) Act, 1897, which gives power to remove contacts from an infected ship, continue to apply, and so also the Regulations of 1907 relating to cholera, yellow fever and plague continue to apply in regard to the detention, quarantine, and other measures to be taken to safeguard the City from the introduction of these diseases. Article 3 of the 1921 Regulations gives power to *detain* a ship for visit and examination by the Medical Officer of Health, but for no other purpose. There is no power, for example, to *detain* a ship having on board an infectious disease other than cholera, yellow fever, or plague, until patients have been removed and the ship disinfected. Other important powers, in connection with persons who have been in contact with cases of infectious disease on board ship—short of actual removal—are specified in Article 4 (*b*), (*d*), (*e*) and (*f*) of the 1921 Regulations, including the power to prohibit any contact from leaving the ship save upon such conditions as may be specified in writing by the Medical Officer of Health and appear to him to be reasonably necessary to prevent the spread of infection in the district or elsewhere.

The Medical Officers available for the visitation of vessels are the Medical Officer of Health and the Resident Medical Officers of the City Hospital; and arrangements for expeditiously obtaining their services by day and night have long been in operation. The same observation applies to the Sanitary Inspector and his assistant inspectors, one of whom—a food inspector, who is also a fully qualified sanitary inspector—is charged, as part of his regular duties, with the visitation of vessels in respect of their sanitary condition as well as with the inspection of imported foods. There has always been full co-operation between the Health Officers and the Customs Officers; and the Medical Officer of Health supplies weekly to the Chief Preventive Officer a copy of the Weekly Record of the more serious infectious diseases in foreign and home ports, so far as known. The Customs Officers inform the Health Department by telephone, of the arrival of vessels requiring medical inspection, in accordance with arrangements with the Medical Officer of Health. There are no specially provided premises or waiting rooms for the purposes of medical examination, but no difficulty has been found in making such examination on board ship, or, in doubtful cases, by removal to the City or other Hospital. There are no specially provided premises for the temporary accommodation of persons, but sufficient

accommodation, when needed, has hitherto been obtainable at the City Hospital. Hospital accommodation for infected persons is provided at the City Hospital. Cleansing and disinfection of vessels is undertaken or supervised by members of the sanitary staff, and persons and articles requiring cleansing and disinfection are removed to the Cleansing and Disinfecting Stations attached to the City Hospital. The destruction of rats in ships is, where required, undertaken or supervised by the rat officers of the staff. The ambulances and other vehicles of the Health Department are available for the transport of persons or articles from vessels to the hospital and attached stations. The existing staff has been found to be sufficient to meet normal requirements, but if additional or special assistance, medical or other, is at any time required for emergency reasons, the Medical Officer of Health is, as hitherto, empowered to obtain it.

The above arrangements were approved by the Scottish Board of Health in 1922, and grant to the extent of 50 per cent. of approved expenditure is now made from Treasury sources.

In 1922, a total of 38 vessels were medically inspected. The majority of these inspections are required for ships coming from foreign ports, and British vessels are inspected when any cases of illness are reported on board. In 1923, 53 such vessels were medically inspected. The co-operation of the Customs officials in connection with the selection and examination of ships for medical inspection continues to be of the best description.

In pursuance of Section 7 of the Dangerous Drugs Act, 1920, the Dangerous Drugs (No. 3) Regulation, 1923, was issued by the Home Office, and is to the effect that if a foreign ship in any port in Great Britain requires to obtain a supply of any dangerous drugs in order to complete the necessary equipment of the ship, the master of the ship is authorised to purchase and be in possession of such quantity of any of the drugs as may be certified by the Medical Officer of Health of the port to be necessary for the purpose, the quantity not to exceed what is required for the use of the ship until it next reaches its home port. The certificate given by the Medical Officer of Health of the port has to be marked by the supplier with the date of the supply, and is to be retained by him and kept available for inspection.

VETERINARY SERVICES.

The activities of the Health Department that are subject for discussion under Veterinary Services fall into three main groups, viz.:—(1) Meat Inspection, (2) Milk Examinations, and (3) Inspection and Control of Dairy Herds in the City.

MEAT INSPECTION.

In 1923, the Scottish Board of Health issued the Public Health (Meat Inspection) Regulations (Scotland), 1923, under Part IV. of the Public Health (Scotland) Act, 1897, and Section I. of the Public Health (Regulations as to Food) Act, 1907. These Regulations came into force on 1st June, 1923, and are of great importance in defining the legitimate activities of the Health Department in securing adequate inspection and control of meat supplies intended for human consumption. The standard with which meat supplies in Aberdeen must comply in order to pass inspection has always been of a high order. In fact, the standard insisted on by the officials of the Health Department in past years has been perhaps more meticulous than the standard in vogue in other parts of the country. This superior standard of meat requirement in Aberdeen in past years was instituted in view of the fact that Aberdeen is one of the chief producing centres of the country for home-fed beef, and the high qualifying standard to which the method of inspection subjected meat production in Aberdeen has met with the general approval of the trade, and has perhaps been responsible in some small degree for the deservedly high reputation which is associated with meat production in Aberdeen.

The Public Health (Meat Inspection) Regulations deal, *inter alia*, with the inspection of meat, the licensing of slaughter-houses and the conduct of the work therein, and the authorisation to retail meat by certain classes of meat retailers, as also with the registration of all cold stores. In paragraph 3, sub-sections (1) and (2) of the Regulations, the qualifications requisite for persons who are to be appointed Meat Inspectors and Detention Officers respectively, are specified. In paragraph 6, sub-sections (1) and (2), it is laid down that the days and hours for slaughtering must be specified in the slaughter-house licence; and in the event of slaughtering being considered necessary beyond the hours specified, twenty-four hours' previous notice in writing must be given to the Meat Inspector. Under paragraph 10, the Town Council is empowered, after completing the prescribed procedure, to require any person, other than a person keeping open shop for the sale of meat or meat food products, who sells meat or meat food products within the City from any cart or other vehicle or from any basket, barrow, or booth, to apply to the Town Council for the necessary authorisation for this purpose. Under paragraph 11, it is the duty of the Town Council to keep a register of all cold stores within their area.

Having in view these requirements, the following recommendations were submitted to the Council:—

- (a) That the Medical Officer of Health and the Veterinary Inspector of the Town Council be appointed Meat Inspectors under the Regulations; and that the Sanitary Inspector, and the two assistant sanitary inspectors whose duties are wholly or mainly confined to food inspection, who all hold the Meat Inspector's Certificate of the Sanitary Association of Scotland, and who all have had the experience and training necessary to enable them to recognise any departure from the normal in the tissues of organs of a carcass, be appointed Detention Officers;
- (b) That the hours of slaughter specified on each licence be from 6 a.m. to 6 p.m. from Monday to Friday inclusive; from 6 a.m. to 1 p.m. on Saturday; and that slaughtering be not permitted from 1 p.m. on Saturday to 6 a.m. on Monday, except in such cases as are provided for in the Regulations;
- (c) That the Town Council, by resolution passed at a duly convened meeting, determine that the provisions of paragraph 10, viz.:—those relating to the need for authorisation being granted to any person selling meat from booths, vehicles, &c., be applied within the City; and
- (d) That, under paragraph 11, the Health Department be instructed to prepare and keep a register of all cold stores within the City.

On 3rd September, 1923, the Town Council adopted these recommendations, and passed a resolution determining that the provisions of paragraph 10 of the Regulations should be applied within the City as from 3rd December, 1923.

The Council are aware that there are five slaughter-houses in the City, and that by far the largest slaughter-house is that at Hutcheon Street, owned by the Flesher Incorporation. In arranging for the harmonious working of the Public Health (Meat Inspection) Regulations above referred to, several meetings were held with representatives of the Flesher Incorporation, with the result that the Incorporation agreed to provide free of rent a room in the slaughter-house for the use of the Department. It is only right to say that the arrangements made by the Flesher Incorporation to facilitate meat inspection have been of an admirable description, and that as regards Hutcheon Street slaughter-house, the arrangements for meat inspection are as adequate as they would be were the slaughter-house the property of the Town Council. The provision of accommodation for the staff of the Health Department has permitted the housing within the slaughter-house of a museum of meat specimens, unique in its character, and which provides instructional benefit to every one concerned with meat inspection and control.

The Council must not conclude, however, that the arrangements for meat inspection in Aberdeen are of a satisfactory description. On the contrary, it is impossible to secure adequate inspection with five private slaughter-houses in the City, and it has to be pointed out that Aberdeen is the only city of any magnitude that still permits the continuance of private slaughtering; and it is a matter of common knowledge that public opinion itself has advanced far beyond the stage where a multiplicity of privately owned slaughter-houses, incapable of being adequately supervised, can be regarded with equanimity.

In this connection, the following criticism of the slaughter-house system of Aberdeen, as set forth in the Report on an Enquiry into a Uniform System and Standard of Meat Inspection in Scotland by the Medical Officer of Foods of the Scottish Board of Health, dated 1921, is of interest, viz.:—"The only large town in Scotland which has not adopted the public abattoir system is Aberdeen—a most extraordinary anomaly when one considers the very high standard of administration in other matters in that city." The report goes on to say that "this is the more remarkable in view of the fact that Aberdeen is a very large meat exporting district, in ordinary times doing a large trade with London."

In actual practice meat inspection in Aberdeen is carried out by the Veterinary Inspector and one of the assistant sanitary inspectors, who is a detention officer.

In the opinion of Dr. Gerald Leighton, Medical Officer (Foods) of the Scottish Board of Health, reporting to the Medical Officer of Health on 20th November, 1924, on the results of the application of the Meat Inspection Regulations to Aberdeen, the increased powers have resulted in a 30 per cent. improvement in meat inspection and control.

The total number of animals slaughtered, and the number of carcasses seized in whole or in part, in the five slaughter-houses during the years 1922 and 1923, are set forth in the Table appearing on page 161.

Since 1st June, 1923, when the Regulations came into force, the number of animals killed in the five slaughter-houses in the City were as follows:—

Cattle.					Sheep.		Pigs.
Oxen.	Heifers.	Cows.	Bulls.	Calves.	Sheep.	Lambs.	
15,285	9,424	344	305	21	21,985	2,930	1,25

The following Table gives the number of carcasses inspected and the weight of meat seized as unfit for human food during the period 1st June to 31st December, 1923 :—

	Oxen.	Bulls.	Cows.	Calves.	Sheep.	Pigs.
Number of carcasses inspected, . . .	*	305	344	21	*	1,256
Number of carcasses seized wholly—						
(1) For tuberculosis,	38	3	41	1	...	14
(2) For other diseases,	19	...	27	3	31	19
Number of carcasses of which portions were seized—						
(1) For tuberculosis,	219	1	43	...	...	61
(2) For other diseases,	91	4	149	4	23	34
Total weight of meat seized, . . .	77,626 lbs.	2,451 lbs.	51,607 lbs.	595 lbs.	1,641 lbs.	5,590 lbs.

*Accurate figures as to the number of oxen and sheep carcasses inspected are not available. With five slaughter-houses to visit, it is impossible, as a routine, to inspect every carcass in detail. Every oxen carcass and every sheep carcass showing evidence of disease is, of course, thoroughly examined, and all carcasses of bulls, cows, calves, and pigs are inspected.

Complete and detailed records on special cards are kept of every carcass or part of a carcass condemned.

In no case were legal proceedings necessary before diseased meat was destroyed.

MILK EXAMINATIONS.

The increased statutory powers conferred upon the Town Council by the Milk and Dairies (Amendment) Act, 1922; the Milk (Special Designations) Order (Scotland), 1922; the Milk (Special Designations) Amendment Order (Scotland), 1922; the Public Health (Condensed Milk) Regulations (Scotland), 1923; the Public Health (Condensed Milk) Regulations (Scotland), 1923 (No. 2); and the Public Health (Dried Milk) Regulations (Scotland), 1923; are set forth in the part of the Report dealing with the Control of Food and Environmental Conditions (Chapter V.).

Bacteriological Control.—During the years 1922 and 1923, the Veterinary Inspector was responsible for such sampling of milk delivered in the City as is necessary to measure its bacterial contamination with a view to control. Samples were taken regularly during these years for the estimation of the general bacterial count and also for examination for tubercle bacilli. All samples were taken

SEIZURES IN SLAUGHTER HOUSES.

NAME OF SLAUGHTER-HOUSE.	NUMBER OF ANIMALS SLAUGHTERED.					A. SEIZURES FOR ALL CAUSES (INCLUDING TUBERCLE).										B. SEIZURES FOR TUBERCLE ONLY.									
						NUMBER OF CARCASSES SEIZED (WHOLE OR PART).										NUMBER OF CARCASSES SEIZED (WHOLE OR PART).									
	Cattle.		Calves.		Sheep.		Pigs.		Cattle.		Calves.		Sheep.		Pigs.		Cattle.		Calves.		Sheep.		Pigs.		
									Whole	Part.	Whole	Part.	Whole	Part.	Whole	Part.	Whole	Part.	Whole	Part.	Whole	Part.	Whole	Part.	Whole	Part.	Whole	Part.
Hutcheon Street.	34,278	72	35,414	2,159	179	364	3	4	37	8	27	77	133	227	...	...	...	...	...	...	...	9	46	...
Charles Street .	2,770	...	2,006	34	12	35	...	...	2	...	...	1	11	31	...	...	...	...	...	...	...	...	...	...
Deer Road .	2,357	...	1,258	4	8	24	...	...	...	...	...	...	7	23	...	...	...	...	...	...	...	...	...	...
Western Road .	1,802	...	298	13	15	43	...	...	1	...	...	...	10	37	...	...	...	...	...	...	...	...	...	...
Canal Place .	2,829	..	168	...	1	34	...	...	...	...	...	...	1	32	...	...	...	...	...	...	...	...	...	...
Totals for 1923 .	44,036	72	39,144	2,210	215	500	3	4	40	8	27	78	162	350	...	...	...	...	...	...	...	9	46	...
Corresponding Totals for 1922	38,697	91	56,230	2,940	236	444	9	4	52	10	19	12	206	294	2	...	...	...	...	...	...	4	...	...
Percentages of Seizures to Animals slaughtered in 1923					0.49	1.14	4.17	5.56	0.10	0.02	1.22	3.53	0.37	0.79	...	..	...	...	...	...	...	0.41	2.08	...
Corresponding Percentages for 1922					0.61	1.15	9.90	4.40	0.08	0.02	0.65	0.41	0.53	0.76	2.20	...	...	...	...	...	...	0.14	...	...

from milk immediately on its delivery in the City dairies from the producers. All examinations were carried out at the City Hospital Laboratory.

ABERDEEN.—BACTERIOLOGICAL EXAMINATION OF MILK SAMPLES.

Year	TUBERCLE.			GENERAL BACTERIA—No. in 1 c.c.							
	No.	Pos.	Neg.	No.	Not exceeding						Exceeding
					10,000.	50,000.	100,000.	250,000.	1,000,000.	5,000,000.	5,000,000.
1923	230	13	217	392	23	113	78	46	83	35	14
1922	219	11	208	478	18	140	70	63	104	55	28
1921	86	7	79	294	25	70	37	46	65	26	25
1920	165	6	159	298	42	67	22	33	44	40	50

In 1922, tubercle bacilli were found in 5·0 per cent. of the 219 samples examined, and in 1923, in 5·6 per cent. of the 230 samples examined. The examinations were made by means of guinea-pig inoculations. In every case where tubercle bacilli were found in the milk, an examination of the guilty herd was immediately made by the City Veterinary Inspector by courtesy of the Medical Officer of Health of the district in which the farm producing the milk was situated. The local Veterinary Inspector of the district was also present. In all such visits either a history was obtained of a suspicious cow having been removed from the herd between the date of sampling and the date of the visit of inspection, or further positive results were obtained from individual cows of the herd which showed induration of the udder and from which samples of milk were taken during the visit. In all cases the animals giving tuberculous milk were removed from the milking herd.

As regards the general bacterial examination of milk samples, it will be seen that in 1922, 47·7 per cent. of the 478 samples examined, and in 1923, 54·6 per cent. of the 392 samples examined of raw milk delivered at dairies within the City, did not contain more than 100,000 organisms per cubic centimetre. A monthly return of the general bacterial counts was sent to all Medical Officers of Health from whose counties milk is supplied to the City. Where bacterial counts were unduly and repeatedly high special visits were paid to the farms concerned by the Medical Officers of Health and sometimes by the City Veterinary Inspector in an endeavour to secure improvement. Such visits, as evidenced by subsequent tests, were attended with good results, since the opportunity was always taken of investigating and advising as to the methods of production with the farmer.

A card for every producer is kept in which is recorded the results of the examinations of the samples taken for tubercle bacilli and general bacterial count.

Chemical Control.—Sampling of milk and analysis of these samples, in order to control adulteration of milk and to ascertain the chemical quality of the milk, continue to be intensively carried out in relation to all milk supplies of the City. In this connection, an important report by the Interdepartmental Committee on the Laws, Regulations and Procedure governing the Sale of Milk in Scotland was issued in 1922. Mr. James Cumming, the Chief Sanitary Inspector, submitted to this Interdepartmental Committee evidence of the methods of procedure in Aberdeen, and the whole of that evidence is given in the Minutes of Evidence of the Interdepartmental Committee, also published in 1922. It is important here, however, to emphasise the great benefit that has accrued both to producers and consumers of milk from the methods of sampling and control practised during the past ten years in the City of Aberdeen.

Like all the other officials who gave evidence before the Committee, Mr. Cumming was in favour of a legal standard being substituted for the present presumptive standard, and this despite the fact that he had on numerous occasions found the mixed milk of a herd under the standard at the byre. He argued, however, that the causes of cows producing milk with less than 3 per cent. fat were all preventable; and that this was the opinion of the majority of the Committee is evidenced by the fact that one of their recommendations is that there should be a legal minimum limit both for butter fat and solids not fat in milk, and that meantime the figures of this limit should not be less than 3 per cent. fat and 8.5 per cent. other solids.

In all large cities, it has been the practice in recent years for the principal dairymen to visit the adjacent districts with their own motor lorries and collect the milk from their suppliers either at the roadside or at the farm. Consequently, as the law stands at present, it is impossible for the Sampling Officer of the district in which the milk is consumed to take a sample of the milk in the course of delivery to the consignee, as the place of delivery is beyond his jurisdiction. Mr. Cumming accordingly contended that additional powers should be granted to cope with this difficulty. The Committee, therefore, recommended that "the officials of the consuming Local Authority should be enabled to take samples of the milk 'at the place of delivery' when this place is within the district of any other Local Authority, if the two authorities have come to an arrangement to that effect. Failing such an arrangement, the consuming Local Authority should be enabled to call upon the other Local Authority to take samples on the lines of Section 21 of the Milk and Dairies (Scotland) Act, 1914."

Among the other points introduced by Mr. Cumming in his evidence were the following:—

- (a) The manner of conveyance of milk intended for sale for human consumption, including the proper fastening, sealing and identification of vessels used for such conveyance;
- (b) The regulation of the mixing of the milk in one such vessel with the milk in another such vessel;
- (c) The labelling or distinctive marking of the receptacles of milk for sale for human consumption;

- (d) The necessity for frequent and systematic sampling of the milk supplied by all producers, wholesalers, and retailers;
- (e) The necessity of taking, in cases where the milk of a retailer is found to be under the minimum limit, immediate steps to obtain a sample, or more than one sample, from the person supplying him;
- (f) Obstruction of Sampling Officer, or refusal to sell or supply to, a Sampling Officer, should be considered equivalent to an infringement of the minimum limit;
- (g) The penalties imposed in milk cases are inadequate, and do not act as a deterrent on the persistent offender; and
- (h) Expenses should be granted to a successful prosecutor or a successful defendant.

All these suggestions were considered and given effect to by the Committee in their recommendations.

A summary of the recommendations of the Committee is given in the Sanitary Inspector's Annual Report for 1922.

DAIRY HERDS IN THE CITY.

The number of these is showing a gradual decline. During the years under review, there were only twenty within the City boundaries. The average number of cows in the City byres was 195. The herds were inspected usually once a month. During 1922 five samples of milk were taken for examination from cows with induration of the udder, and during 1923 four such samples, but in no case were the results of microscopical examination or animal inoculation positive for tubercle bacilli. The sanitary condition of the premises, for which the Veterinary Inspector is responsible, was, on the whole, highly satisfactory.

LABORATORY SERVICES.

The Public Health Laboratories at the City Hospital have continued to supply modern bacteriological services during the two years under review. The demand for these services continues to increase, with the result that Dr. John Smith, City Bacteriologist, who originally gave part of his time to clinical tuberculosis, is now required to devote his whole time to bacteriology and clinical pathology.

In 1923, the Public Analyst, who held a part-time appointment with the Council, intimated his desire to retire from the employment of the Town Council, and, having in view the essential requirements of the Public Health Department in regard to additional chemical services, the following report was submitted to the Council:—

Public Health Department.

41½, Union Street,

Aberdeen, 11th June, 1923.

To the Public Health Committee.

Gentlemen,

Public Analyst.

In view of the fact that the present City Analyst is desirous of retiring from the employment of the Town Council, and that a successor will require to be appointed to carry on the statutory duties of the Analyst, it seems important to review at this stage the essential requirements of the Public Health Department in regard to chemical services.

The recent notable development in the science of nutrition has made the provision of expert chemical services an urgent requirement in a manner not contemplated even a few years ago. This development in nutrition has been made possible by the perfection of the process of indirect calorimetry and of the application of the biological test to nutritional problems. By the perfecting of these two methods of investigation, nutrition has now become an exact science. Thus it is no longer necessary to depend alone upon clinical observation, nor to wait for weeks or months in order to determine if any prescribed diet is having the desired effect. On the contrary, from the initiation of dietetic treatment the amount of food can now be accurately controlled; and not only so, but every constituent of the diet, the amount and nature of the proteins, fats, carbo-hydrates, salts, and accessory food substances, can be accurately regulated according to the individual requirements. If this is applied to the treatment of tuberculosis or of the wasting diseases of childhood, it will be seen that diet can be prescribed and its action immediately measured and controlled. This appears to be a matter of the utmost importance, in view of the fact that Aberdeen Town Council last year spent £30,000 on the treatment of tuberculosis and diseases of infants—the main essential of these services being dietetic treatment. Skilled chemical services are essential to carrying out this work.

In view of the fact that this newer knowledge of nutrition is now available, and having regard to the fact that the specimens submitted to the Public Analyst have averaged only 530 annually during the past five years (analytical work that would occupy only a very minor portion of any Analyst's day's work), it has seemed important in Aberdeen that the person to be appointed, while meeting the requirements of the Board of Health in relation to the work of a Public Analyst, should have the training that would make him fit to undertake in a full-time appointment within the City the duties of Analyst and Nutritional Expert.

It seems impossible to urge this point of view on the Committee too strongly. The control of food and drugs by the Public Analyst has little significance in regard to any effect on the public health. The Analyst's statutory services are clearly intended to prevent common fraud; but from the health point of view it is not of very serious significance whether a milk should

contain 2.9 per cent. of milk fat or 3.1 per cent.—the child receiving the diluted milk will make good the deficiency simply by consuming an extra quantity. On the other hand, the results that have already been achieved and that are definitely promised for the future by the application of the methods of nutritional science to the dieting of the sick and the well, can scarcely be over-estimated.

Unfortunately, the full development of such chemical and nutritional services in Aberdeen requires a definite extension of the City Hospital Laboratory, and while this provision will naturally be one of the first future City Hospital extensions, it will be obvious to the Committee, having in view the present financial stringency, that such a desired development is unlikely to be approved forthwith. It would be possible, however, to immediately accommodate a full-time bio-chemist in the existing bacteriological laboratory of the City at the City Hospital, until such time as a laboratory extension scheme can wisely be entered into.

It would appear expedient, therefore, having in view these future developments, that the Town Council should meanwhile make a temporary appointment of a full-time Analyst with the requisite qualifications, who would be able, in addition, to initiate some of the simpler nutritional tests. A temporary appointment meantime would prevent any delay in the full development of the nutritional laboratory when the time becomes opportune. Thus, with the full development of the laboratory, it might be considered expedient to appoint a man with a medical training in addition to the necessary chemical training.

In the event of the Town Council deciding to proceed to make such a temporary appointment, it was important to inquire whether the Board of Health would approve the procedure under Section 10 of the Sale of Food and Drugs Act, 1875, and the Board's letter, dated 16th May, 1923, herewith submitted, indicates that the Board would not object. It was important, moreover, to endeavour to determine whether a bio-chemist with the qualifications required by the Board for a Public Analyst was available for a temporary appointment, and reference to the attached correspondence indicates that such a man could be secured.

I am, Gentlemen,

Your obedient servant,

J. PARLANE KINLOCH,

Deputy Medical Officer of Health.

Accordingly, and with the approval of the Scottish Board of Health, Mr. Alex. B. Weir, B.Sc., A.I.C., was appointed City Chemist as from 21st August, 1923, on the following conditions:—

- (a) That he shall devote his whole time and attention to the services of the Town Council, and perform all the duties devolving on an analyst under the Sale of Food and Drugs Acts and the other Statutes referred to.
- (b) That he shall carry out the general chemical work of nutrition required in connection with the health services of the City.
- (c) That he shall perform such other duties in relation to chemical services as may be required of him by the Town Council.
- (d) That he shall not be at liberty to engage, either directly or indirectly, in private work.
- (e) That any fees which he may receive from members of the public for articles officially analysed by him shall be accounted for by him and paid over quarterly to the City Chamberlain.
- (f) That the duties referred to in (b) and (c) shall be subject to the control of the Medical Officer of Health of the City.

It has to be noted that the existing laboratories at the City Hospital were originally provided and extended to meet only the bacteriological requirements of the

Hospital. In 1920, the whole of the bacteriological work of the City was transferred to these laboratories. On the appointment of Mr. A. B. Weir as City Chemist, accommodation had to be found for him within the existing laboratories. It will be obvious, therefore, that the existing laboratories provide inadequate accommodation for the greatly increased laboratory services, and that new and extended municipal laboratories are required.

The following statements give in detail the number and results of examinations for the City of Aberdeen (including City Hospital) carried out in the City Hospital Laboratories during the two years under review:—

LABORATORY EXAMINATIONS FOR CITY OF ABERDEEN.

Year 1922.

	Positive.	Negative.	Total.	Grand Total.
<i>Diphtheria</i> ,	1113	8146	9259	9259
<i>Typhoid</i> —				
Widals,	19	37	56	
Blood Cultures,	4	14	18	
Fæces,	22	210	232	
Urines,	25	144	169	
			—	475
<i>Para-typhoid</i> —				
Widals,	1	105	106	
Fæces,	1	0	1	
Urines,	0	1	1	
			—	108
<i>Dysentery</i> —				
Agglutinations,	7	4	11	
Fæces,	3	15	18	
			—	29
<i>Venereal Diseases</i> —				
Spirochætal,	0	3	3	
Gonococcal,	3	9	12	
Wassermann,	40	129	169	
			—	184
<i>Tuberculosis</i> —				
Sputum,	615	2313	2928	
Urines,	2	49	51	
Fæces,	3	17	20	
Cerebro-spinal Fluids,	19	0	19	
Pus,	7	30	37	
Chemical Examination of Urines,	—	—	47	
Sputum for Organisms,	—	—	27	
			—	3129
<i>Carry forward</i> ,				13,184

	Total.	Grand Total.
<i>Food Poisoning—</i>		13,184
Brought forward,		
Samples of Meat,	4	
Sample of Fruit,	1	
Vomit,	2	
Fæces,	2	
Urines,	1	
Blood Cultures,	1	
<i>General—</i>	—	11
Chemical Examination of Urines,	25	
Bacteriological Examination of Urines,	8	
Cerebro-spinal Fluids,	62	
Cerebro-Spinal Contacts,	19	
Ophthalmia Neonatorum,	25	
Pus for Organisms,	75	
Blood Cultures,	31	
Blood Counts,	2	
Differential Leucocyte Counts,	12	
Malaria,	6	
Typing of Pneumococci,	8	
Vaccines,	19	
Weil-Felix Reaction,	1	
Rideal-Walker Test for Disinfectant,	1	
<i>Milk and Water Samples—</i>	—	294
Bacteriological Examination of Waters,	160	
Bacteriological Examination of Milks,	492	
Chemical Examination of Milks,	295	
<i>Animal Experiments—</i>	—	947
Guinea-pigs inoculated with milk deposit for tubercle bacilli,	217	
Guinea-pigs inoculated with sputum, pus, urines, &c., for tubercle bacilli,	41	
Guinea-pigs inoculated with B. diphtheriæ,	8	
Guinea-pigs inoculated with material suspected to contain B. anthracis,	6	
Guinea-pig inoculated with meat extract,	1	
Feeding experiments on rats,	39	
Feeding experiments on cats,	2	
Mice used in typing pneumococci,	19	
Rabbit inoculated with meat extract,	1	
Rabbits used in preparation of agglutinating with hæmolytic sera,	15	
	—	349
		14,785

LABORATORY EXAMINATIONS FOR CITY OF ABERDEEN.

Year 1923.

	Positive.	Negative.	Total.	Grand Total.
<i>Diphtheria</i> ,	563	5867	6430	6430
<i>Typhoid</i> —				
Widals,	23	54	77	
Blood Cultures,	7	21	28	
Fæces,	19	254	273	
Urines,	12	215	227	
<i>Para-typhoid A</i> —			—	605
Widals,	0	74	74	
Blood Cultures,	1	0	1	
Fæces,	2	11	13	
Urines,	2	11	13	
<i>Para-typhoid B</i> —			—	101
Widals,	1	73	74	
Blood Cultures,	0	1	1	
Fæces,	0	3	3	
Urines,	0	3	3	
<i>Dysentery</i> —			—	81
Agglutinations,	1	3	4	
Fæces,	0	16	16	
<i>Venereal Diseases</i> —			—	20
Spirochætal,	2	2	4	
Gonococcal,	8	13	21	
Wassermann,	52	117	169	
<i>Tuberculosis</i> —			—	194
Sputum,	610	2097	2707	
Urines,	3	44	47	
Fæces,	2	13	15	
Cerebro-spinal Fluids,	24	10	34	
Pus,	7	46	53	
Chemical Examination of Urines,	—	—	31	
<i>Food Poisoning</i> —			—	2887
Samples of Food,			5	
Fæces,			41	
Agglutinations,			14	
Blood Cultures,			4	
			—	64
<i>Carry forward</i> ,				10,382

		Total.	Grand Total.
<i>General—</i>			10,382
	<i>Brought forward,</i>		
Chemical Examination of Urines,		38	
Bacteriological Examination of Urines,		21	
Cerebro-spinal Fluids,		80	
Cerebro-spinal Contacts,		20	
Ophthalmia Neonatorum,		24	
Pus for Organisms,		102	
Sputum for Organisms,		44	
Throat and Nose Swabs for Organisms,		56	
Blood Cultures,		35	
Blood Counts,		9	
Differential Cell Counts,		12	
Malaria,		11	
Typing of Pneumococci,		23	
Vaccines,		35	
Fæces for Protozoal Examination,		2	
		—	512
<i>Milk and Water Samples—</i>			
Bacteriological Examination of Waters,		169	
Bacteriological Examination of Milks,		395	
Chemical Examination of Milks (to June),		367	
		—	931
<i>Animal Experiments—</i>			
Guinea-pigs inoculated with milk deposit for tubercle bacilli,		230	
Guinea-pigs inoculated with urine, sputum, and pus for tubercle bacilli,		20	
Rats fed on extract of squills,		17	
Mice used in typing pneumococci,		18	
Other animal inoculations,		6	
		—	291
			12,116

In addition to the above examinations for the City of Aberdeen, examinations were also carried out for the North-Eastern Counties within the Laboratory Services Scheme to the following extent:—During 1922, 1,768 examinations; and during 1923, 1,481 examinations.

CHAPTER V.

THE CONTROL OF FOOD AND ENVIRONMENTAL CONDITIONS.

CONTROL OF FOOD.

The increased powers for meat inspection and the methods of meat inspection carried out by the Veterinary Inspector and one of the Detention Officers, who gives his full time to this work, have been discussed in full under the section of the report dealing with Veterinary Services. So also the appointment of a full-time Chemist and City Analyst by the Town Council has been described in the section of the report dealing with Laboratory Services, and there can be no doubt that the provision of chemical services of this wider description has already greatly increased the efficiency of the methods by which the control of food is secured.

The Milk and Dairies (Amendment) Act, 1922, which came into operation on 1st September, 1922, further postponed the coming into operation of the Milk and Dairies (Scotland) Act, 1914. The 1922 Act requires the Local Authority to keep two registers of milk vendors—one of retailers of milk and the other of wholesale dealers and producers who do not sell their milk by retail. Registration of a retailer of milk can be refused, or the name of a retailer can be withdrawn from the register, if the Local Authority are satisfied that the public health is endangered, or is likely to be endangered, by any act or default in relation to the quality, storage, or distribution of milk. In accordance with Orders which were issued under the Ministry of Food (Continuance) Act, 1920, provision had already been made by the Scottish Board of Health for the issue of licences for the sale of two grades of milk, namely, Grade A (Certified) Milk, and Grade A Milk. The Milk and Dairies (Amendment) Act, 1922, now makes permanent provision for the sale of at least four grades of milk, namely, Certified, Grade A (Tuberculin Tested), Grade A, and Pasteurised; and it is made an offence to sell milk under these designations without a licence which is issued by the Local Authority. The Act makes it an offence to add any colouring matter, or water, or any dried or condensed milk or any fluid reconstituted therefrom or skimmed or separated milk, to milk intended for sale. It is also an offence for any person to sell as milk any liquid in the making of which dried or condensed milk has been used. An important provision in Section 5 of the Act prohibits the sale of milk from a cow suffering from tuberculosis of the udder. Any person is guilty of an offence if it is proved that he sold milk from a cow suffering from tuberculosis of the udder, and that he knew or could by the exercise of ordinary care have ascertained that the cow was suffering from that disease. The examination of milk samples for tubercle bacilli is an essential step in the process

of determining what herds are likely to contain cows suffering from tuberculosis of the udder. The Milk (Special Designations) Order (Scotland), 1922, and The Milk (Special Designations) Amendment Order (Scotland), 1922, specify the bacteriological and chemical standards for the special grades of milk. The Public Health (Condensed Milk) Regulations (Scotland), 1923, and The Public Health (Condensed Milk) Regulations (Scotland), 1923 (No. 2), make it an offence to sell any condensed milk intended for human consumption unless the milk is contained in a tin or other receptacle which is labelled in a specified manner, and unless the milk contains not less than the appropriate percentages of milk fat and other milk solids as laid down for each of the varieties of condensed milk. The Public Health (Dried Milk) Regulations (Scotland), 1923, similarly prescribe the labelling and composition of dried milk.

In addition to the supervision of milk and milk food products intended for sale for human consumption, the Health Department continues an extensive supervision of other foods—particularly those foods that are commonly purchased in a raw condition. Thus, the Fish Market is visited daily, and the quantity of fish destroyed as unfit for human food in 1923 was 9,588 lbs., as compared with 2,694 lbs. in 1922. The sale of fruit and vegetables, both wholesale and retail, is also under extensive supervision. So also considerable attention continues to be paid to the inspection of tinned foods, and all factories where such articles are prepared are regularly visited. Provision curing yards, wholesale warehouses, and shops are also subject to routine visitation.

ATMOSPHERIC CONDITIONS AND SMOKE ABATEMENT.

Weather and Disease.—In Table XXII. is summarised the state of the weather in Aberdeen for each month throughout the years 1922 and 1923, along with the average for the preceding twenty-five years.

In 1922, January was the coldest month, with a temperature of 37.8° F., the warmest month being July, with a temperature of 54.1° . In 1923, July was also the warmest month, the temperature being 58.3° , while December was the coldest month with a temperature of 37.8° . The difference in temperature between the coldest and warmest months in 1922 was 16.3° , the range of temperature in 1923 being 20.5° , which was considerably above the average for the years 1897-1921 (17.5°).

The mean temperature for the whole year in 1922 and 1923 was 45.7° and 45.9° respectively, the average for the preceding twenty-five years being 47.2° .

The mean daily range of temperature, or the difference between the highest and lowest for the day, averaged 9.7° in 1922, and 9.5° in 1923. The daily range was greatest on the average from May to September in 1922, with monthly means of 10.1° to 13.6° , and least in January, with 6.6° . In 1923, the monthly means in May to September varied from 11.1° to 12.8° , and the month with the lowest mean was February, with 5.0° , this latter mean being considerably below the least average figure for any month during preceding years.

As regards sunshine, in 1922, the month which enjoyed the most sunshine was May, with 192 hours for the whole month, or six hours a day, while the month with

the least sunshine was January, with 32 hours for the month, or one hour a day. During 1923, the month with the largest amount of sunshine was August, with 149 hours, or five hours a day; while the month with the lowest amount of sunshine was February, with 33 hours, or fully one hour a day. The total amount of sunshine for both years under review was considerably below the average for the preceding twenty-five years.

During 1922, the driest month was May, with 1.0 inches of rainfall, while January was the wettest, with almost four times that amount of rain. In 1923, June was the driest month, with 0.9 inches of rainfall, while the wettest month was February, with 5.1 inches. The total amount of rainfall during these two years, and particularly during 1923, is in excess of the average for preceding years.

In previous years, the most prevalent winds in Aberdeen have been from the south and south-west, the least prevalent being ordinarily easterly and northerly winds. In 1922, however, the most prevalent winds were from the north-west, and in 1923 from the west.

So far as can be determined, there is not any very easily discerned relationship between wind, temperature, and humidity, on the one hand, and diseases on the other hand, such as pneumonia and bronchitis, that are believed to be increased by exposure to cold and damp, beyond the broad fact that deaths from both these diseases are distinctly more numerous in the winter months of the year than in the summer months, this being specially true of bronchitis. Usually there is no definite relationship discernible between zymotic prevalence and climate conditions, beyond the usual seasonal changes, and it is possible that the seasonal changes in climate and the seasonal increases in zymotic diseases are both remotely related to the same cause. The organisms that permit epidemics of disease are little animals and plants that obey the same biological law of increase and decrease that governs all other living organisms. Probably the conditions that finally determine the period of growth or multiplication and the period of rest in all living organisms have their essential origin in meteorological variations, but the fact remains that the most careful scrutiny of meteorological variations and variations in zymotic prevalence ever since the measurement of such variations was available, has failed to reveal any definite relationship between meteorological conditions and the prevalence of the great majority of zymotic diseases.

Smoke Abatement.—During the years 1922 and 1923, a considerable improvement has been made in preventing the emission of black smoke from factory chimneys. In general, smoke abatement in so far as factories and workshops are concerned can be secured by the use of suitable fuel and the adoption of proper methods of stoking, including in some cases the introduction of mechanical stokers, provided that the boiler plant is not overtaxed; but in certain works the strain on the boilers is such that the introduction of special smoke consuming apparatus has been found the best practical means of obviating smoke nuisance. Recent experience of the functioning of modern smoke consuming plant in Aberdeen indicates that if an adequate apparatus is installed and properly supervised and worked, smoke nuisance can be eliminated. The main drawback in connection with the general application

TABLE XXII (B).—ABERDEEN.—METEOROLOGICAL RECORD FOR EACH MONTH (From King's College Observatory).

YEAR 1923.

MONTH.	BAROMETRIC PRESSURE (at 32° F. and Sea Level).			TEMPERATURE OF ATMOSPHERE.					Mean Daily Temp. of Ground (4 feet below surface).	RAIN-FALL		SUNSHINE.		* WIND.								Velocity	
	Absol-ute Highest	Absol-ute Lowest.	Mean Daily Range.	Absol-ute Highest	Absol-ute Lowest.	Mean Daily Temp.	Mean Daily Range.	Ground (4 feet below surface).	Dura-tion.	Amount	Dura-tion.	Percentage of possible Sun-shine.	N.	N. E.	E.	S. E.	S.	S. W.	W.	S. W.	Calm	Average No. miles per day.	
January, .	30.433	29.358	0.37	53.8	30.7	42.1	9.0	40.9	81	110	2.3	58	25	11	1	10	8	93	219	237	159	6	272
February, .	30.229	28.694	0.27	55.2	31.6	40.1	5.0	41.2	83	204	5.1	33	13	2	6	73	292	155	57	59	28	...	464
March, .	30.602	29.052	0.22	51.4	32.2	41.2	7.1	41.4	88	72	1.8	102	26	57	58	111	147	200	39	44	72	16	184
April, .	30.326	29.074	0.21	53.6	32.2	42.0	7.0	43.5	81	103	1.8	90	21	52	70	68	277	103	27	42	76	5	311
May, .	30.417	29.118	0.21	66.2	33.1	44.9	11.2	45.4	78	154	4.7	147	29	149	32	34	21	66	110	141	178	13	270
June, .	30.389	29.442	0.19	70.9	37.6	52.2	12.8	48.1	72	62	0.9	136	26	72	5	9	28	84	82	162	272	6	275
July, .	30.330	29.278	0.17	79.3	48.6	58.3	11.7	52.8	79	70	2.1	135	25	29	48	54	126	160	116	126	59	26	194
August, .	30.280	29.086	0.27	72.9	41.9	55.7	11.1	54.0	79	122	4.2	149	32	38	19	16	80	179	118	185	97	12	230
September, .	30.329	29.228	0.26	70.7	36.7	51.4	12.5	52.3	80	94	3.7	143	37	8	3	10	37	169	190	198	98	7	232
October, .	30.154	28.567	0.29	59.7	34.2	46.9	10.4	49.4	79	91	3.5	139	43	14	2	5	24	192	251	172	75	9	283
November, .	30.394	28.459	0.31	59.4	29.1	38.4	9.0	45.0	82	118	3.1	77	32	37	8	30	26	42	148	235	190	4	285
December, .	30.486	29.101	0.30	53.4	26.6	37.8	7.6	40.9	84	175	4.2	46	22	23	15	14	19	146	144	180	184	19	285
Monthly Average	30.364	29.038	0.26	62.2	34.5	45.9	9.5	46.2	81	115	3.1	105	28	41	22	36	90	132	125	148	124	10	274
Total for Year, .	...	...	...	...	...	...	...	...	...	1375	37.4	1255	331	492	267	434	1058	1589	1501	1781	1488	123	3285

AVERAGE FOR TWENTY-FIVE YEARS, 1897-1921.

January, .	30.54	28.81	0.31	52.0	26.1	38.7	7.7	40.4	80	86	2.1	43	19	23	10	21	85	165	202	144	94	0.1	242
February, .	30.49	28.85	0.28	52.0	24.8	38.9	8.3	39.6	80	76	1.8	73	28	24	17	25	65	171	148	126	101	...	229
March, .	30.35	28.88	0.26	55.1	26.7	40.1	9.1	40.1	78	103	2.3	109	30	47	31	47	95	142	137	120	124	0.2	239
April, .	30.47	29.04	0.23	60.1	30.3	43.3	10.2	42.2	78	84	2.0	157	38	50	45	51	96	147	96	110	126	0.1	217
May, .	30.44	29.24	0.19	66.7	34.7	48.0	11.1	45.8	78	83	2.4	183	37	74	57	84	134	149	73	69	104	0.9	189
June, .	30.38	29.42	0.16	69.9	39.3	52.9	11.3	50.4	77	64	1.7	183	35	73	59	79	111	131	74	67	133	0.4	181
July, .	30.34	29.40	0.16	72.6	43.2	56.2	10.9	53.2	78	75	2.8	154	29	65	49	82	107	133	80	83	144	1.9	163
August, .	30.29	29.31	0.17	71.6	42.4	55.6	10.7	54.3	80	76	2.6	141	31	48	47	67	103	151	100	96	133	1.3	164
September, .	30.42	29.22	0.20	67.8	38.4	53.0	11.0	53.0	80	72	2.1	125	33	36	24	39	87	173	119	114	129	0.5	181
October, .	30.44	29.06	0.24	61.3	32.9	47.9	9.3	50.3	82	101	2.8	91	29	34	22	38	104	195	128	108	75	0.3	211
November, .	30.46	28.84	0.26	55.5	27.1	42.5	8.2	46.3	82	102	2.8	55	23	26	9	24	69	164	164	155	107	0.1	228
December, .	30.40	28.75	0.30	52.7	24.8	39.6	7.8	42.7	82	115	3.3	36	18	20	8	26	76	173	198	155	92	0.1	234
Monthly Average	30.42	29.07	0.23	61.4	32.6	47.2	9.6	46.5	80	86	2.4	113	29	43	32	49	94	158	127	112	114	0.5	207
Total for Year, .	...	...	...	...	...	...	...	...	...	1037	28.7	1350	350	520	378	583	1132	1894	1519	1347	1362	5.9	2478

* To indicate the dominant direction, every duration of 100 hours and upwards is in thick figures.

of smoke consuming devices to works is the financial cost of installing such plant; but it is anticipated that there will be a continual increase in the installation of such apparatus as time progresses and as trade improves. The Smoke Abatement Bill, which is at present before Parliament, greatly increases the powers of Local Authorities to control nuisance from smoke. The existing powers in Aberdeen for securing smoke abatement are obtained under the Public Health (Scotland) Act, 1897, and the Aberdeen Municipality Extension Act, 1871. The increased powers, contained in the Smoke Abatement Bill would, in the opinion of the Sanitary Inspector and myself, adequately meet the requirements of Aberdeen.

HOUSING CONDITIONS.

The Board of Health, on 18th August, 1922, issued to Local Authorities a circular on Improvement of Insanitary Areas, intimating that the Government had decided to give a grant of £30,000 per annum in aid of expenditure incurred by Local Authorities in respect of the improvement of insanitary areas, this sum to be available each year during the period of repayment of the loans by way of contribution towards the annual expenditure of Local Authorities on these improvement schemes. The circular, at the same time, stated that Local Authorities who desired to participate in this special grant should proceed to review the conditions in the insanitary areas in their district and consider to what extent they would be justified in proceeding with the erection of new houses to rehouse persons who would be dispossessed by any proposed scheme of slum improvement, and also with the acquisition and reconstruction of existing houses on the lines indicated in the circular. On receipt of the circular, the Housing Committee remitted to the Medical Officer of Health, Sanitary Inspector, and Director of Housing to prepare and submit a report on the subject, and the following is an excerpt of the Report on Improvement of Insanitary Areas, dated 27th December, 1922:—

The three most insanitary districts in the City are those which can be defined as—

- (1) The Guestrow district, bounded by the west side of the Guestrow, the south side of the Upperkirkgate, from No. 15 to No. 47, thence in a straight line along Flourmill Lane to Netherkirkgate, and then along Netherkirkgate to its junction with Guestrow;
- (2) The Shuttle Lane district, bounded by the north side of East North Street, west side of Park Street, south side of Frederick Street, and east side of King Street; and
- (3) The Shoe Lane district, bounded by the north side of Queen Street, west side of West North Street, north side of Longacre, and west side of Shoe Lane.

All the houses in these areas, as about to be defined, are either unfit for human habitation, or the narrowness, closeness, bad arrangement, and want of light, air, ventilation, and proper sanitary conveniences are such as to render the houses dangerous or injurious to the health of the inhabitants. These three districts,

therefore, as amplified by the addition of certain insanitary houses contiguous to them, form Unhealthy Areas within the meaning of the Housing of the Working Classes Act, 1890, and we are of opinion that the most satisfactory method of dealing with the evils connected with them is by means of an Improvement Scheme. It is not necessary to record in full detail at this stage the evidence that has compelled us to this conclusion. It is generally known that the Guestrow area forms the remainder of a more extensive slum area which was cleared in part by the Marischal College extension and the Gallowgate Improvement Scheme.

In the Shuttle Lane area and Shoe Lane area, many formerly occupied houses have already been demolished or stand derelict at the instance either of the Health Authorities or of the owners of the properties, and in all three areas, and apart from congestion on the sites, the houses show such marks of age in their dilapidation, in their physical decay and lack of the essential adjuncts and appurtenances of a habitable house as clearly to indicate that they have previously served their day, and ought now to be abolished.

Guestrow Area.—Table No. I. shows that in the Guestrow district and vicinity there are 300 insanitary houses requiring to be dealt with. In the Guestrow district alone, there are 43 one-roomed houses, 80 two-roomed houses, 20 three-roomed houses, and 3 houses of four rooms and upwards, making a total of 146 insanitary houses. Within this district there is Cumberland House—a house of much historical and architectural interest—which is at present used as a lodging-house for men, and is in good repair, well lighted and ventilated. Within the district also is the Aberdeen Dispensary, a modern medical institution of the best description. These two buildings are excluded from the insanitary area. In the vicinity of the Guestrow district, viz., in Ragg's Lane, Blairton Lane, Broad Street, south-east part of Upperkirkgate, west side of Gallowgate, and Young Street, there are 52 one-roomed houses, 68 two-roomed houses, 27 three-roomed houses, and 7 houses of four rooms and upwards, making a total of 154 insanitary houses.

Shuttle Lane Area.—In the Shuttle Lane district and vicinity, there are 130 houses requiring to be dealt with. In the Shuttle Lane district alone, there are 39 one-roomed houses, 29 two-roomed houses, 17 three-roomed houses, and 5 houses of four rooms and upwards, totalling 90 insanitary houses. In the vicinity of this district, viz., on the south side of East North Street, in Justice Lane, and Gardener's Lane, there are 20 one-roomed houses, 17 two-roomed houses, and 3 houses of four rooms and upwards, making 40 insanitary houses.

Shoe Lane Area.—In the Shoe Lane district there are 54 one-roomed houses, 39 two-roomed houses, 9 three-roomed houses, and 3 houses of four rooms and upwards, giving a total of 105 insanitary houses. All these figures refer only to insanitary dwelling-houses; they do not include shops or stores, obstructive or otherwise.

Insanitary Houses outside Unhealthy Areas.—Outwith the areas mentioned, there is a large number of houses throughout the City which are unfit for human habitation. This number has increased greatly in recent years, since the closure of such houses has been prevented by the impossibility of providing alternative accom-

modation for displaced tenants. Details are given in Table II. of 564 individual dwellings throughout the City, beyond the unhealthy areas, which can be closed as soon as alternative accommodation is provided, but it is to be clearly understood that this number is no measure of the prevalence of such dwellings. The number could readily be greatly increased without encroaching on the minimum standard of sanitary fitness of a house, but it appears unnecessary to give further detail in view of the magnitude of the commitments which would be involved in dealing only with the samples provided.

Overcrowded Houses.—There is a large number of overcrowded houses within the City, and in Table III. details are given of 266 cases dealt with by the Health Department since 1st January, 1919, in which it has been found impossible to abate the overcrowding. Reference to Table III. clearly shows that overcrowding which cannot be abated, and as measured by a standard of 400 cubic feet of air space to the individual, is a definitely increasing proposition which must receive consideration in view of the duties imposed upon Health Officers. Prior to 1919, overcrowding which could not be abated was practically unknown, and its increasing incidence, namely, 16 cases in 1919, 64 in 1920, 89 in 1921, and 97 in the current year, as known to the Health Department, would appear to mark a new milestone on the road of Aberdeen's housing. Since it would serve no purpose intrinsic to this report, it has not been considered necessary to measure the social problems which accompany overcrowding, statutory or otherwise, wherever there is indiscriminate housing of sexes, adolescent or adult.

As is generally known, there is not a vacant habitable house to be got within the City, except where vacancies arise through tenants leaving. In view of the decrease of the population revealed by the recent census, the reason for this is not at once apparent. The population of the City, as enumerated in the 1921 census, was 158,963, the occupied houses were 36,209, and the number of rooms in the occupied houses was 116,862. Compared with the figures of 1911, the population shows a decrease of 4,928, the occupied houses show an increase of 50, and the occupied rooms a decrease of 213. On a standard of not more than three persons to a room, one-tenth of the population are now living in an overcrowded condition, as compared with about one-ninth in 1911. Further examination of the census figures, however, reveals that the average number of persons to each occupied house in 1921 was 4·39, as compared with an average of 4·53 in 1911, and that the average number of persons to each 100 rooms is now 136, instead of 140 in 1911. It might at first sight be assumed that the fall in average house-density or room-density of population would result in a corresponding diminution of statutory overcrowding within the City. This does not follow, however. As compared with the total number of inhabited houses in the City, the number of overcrowded houses is a very limited one, and accordingly the influence of overcrowding of a statutory nature in raising average room-density is unlikely to be appreciable; while, on the other hand, lowered average room-density together with limitation or cessation of building naturally aggravates overcrowding at the end of the housing scale. If the average number of persons per house had continued to be 4·53 as in 1911, then,

since there are 36,209 occupied houses, the population of Aberdeen would have been 164,026 in 1921 instead of 158,957, as is the case when the average number of persons per house has fallen to 4.39. In other words, this fall in the house-density—or room-density—of population means that the occupied houses are accommodating 5,069 less people than they would have under the 1911 average. It is evident, therefore, that the apparent housing relief afforded by the decrease in population has not provided accommodation to any extent for fresh tenants. It has been more than utilised in permitting diminution of room-density in established tenancies. It is unnecessary to discuss here the increasing appreciation of the value of good housing, the improvement in wages, and the alteration in family grouping which made this improvement possible in the early years of the war. The fact remains that, during the past decennium, occupied houses of one room and two rooms are 487 less, while those of three rooms and four rooms are 579 more, and that the larger houses for this purpose have been mainly found—not by the building of new houses, but in the habitable houses among the 1,812 houses which stood vacant at the 1911 census.

Sub-let Houses.—The number of sub-let houses serves to indicate the dearth of houses, and prior to the war there was practically no sub-letting in Aberdeen, apart from lodgers. In 1921, however, as disclosed by the census, 3.5 per cent. of all the houses in the City were found to have sub-let portions. Of houses of two rooms, there were 327 which had a room sub-let; of three-roomed houses, there were 324 which had sub-let portions; of four-roomed houses, 242; of five-roomed, 97; of six-roomed, 109; of seven-roomed, 82; of eight-roomed, 42; of nine-roomed, 27; of ten-roomed, 13; of eleven-roomed, 5; of twelve-roomed, 3; and of fourteen-roomed, 1; giving a total of 1,272 houses with sub-let portions. It is within the knowledge of the Department that a large amount of this sub-letting is secured at a cost quite in excess of the accommodation provided, and that in the vast majority of cases the sanitary conveniences are inadequate—even such an elementary requirement as a separate water supply not being available. There is in addition an unnumbered section of the people who are compelled to remain in lodgings, as apart from sub-let houses, owing to their inability to secure suitable houses.

Housing Requirements.—It is not considered necessary to discuss here the complex factors, of which the increase in the number of marriages would appear to be the most obvious, which have made the housing shortage so acute. In the report by the Finance and Public Health Committees on the Housing of the Working Classes after the war, adopted by the Town Council in 1917, it was estimated that probably not less than 1,500 houses would require to be erected within the four or five years immediately following the war to meet merely emergency requirements—an estimate which was raised to 4,000 and provisionally approved by the Board of Health in 1919 under the scheme dealing with the erection of new houses under the Housing and Town Planning Act. In all, 242 new houses have been erected or have been sanctioned under this scheme, out of the fifteen hundred to four thousand houses variously estimated. Under the financial provisions of the existing scheme for erecting new houses sanctioned under Section 5 of the Act of 1919, the

liability of the Town Council is limited to four-fifths of a penny on the valuation of the City, the remainder of the cost being met by the State. It may frankly be stated, however, that it is extremely unlikely that any further houses will be sanctioned under this scheme. The proposals contained in the Board of Health's circular appear to mark a complete reversal of the Government's statutory policy as enunciated by the Act of 1919, and it would appear that the State contribution will in the immediate future, so far as Local Authorities are concerned, be limited to an annual subsidy of £30,000 for Scotland, and that the Town Council will be required to contribute out of the rates the remainder of the cost of any scheme they may contemplate under the Housing of the Working Classes Act. Such an annual contribution of £30,000 for Scotland would little more than meet the annual interest and sinking fund on a capital sum of £600,000, and accordingly would only be adequate, as we shall show, to meet the needs of Aberdeen alone. Meanwhile the only other method of State assistance contemplated would appear to be the subsidising of the private builder.

If the foregoing partial measure of the housing requirements in Aberdeen be taken as a guide, then it is evident that 1,272 new houses would at once be absorbed merely in remedying sub-letting, without reference to compulsory lodgers. Further houses must be made available before the Health Department can fulfil its statutory duty of securing the abatement of overcrowding on a standard of 400 cubic feet of air space for each occupant. For the abatement of this overcrowding, as is indicated in Table III., 266 new houses are required. It thus appears that some 1,538 new houses are immediately needed solely to remedy sub-letting and abate overcrowding. These new houses are required quite apart from the houses which must be erected to provide alternative accommodation for occupants displaced by the closure of the insanitary houses which form the substance of this report. It has seemed important to give the above measure of other housing requirements in order to make it clear that no insanitary houses can be closed until alternative accommodation for displaced tenants is available, and to make it clear that closure of insanitary houses and the provision of new houses for the displaced tenants will afford no relief to the general housing shortage.

Type of New Houses.—In the three insanitary areas proposed to be dealt with under an Improvement Scheme, there are 535 insanitary dwellings, and beyond these areas details are submitted of 564 insanitary dwellings, making a total of 1,099 houses which can be dealt with whenever alternative accommodation is available. In the form of application accompanying the Board's Circular on Improvement of Insanitary Areas, the reconstruction of existing insanitary houses is clearly intended, and even one-apartment houses may be so provided. In such a one-roomed dwelling, reconstructed according to the Board's standard, a scullery, water-closet, larder, press, and cellar accommodation must be included. In reconstructed houses of two or more rooms, a bathroom must be provided in addition. It is to be clearly understood that these provisions apply to the reconstruction of houses and not to their repair. In connection with the repair of houses, reference may be made here to the recent decision in the Dunfermline Sheriff Court, in which

it was held that where it was proved that the work required by the Public Health officials did not constitute reconstruction, an owner had not the right to intimate that he would close the dwellings instead of carrying out the necessary repairs. On the standard of reconstruction, we are of opinion that none of the houses scheduled in Tables I. and II. is suitable for the purpose of reconstruction. It follows, therefore, that a total of 1,120 new houses, including accommodation for the occupants of 21 sub-let houses, fall to be provided to house the tenants that would be displaced from the insanitary houses. The Housing, Town Planning, &c. (Scotland), Act, 1919, Section 44, lays down a new standard of housing, namely, a minimum of three apartments, but probably because the occupants of insanitary property are not, as a general rule, able to afford the rents requisite for houses of such size, the Board of Health are prepared to authorise under the new proposals the erection of houses of two apartments with separate bath and water-closet, scullery, larder, press, and cellar accommodation. But the rental obtainable for such a two-roomed house would be, approximately, from £15 to £20, and reference to Table I. shows that the average rent of the one-roomed houses in the three different areas ranges from £4 5s. 1d. to £4 18s. 3d.; the rent of the two-roomed houses from £7 2s. 11d. to £7 14s. 3d.; and the rent of three-roomed houses from £9 4s. 10d. to £11 15s. 11d. Moreover, in a considerable number of cases, where the present rental does not exceed, say, £6 or £7, the accommodation required on a standard of 400 cubic feet per adult could not be less than three rooms, and the rental obtainable for a modern three-roomed house would be from, say, £25 to £30. It is obvious, therefore, that it will be impossible to provide accommodation in new houses at rentals suitable to the displaced tenants. The Town Council at present own a considerable amount of tenement property, and it might be possible to find tenants for the new houses from the tenants of these properties, thus setting free Town Council houses for some of the tenants from the slum areas. But the transference in these circumstances would be limited, owing to the financial difficulties indicated, and, notwithstanding every effort to house occupants of insanitary houses in houses vacated by tenants of the new houses, it is probable that the majority of the tenants in the slum areas would have to remain in their present houses until such time as the general movement of the population to better houses had set free houses with rentals within the means of the present slum dweller.

In view of the high rentals necessarily required for new houses conforming to the standard laid down by the Board, and in view of the urgent need for additional houses, it might conceivably be considered expedient for the Town Council, if they were prepared to forego their share in the £30,000 grant, to erect new dwelling-houses which did not comply with the modern standard in respect of a scullery, bathroom, water-closet, and press and cellar accommodation. But the Town Council, in the event of their proposing to erect new dwelling-houses under Part III. of the Housing of the Working Classes Act, would require to obtain the sanction of the Board of Health before they could borrow money for such a purpose, and similar restrictions would be imposed as to the type of house provided under this part of the Act. In the event also of private builders erecting houses with the aid

of a Government subsidy, similar restrictions would apply. Not only so, but even if private builders were prepared to erect houses without a subsidy, a similar standard would apparently be enforced, since under Section 42 of the 1919 Act, it is the duty of the Local Authority to make bye-laws for, *inter alia*, the provision of a water-closet, bath, scullery, larder, press and cellar accommodation for each new dwelling-house. It might, however, be argued, in view of the urgent need of houses and the high cost of construction on the modern standard, and in view of the fact that the Board have meanwhile resiled from the minimum standard of three rooms laid down in the 1919 Act, that representations might be made to the Board to permit further relaxation of the standard with special reference to sanitary and domestic conveniences. Few will be disposed to dissent from the view that the provision of a scullery and water-closet within the dwelling should be regarded as a minimal requirement. But, taking into consideration the present habits of many people, the need for the immediate provision of a bath with hot water supply is a more controversial matter. In this connection, there are two current points of view that deserve consideration. On the one hand, it is pointed out that the bathing habit is of comparatively recent development in modern communities, and has naturally originated among the well-to-do, who by reason of their circumstances, have been better able to secure the amenities of life. It is held that such salutary habits once initiated, tend to grow rapidly and to extend, and that it is reasonable to conclude that in another generation or two the provision of a bathroom will be one of the requirements of the vast majority of habitable houses. On the other hand, the view is expressed that while the provision of a bathroom may be regarded as ideal, there will always be a considerable section of the community who, by reason of their circumstances and training, will have little use for baths. If the former view is taken, then it necessarily follows that present working-class houses of a moderately good description, but without a scullery, bathroom, and separate water-closet, will require in time to be reconditioned *qua* sculleries, bathrooms, and water-closets, and since such reconditioning is structurally impossible in the great majority of existing tenement houses, it follows that the provision of these minimal requirements of decency and utility will present a problem that demolition alone can solve. Whatever view is taken, it is obvious that there is bound to be an increasing demand for houses of a modern standard, and since existing houses cannot for structural reasons be reconditioned to this standard, we deem it important, should it meantime be considered expedient to modify the modern standard in building new houses, that the houses should be so designed structurally as to be capable of future reconditioning. Plans and estimates have been prepared which indicate that houses with scullery, water-closet, and press and cellar accommodation, and in which baths can in future be readily installed can be provided at an increase in cost of under £20 per individual dwelling as compared with the house in which reconditioning to the modern standard is impossible. We give the foregoing opinion after careful consideration. We are fully aware, as our Report shows, of the urgent need for new houses as a preliminary to any attempt to deal with the large number of uninhabitable houses, to clear slum areas, or to relieve overcrowding. We are equally well aware of the present financial stringency,

and, as our Report will show, of the enormous financial commitments that even a beginning to such an enterprise will entail. Having all these points in mind, we venture to suggest that a transient amelioration of present urgent requirements can be purchased too dearly if it would further retard the necessarily slow and costly procedure by which housing reform may alone be attained.

Sites for New Houses.—The total area of ground required as sites for new houses must at present be determined on the basis of not more than 24 houses per acre—the standard laid down by the Scottish Board of Health for tenement houses—and, thus calculated, the provision of 1,120 new houses would require a total of some 46 acres of land. Certain lands, to the extent of over 18 acres, already belonging to the Town Council, and eminently suited to the purpose, so far as can at present be determined, could be made available, and comprise—

- (1) A site at Torry, extending to 17 acres, and capable of taking 408 houses. This site was acquired as part of the site required to accommodate 500 houses, of which 242 houses are erected or about to be erected under the present scheme for providing new houses, and is capable of taking the tenemented houses suggested without prejudice to the existing plans;
- (2) A site at Whitehall Place, extending to nearly an acre, and capable of taking 22 houses;
- (3) A site in Willowbank Road, extending to half an acre, and capable of taking 12 houses; and
- (4) A site at Hilton, Kittybrewster, extending to fully 28 acres, and capable of taking 678 houses, which site, although not owned by the Town Council could be acquired, and has already been surveyed as a possible site for houses for the working classes.

These four sites, amounting in all to 46 acres, and capable of accommodating 1,120 houses, are either contiguous to the industrial areas of the city or have ready access to tramway facilities. They appear to us in all the circumstances to offer the best sites for new houses.

We are not satisfied, however, that a maximum of 24 tenemented houses to the acre is a final standard which cannot be relaxed without serious detriment to the amenities of the houses and their surroundings. On the contrary, we are of opinion that this standard, providing as it almost necessarily must if the ground is to be utilised in the best way, a garden for every house, without reference to the desire of the tenant, might readily result in much of the ground becoming so neglected and waste as to detract greatly from the environmental amenity. The proved success of the City Garden Allotment Scheme might be advanced as an expression of the desire for garden accommodation on the part of the citizens, but, on the other hand, the allotment scheme might be regarded as fulfilling this requirement, and, in either case, we are inclined to believe that if the measure of 24 houses to the acre was increased by half, it would still be fully sufficient. To this end, a tentative lay out of land, showing 36 tenemented houses to the acre, has been prepared, and, in view of the saving that would accrue from such an arrangement, and for the reasons indicated, it may be thought desirable that inquiry might be made as to whether

the Board of Health would be prepared to allow some such relaxation of the existing standard.

Utilisation of Cleared Sites and Town Planning.—In indicating the sites that could best be utilised for new houses, we have deliberately refrained from suggesting that houses should be built on any of the ground that would eventually be cleared by the demolition of houses in the three insanitary areas. Even if all the cleared ground were utilised, only an insignificant number of new houses could be accommodated, and in all the known circumstances, it appears best that the ground should meanwhile be utilised for the provision of open spaces and playgrounds for the recreation of the surrounding inhabitants. Such an arrangement would have the additional advantage of leaving the ground of the Guestrow area available for future City improvements. So also the leaving of the cleared Shuttle Lane and Shoe Lane areas as open spaces seems wise in present circumstances. Whether they would remain so permanently, or could better be utilised, can only be determined after the completion of a Town Planning Scheme for the City, wherein the allocation of areas for the purposes for which they are best suited (zoning)—whether industrial, business, residential, or as open spaces—is specified. Under the present provisions of the Housing and Town Planning &c. (Scotland), Act, 1919, such a completed scheme is called for by 1st January, 1926, and the magnitude and complexity of the issues involved in the preparation of such a scheme for Aberdeen are such as to tax to the utmost every service necessary to the science and art of Town Planning. We venture to point out that the present conditions requiring slum clearance schemes have arisen largely from an entire want of Town Planning. Present building bye-laws regulate the height and contiguity of dwelling-houses, but afford no protection from the interposition of works or other business premises obstructive to adjacent dwelling-houses—an interposition which has been in the past and continues to be one of the most fertile factors in creating insanitary areas. Without a Town Planning Scheme, power to amend building bye-laws with a view to preventing this continuing deterioration of residential areas could only be secured by fresh and probably contentious legislative enactment, while the approval of a Town Planning Scheme would provide a prevention for all time to come. Such a scheme, together with a comprehensive system of dealing with houses in one area after another rather than being limited to the random closure of individual houses and the leaving of them derelict throughout the City, would appear to offer eventually a practical solution of the housing problem in Aberdeen.

Estimated Cost of Scheme.—As will be seen from the information contained in the accompanying Form of Application, the estimated total cost of the scheme amounts to £587,500.

The estimated amount of the annual loan charges (including Sinking Fund) is £26,775.

The revenue from rents, after allowing for the annual charges, is estimated at £10,450.

The estimated annual loss on the scheme is £16,375, being equivalent to a rate of approximately 3d. per £.

The Town Council, having considered the terms of the above report, determined, at their meeting on 3rd January, 1923, to proceed with a third part of the scheme as a first instalment, and instructed the officials to report on the procedure necessary for the carrying out of the scheme; and the following is an excerpt of a supplementary report in this connection, dated 6th April, 1923:—

The Town Council's Scheme for the Improvement of Insanitary Areas requires the preparation of an Improvement Scheme, as defined in Part I. of the Housing of the Working Classes Act, 1890—a procedure which necessarily entails months of preparation of statistical data as a preliminary to the Scheme receiving the Board's sanction and to progress being made. In view of the delay that would thus be occasioned, and in view of the fact that the first requisite of the Scheme is the erection of new houses to provide alternative accommodation for the tenants of the slum areas, we are of opinion that the Town Council should meanwhile proceed under Part III. of the Act of 1890 to provide new houses, since no special procedure is necessary under this part of the Act as applicable to Aberdeen. This would permit the Town Council to make immediate progress with the provision of additional houses, and to proceed with the elaboration of an Improvement Scheme in due course. In the event of the Town Council electing to proceed in the manner indicated, we deemed it important to inquire whether the Board of Health would approve the procedure. The Board's letter, dated 16th March, 1923, herewith submitted, indicates that the Board would not object.

Number and Type of Houses.

In the Board's letter of 16th March, it is pointed out that, if the Town Council decide to proceed as proposed, the Board will require to be furnished with a statement showing the number and types of houses to be erected. To carry out the complete scheme involves the erection of 1,120 new houses, at an estimated cost of 3d. per £1 on the rateable value of the City; and, in terms of the Town Council Minutes of 3rd February, the Council have decided, as a first instalment, to carry out immediately one-third of the complete Scheme. This means that some 373 new houses fall to be provided under this first part of the Scheme. Under the complete Scheme, some 955 two-apartment houses are specified, and in all the circumstances we are of opinion that all the houses to be erected under the first instalment of the Scheme should be two-apartment tenemented houses of three storeys.

Sites for New Houses and Number of Houses per Acre.

The Board's letter, dated 16th March, also points out that a map or plan will require to be submitted to the Board showing the location of the sites where it is proposed to erect the new houses and the number of houses per acre which it is proposed to place on the ground.

Reference to our previous report, dated 22nd December, 1922, shows that sites at Willowbank Road, Whitehall Place, and Torry, already belonging to the Town Council, and a site at Hilton, Kittybrewster, appear to us to offer the best available sites for the new houses

Reference to our previous report also indicates, with reasons, our opinion that the Board should be asked to sanction 36 houses to the acre, instead of 24 houses, which is the present standard of the Board for tenemented houses.

Type Plan of Minimum Size of House.

The Board's letter of 16th March further indicates that a plan will require to be submitted to the Board showing the minimum size of house which the Town Council are to erect, and we have already stated our view—that the houses should be of the two-apartment tenemented type, of the dimensions shown in the accompanying plan (Plan No. I.). In this connection the Board have prepared a type plan of a two-apartment flatted house, a copy of which is attached (Plan No. II.), and the Board desire to draw the particular attention of the Town Council to the following points:—

- (1) The standard of construction and height of ceilings is the same as in the houses erected under the Local Authority's scheme under Section 1 of the 1919 Act.
- (2) A bathroom is not included, the bath being provided in the scullery, where it may, if desired, be covered with a movable or hinged cover. The sink and bath are fitted near the living room fire, thus securing a saving in the fittings for hot water.
- (3) The w.c. is in a separate apartment.
- (4) No washtub is provided, the intention being to provide a large deep sink.
- (5) A chimney stack for the bedroom is not provided, but, where gas is available, a gas fire can be installed.

In the present urgent housing and financial emergencies, two widely divergent points of view prevail within which present housing policy must be determined. On the one hand, it is urged that the need for improvement in the standard of housing is so great that no relaxation of the modern standard is justified. On the other hand, the view is expressed that the present financial situation is such that only elementary housing provision can meantime be met. Faced with this dilemma, the Board have apparently taken a middle course, and recommend that economy and the requisite sanitary conveniences be secured by placing the bath in the scullery, so eliminating the bathroom; and that by providing a large, deep, household sink the washtub can be dispensed with. We are of opinion, however, that a bath installed in the scullery lacks the first essential of adequate bathing facilities—namely, privacy. Thus placed, the tendency will be for the bath to form a receptacle for household rubbish or to become an accessory coal bunker. As regards the proposal to deepen the sink so that it may serve the dual purpose of sink and washtub, certain points emerge. In the majority of the families which will occupy the new houses there will be a young child whose constantly contaminated diapers require continual washing out. It scarcely appears seemly that the deepened sink, which is also required for the preparation of food and washing of dishes, should be utilised for such a purpose. The incidence of infectious diseases in children must also be kept in mind, and the deepened household sink is the only tub provided for washing infected linen and other fomites. For these reasons we venture to

suggest that the arrangements as depicted in the Board's type plan for two-apartment flatted houses have no hygienic sanction and should not be adopted by the Town Council.

If the foregoing opinion is endorsed, then two alternatives are available. Either the case for a modern standard of housing is such that a bathroom and scullery should be provided in each two-apartment tenemented house, or the need for economy is such that the bath should be eliminated. In this connection it was important to ascertain the views of the Board of Health should either of these alternatives commend itself to the Town Council. We accordingly communicated with the Board and in their letter dated 31st March, 1923, herewith submitted, the Board state that, while they would prefer that bathing facilities should be provided, they would not insist on this as regards the two-apartment houses, if the Council were of opinion that the bath should be eliminated. They further state, with reference to houses with bathrooms, that the erection of a better and more expensive type of house than that shown on the Board's plan is a matter which the Board will leave entirely to the discretion of the Local Authority.

In this connection, certain practical considerations of planning indicate that space for a bathroom can be found without extra expense, provided that the two living apartments are of proper area and proportion. The requirements for the living room are 180 square feet of area, and of the bedroom, 150 square feet of area. It will be found that behind these two rooms there is sufficient space to provide for the stair and also to provide for a scullery, with sink, washtub, gas cooker, food store, and coal store, and also a bathroom containing a water-closet.

In order that the Town Council might have all relative information before them before coming to a decision on this matter, plans and estimates have been prepared, which show that the additional expenditure incurred by the provision of bathrooms in two-apartment tenemented houses works out at £26 per individual dwelling. In other words, 396 dwellings without bathrooms could be erected instead of 373 with bathrooms, at the same cost.

In the Scheme for the Improvement of Insanitary Areas, the Town Council are committed to an expenditure which will have to be met mainly out of City rates. In our previous report, dated 22nd December, 1922, we indicated that the tenants in the slum areas will be unable to afford the current rentals obtainable for new houses, and will have to remain in their present houses until such time as the general movement of the population to better houses has set free houses with rentals within the means of the present slum dweller. In that report we also stated both sides of the controversy relating to the provision of bathrooms in new tenemented houses, having regard to the fact that the vast majority of existing tenemented houses have neither sculleries nor bathrooms, and cannot for structural reasons be reconditioned to provide these modern requisites. In our previous report also we submitted evidence of the urgent need for additional houses outwith the houses that fall to be provided under the present Scheme, namely, the additional housing provision necessary to relieve the present shortage of houses, which will come under the consideration of the Town Council at an

early date, following the recent announcement by the Government that they are prepared to contribute a subsidy of £6 per house for twenty years as a contribution to whatever housing schemes Local Authorities may embark on apart from the present schemes for improving insanitary areas. Having all these points in mind, we ventured in our previous report to express the view that an increased number of new houses of an inadequate description can be purchased too dearly if their provision further retards reasonable and permanent housing reform.

Other Alternative Accommodation.

If it is admitted that the new houses to be provided under this Scheme will naturally be occupied by such present tenants of two-apartment houses as are able to pay the higher rent, and that houses for the slum tenants will be found by a gradual upward movement of population, then it necessarily follows that the new houses should not, so far as the Town Council are concerned, be utilised directly or indirectly in providing houses for tenants displaced by the need for expansion of any other department of municipal enterprise. In other words, the adoption of this arrangement commits the Town Council to the principle that the cost of providing alternative accommodation for displaced tenants must be a charge on the Municipal Department whose expansion requires the demolition of existing houses.

In terms of the Council Minutes of Council of 16th April, 1923, the following recommendations were adopted:—

- (a) That the Council should adopt the supplementary report now submitted, and resolve to proceed with one-third of the proposed Scheme under Part III. of the Housing of the Working Classes Act, 1890.
- (b) That, for the purpose of providing alternative accommodation for tenants displaced, the Council should erect 373 dwellings of two apartments each, with bathroom, w.c., and scullery for each dwelling.
- (c) That the new houses should be three storeys in height, with accommodation for six tenants in each house.

Further developments in connection with the scheme for the improvement of insanitary areas will be recorded in due course.

DRAINAGE.

In a circular, dated 28th August, 1922, on Rivers Pollution Prevention, the Scottish Board of Health requested that a detailed survey should be made of all sources of pollution of streams in the area of the Local Authority, distinguishing the various kinds of pollution, *e.g.*, from trade effluents, from pit water and coal washings, and from sewage, and a complete survey of the methods of sewage disposal in the Local Authority's area was also requested. In this connection, two forms of inquiry (Forms A and D) were forwarded by the Board, to which the Local Authority were asked to submit replies. Form A dealt with the system of disposal of the City's sewage, and Form D dealt with sources of river pollution. With regard to Form D, containing the inquiries concerning sources of river pollution, the Board suggested that the Town Council should instruct the Medical Officer of

Health and Sanitary Inspector to make the investigations necessary to complete the return. The information forwarded to the Board is herewith submitted:—

DRAINAGE RETURN.

Form A. Burghs.

BURGH OF ABERDEEN.—Population, 158,700.

1. State approximately—

(a) Total daily dry weather flow of sewage.

1. (a) The total dry weather flow of sewage amounts to 10,218,450 gallons in the 24 hours, comprising—
 - (1) 7,041,900 gallons per day, discharging at the Main Outfall, Girdleness.
 - (2) 2,049,900 gallons per day, discharging at the High Level Abercrombie's Jetty Outfall.
 - (3) 364,344 gallons per day, discharging at the Low Level Abercrombie's Jetty Outfall.
 - (4) 464,364 gallons per day, discharging at the Low Level Outfall east of Victoria Bridge on north side of Dee.
 - (5) 43,968 gallons per day, discharging at the Low Level Outfall east of Victoria Bridge on south side of Dee.
 - (6) 253,974 gallons per day, discharging at the Dock Outfalls from the Harbour Commissioners' Area.

(b) Total daily water supply, including water for domestic purposes, and water for trade and commercial purposes so far as entering the sewers.

(b) The total daily water supply as provided by the City Water Department averages 7,000,000 gallons per day, and largely reaches the sewers.

The Donside Paper Mills, within the City, take 500,000 gallons of water per day directly from the polluted waters of the Don for manufacturing purposes. This supply is purified by chemical precipitation, sedimentation, and filtration. About three-fourths of the filtered water is used for paper making, the remainder being used up in generating steam for power plant. The effluent from the mills, after purification, is discharged into the town sewers.

In addition, some works make use of an indefinite amount of water obtained from deep wells within the City.

2. State whether the sewage is discharged into (a) the sea; (b) a tidal estuary; (c) a water-course, stream, or river; or (d) a lake or inland loch.

2. The Main Sewage Outfall at Girdleness (1 (a) (1)) discharges into the sea.

The High Level Abercrombie's Jetty Outfall (1 (a) (2)) and the Low Level Abercrombie's Jetty Outfall (1 (a) (3)) discharge into the tidal estuary of the Dee.

The Low Level Outfall east of Victoria Bridge on the north side of the Dee (1 (a) (4)), and the Low Level Outfall east of Victoria Bridge on the south side of the Dee (1 (a) (5)) discharge into the tidal waters of the River Dee, as sanctioned by a Home Office Order of 1879.

2. (continued).

The Dock Outfalls (1 (a) (6)), two in number, from the Harbour Commissioners' Area, discharge into the tidal harbour and tidal river as above defined.

3. (a) Have works been installed for the treatment or purification of the sewage before discharge?
 (b) When were such sewage works originally constructed?
 (c) Have they since been extended? and when?
 (d) Is any extension of the works at present in contemplation?
3. No sewage purification works have been installed. The untreated sewage is discharged into the sea, the tidal estuary of the Dee, or the tidal River Dee.
- 4 Describe in detail the means adopted for the treatment or purification of the sewage.
4. The City of Aberdeen, with the exception of the district of Torry, lies wholly between the estuaries of the Rivers Dee and Don, on the shore of the North Sea, and at the extreme south-east corner of Aberdeenshire. The extensive scheme for the remodelling of the sewerage of the City by carrying the sewage beneath the River Dee and through the hill behind Torry to the Outfall into the North Sea at Girdleness Point, sanctioned by the Aberdeen Corporation (Sewage) Act of 1899, was completed in its main outlines in the beginning of 1911. By the completion of this scheme, practically the whole of the sewage from the City, with the exception of two low-lying areas—one situated east of the Shiprow and Park Street (marked Eastern District and coloured yellow in accompanying map of the Aberdeen Sewerage Works), and the other situated between South Market Street and Dee Village (marked Low Level Area and coloured blue in map)—is now being discharged at Girdleness Point (No. I., Ordnance Survey Sheet), where the tidal currents prevent any sensible pollution of the foreshore opposite the City. The sewage from the Eastern District is discharged into the tidal estuary of the Dee at Abercrombie's Jetty by a High Level Outfall (No. II., Ordnance Survey Sheet), and by a Low Level Outfall (No. III., Ordnance Survey Sheet). The Low Level Area between South Market Street and Dee Village is served by two sewers discharging into the tidal waters of the River Dee east of Victoria Bridge, one with its outfall on the north side of the River (No. IV., Ordnance Survey Sheet), and the other on the south side (No. V., Ordnance Survey Sheet). In terms of a Home Office Order of 1879, the discharge of sewage within this tidal area of the River Dee is sanctioned. The sewers within the area of the Harbour Commissioners and under their jurisdic-

4. (continued.)

tion, having two outfalls—one at Midchingle Road (No. VI. A, Ordnance Survey Sheet), and the other at Commercial Quay (No. VI. B, Ordnance Survey Sheet)—similarly discharge into tidal waters.

In accordance with powers obtained under the 1899 Act, and in terms of an agreement between the Dee District Fishery Board and the Town Council, storm water overflows from the City sewers have been provided, discharging into the Dee at various points (No. VII. (A), (B), (C), (D), (E), and (F), Ordnance Survey Sheet). It is to be noted that Newlands Burn (No. VII. (F), Ordnance Survey Sheet), taking storm water within the City, receives in addition unpurified sewage from some thirty-five houses in the Mannofield area of the Aberdeen District of the County of Aberdeen.

Sewage from the following premises within the City is discharged into the tidal waters of the Dee, without entering the main sewers. The offices of Ferryhill Foundry are so situated that they cannot be drained by gravitation into the main sewer, and the sewage from three water-closets in the building discharges directly into the Dee (No. VIII., Ordnance Survey Sheet). The urinal in the Duthie Park, which is remote from and below the level of the main sewer, drains into a cesspool, the overflow of which discharges directly into the Dee (No. IX., Ordnance Survey Sheet). The sewage from some forty water-closets in Union (Envelope Making) Works passes into the Denburn, and ultimately discharges into the Upper Dock (No. X., Ordnance Survey Sheet), which communicates with the tidal waters of the Dee. The Union Works are situated at so low a level that pumping would be necessary in order to raise the sewage to the level of the main sewer, and the installation of pumping plant for this purpose is at present under consideration.

Certain storm water outfalls discharge into the River Don (No. XI. (A), (B), and (C), Ordnance Survey Sheet). The Tile Burn culvert, discharging into the tidal waters of the Don (No. XI. (A), Ordnance Survey Sheet), in addition to taking storm water, receives the sewage from Napier's Knackery. The outlet from the urinal at Bridge of Don (No. XII., Ordnance Survey Sheet) discharges directly into the Don tidal waters. Four drains carrying the sewage from 21 water-closets at Woodside Works (No. XIII. (A), (B), (C), and (D), Ordnance Survey Sheet) discharge directly into the lade from the Don that passes through the works. The overflow from the cesspool at Woodside House (No. XIV., Ordnance Survey Sheet) passes directly into the Don.

With the exception of the drains from Woodside

4. (continued.)

Works and the overflow from the cesspool at Woodside House, which, on account of their distance from, and lack of fall to, the main sewer, cannot conveniently be connected up with the town system, the entire sewage of the City is discharged into the North Sea at Girdleness or into tidal waters.

The various sewers in the remodelled Aberdeen Sewerage Works were constructed during the following periods:—

- (1) Main Sewer to Girdleness—1901-1911.
- (2) High Level Sewer to Abercrombie's Jetty—1868-1887.
- (3) Low Level Sewer to Abercrombie's Jetty—1891.
- (4) Low Level Sewer east of Victoria Bridge, north side of Dee—1899.
- (5) Low Level Sewer east of Victoria Bridge, south side of Dee—1892.
- (6) Dock Sewers of Harbour Area—1902-1904.
- (7) Various branch sewers—1911-1922.
- (8) Duplication of part of main Girdleness Sewer—
In process of construction.

5. (a) Is the effluent, in the opinion of the Medical Officer of Health,
(i.) thoroughly satisfactory,
(ii.) fairly satisfactory, or (iii.) unsatisfactory?

(b) Does such effluent give rise to secondary decomposition on the foreshore, or in the water-course, stream, river, lake, or loch into which it discharges?

6. If sewage purification works have not been installed, does the sewage, in the opinion of the Medical Officer of Health, give rise to pollution?

5. (a) The untreated sewage discharged into the North Sea at Girdleness Point is, in the opinion of the Deputy Medical Officer of Health, disposed of in a thoroughly satisfactory manner. The tidal currents prevent any sensible pollution of the foreshore, the ebb currents flowing north-east off the foreshore, and the flood currents south-east. The untreated sewage discharged into the tidal waters of the Dee is, in the opinion of the Deputy Medical Officer of Health, disposed of in a fairly satisfactory manner, since the tidal river with a strong current and a minimum flow of about two hundred million gallons of water per day, exclusive of tidal water, assisted by the tide, rapidly dilutes the sewage and carries it out to sea. The method of disposal of sewage by discharging it unpurified into the sea and tidal waters is open to the objection that the manurial value of the sewage is thus allowed to go to waste, but all experience hitherto of sewage purification and utilisation has shown that the expenditure is usually far in excess of the receipts.

(b) The untreated sewage does not give rise to any sensible secondary decomposition on the foreshore, tidal estuary, or tidal river.

6. The Deputy Medical Officer of Health is of opinion that the untreated sewage discharged into the sea and tidal waters of the Dee does not give rise to serious pollution.

7. Have any complaints ever been received by the Town Council as to the pollution, or alleged pollution, of any water-course, &c., by sewage from the Burgh? Give particulars of each complaint.
7. No complaints have been received by the Town Council since the institution of the present sewerage works.

ABERDEEN, 30th November, 1922.

RIVERS POLLUTION PREVENTION RETURN.

Form D. Burghs.

BURGH OF ABERDEEN.

1. (a) Enumerate, and state nature of, those works (*i.e.*, mills, bleach works, distilleries, &c.), within the Burgh, from which any discharge enters any water-course, stream, river (tidal or non-tidal), or inland loch, otherwise than through a public sewer, if, in the opinion of the Medical Officer of Health, such discharge causes pollution.
1. (a) There are only two works within the City from which any discharge of a polluting nature enters any water-course:—
 - (1) Donside Paper Mills, situated on the south bank of the River Don, one and three-quarter miles from the river mouth (No. XV., Ordnance Survey Sheet). The effluent from these mills, after purification, is pumped into the town sewers, but on a few occasions, owing to a breakdown in the pumping machinery, the effluent has been passed into the river. Within recent weeks, however, the pumping plant has been reconstructed and a duplicate pump provided, and, accordingly, the chance of river pollution is now reduced to a minimum.
 - (2) Gordon's Mills, Manufacture of Bedding, &c., situated on the south bank of the River Don, two miles from the river mouth (No. XVI., Ordnance Survey Sheet). At these mills worsted is washed with soap and water in a tank, and the contents of the tank are emptied about once a week into a lade which joins the River Don. This pollution is no greater than would occur from an ordinary domestic wash-house.
- (b) Enumerate those coal pits, mines, &c., within the Burgh, from which (1) pit water and/or (2) coal washings enter any water-course, stream, river, or loch, if, in the opinion of the Medical Officer of Health, such pit water or coal washings cause pollution.
- (b) There are no coal pits, mines, &c., within the Burgh.

2. (a) State, in respect of each such works, pits, &c., whether any, and if so, what provision has been made to treat or purify the effluent before discharge into any water-course, stream, river, or loch.

(b) State, with regard to each works, pit, &c., where such provision has been made, the respects in which the means provided are defective or inadequate.

3. (a) State whether any water-course, stream, or river within or passing through or by the Burgh is polluted from any works, pits, &c., outwith and upstream from the Burgh.

2. (a) Donside Paper Mills, manufacturing about 500 tons of paper per week, has a milky-white effluent containing much suspended cellulose and aluminium silicate and occasionally alkaline liquor and calcium chloride. This is treated by a system of settling tanks and filtration machinery to recover fibre and clay, and the effluent is finally pumped into the town sewers.

Gordon's Mills make no provision for purifying the effluent from yarn washing, but the pollution in this case is insignificant.

(b) The means provided for the treatment of the effluent at Donside Paper Mills is now considered adequate.

3. (a) Both the River Dee and the River Don are polluted with trade effluent and sewage before reaching the City boundary.

The River Dee receives trade effluent from the Culter Mills Paper Company, Culter, about six miles beyond the City boundary, the effluent from the mills flowing into the Culter Burn, and thence into the Dee. The Dee also receives the effluent from Lochnagar Distillery, situated about forty-eight miles beyond the City boundary. The sewage from the town of Banchory, about fifteen miles beyond the City boundary, and from the various villages and isolated houses between Banchory and Aberdeen, is also discharged directly into the Dee. In particular, the sewage from a considerable number of houses situated on the South Deeside Road, in the County of Kincardine, just beyond the City boundary at the Bridge of Dee, is discharged directly into the Dee.

The River Don receives trade effluent from Tait's Paper Mills, Port-Elphinstone, about fourteen miles beyond the City boundary; Stoneywood Paper Works, Bucksburn, about three miles beyond the City boundary; Mugiemooss Paper Works, Stoneywood, about two and a half miles beyond the City boundary; as also from the Grandholm Tweed Works, Woodside, which are on the Aberdeen County side of the Don directly opposite the City. The sewage from the town of Inverurie, about sixteen miles beyond the City boundary, and from the village of Dyce, about four miles, and the village of Bucksburn, about two miles beyond the City boundary, is also discharged directly into the Don. A considerable number of dwelling-houses situated on the north bank of the Don within the County of

3. (a) (continued.)

(b) As an indication of the degree of pollution in cases under heading 3 (a), state in each case whether the pollution is (i.) not visible, but inferred from other evidence (*e.g.*, injury to cattle), (ii.) slightly noticeable, (iii.) serious, or (iv.) offensive.

Aberdeen also discharge their sewage directly into the river between Persley Bridge, which marks the upper limit of the river City boundary, and the mouth of the Don.

(b) The trade effluent from Culter Paper Mills and from Lochnagar Distillery entering the River Dee is so diluted and sedimented by the time the river reaches the City boundary that the pollution is not appreciable by the senses.

Analyses of samples of Dee water taken for the purposes of this Return at the Bridge of Dee, where the river enters the City boundary, show that 100,000 parts of the water take up 0.6 parts of dissolved oxygen in five days at 18° C., and since the "limiting" figure laid down by the Commissioners in the Eighth Report of the Royal Commission on Sewage Disposal is 0.4 parts oxygen per 100,000 parts water, it is obvious that the sewage discharged directly into the Dee between Banchory and Aberdeen by the County of Kincardine would almost certainly cause signs of pollution in the river within the City were it not for tidal waters.

The pollution of the River Don by trade effluent gaining access to the river outwith the City is visible and serious within the City reaches. The chief offenders are the large paper mills beyond the boundary of the City. In a series of observations between Persley Bridge, at the upper boundary of the City, and the mouth of the Don, made for the purpose of this Return, the river was found to be not infrequently discoloured and frothy, and to be continuously so laden with suspended solid organic matter—evidently debris from the paper mills—that it had lost much of its transparency. In hot weather the smell of the decaying organic matter is occasionally offensive, especially within the tidal part of the river. Microscopical examination of 17 samples of water taken from the River Don within the City area during the past month showed that the deposit always consisted of wood cellulose and esparto grass, and occasionally contained linen, cotton, and jute fibres in addition. The gross pollution of the River Don by effluent from paper mills has been diminished in recent years, but much remains to be done before the nuisance will be abated. Few would make demands on owners such as would imperil the continuance around Aberdeen of the important industries they represent, but experience in the case of Donside Paper Mills, situated within the City boundary, and formerly one of the worst offenders, shows that mill effluents can be purified without incurring any intolerable expense.

3. (b) (continued.)

The effluent from Grandholm Tweed Works, Woodside, has been greatly improved in recent years. Fatty matter is extracted, fibre recovering screens used, and the treated effluent pumped to the City sewers. The occasional pollution with dyes, &c., that still occurs is the result of overflow.

Analyses of samples of Don water taken for the purposes of this Return at Persley Bridge, where the river enters the City boundary, show that 100,000 parts of the water take up 0.4 parts dissolved oxygen in five days at 18° C., and since this constitutes the "limiting" figure of the Sewage Commissioners, it would appear that the sewage of Inverurie, Dyce, and Bucksburn receives the bare minimum degree of dilution necessary to obviate risk of nuisance within the City.

(c) State in each case whether such pollution is continuous or spasmodic. In the latter case, indicate the frequency with which pollution occurs.

(c) The pollution of the River Don from paper mills is continuous on working days. The clearness of the water on Saturday afternoons and Sundays and other idle days is very noticeable. The pollution of the River Don from overflow from Grandholm Tweed Works is spasmodic, say, for twenty minutes once or twice weekly.

4. State whether complaint has ever been received of pollution of any water-course, stream, or river outwith and downstream from the Burgh by the discharge from any works or pit within the Burgh.

4. No such complaint is possible, owing to the geographical situation of Aberdeen.

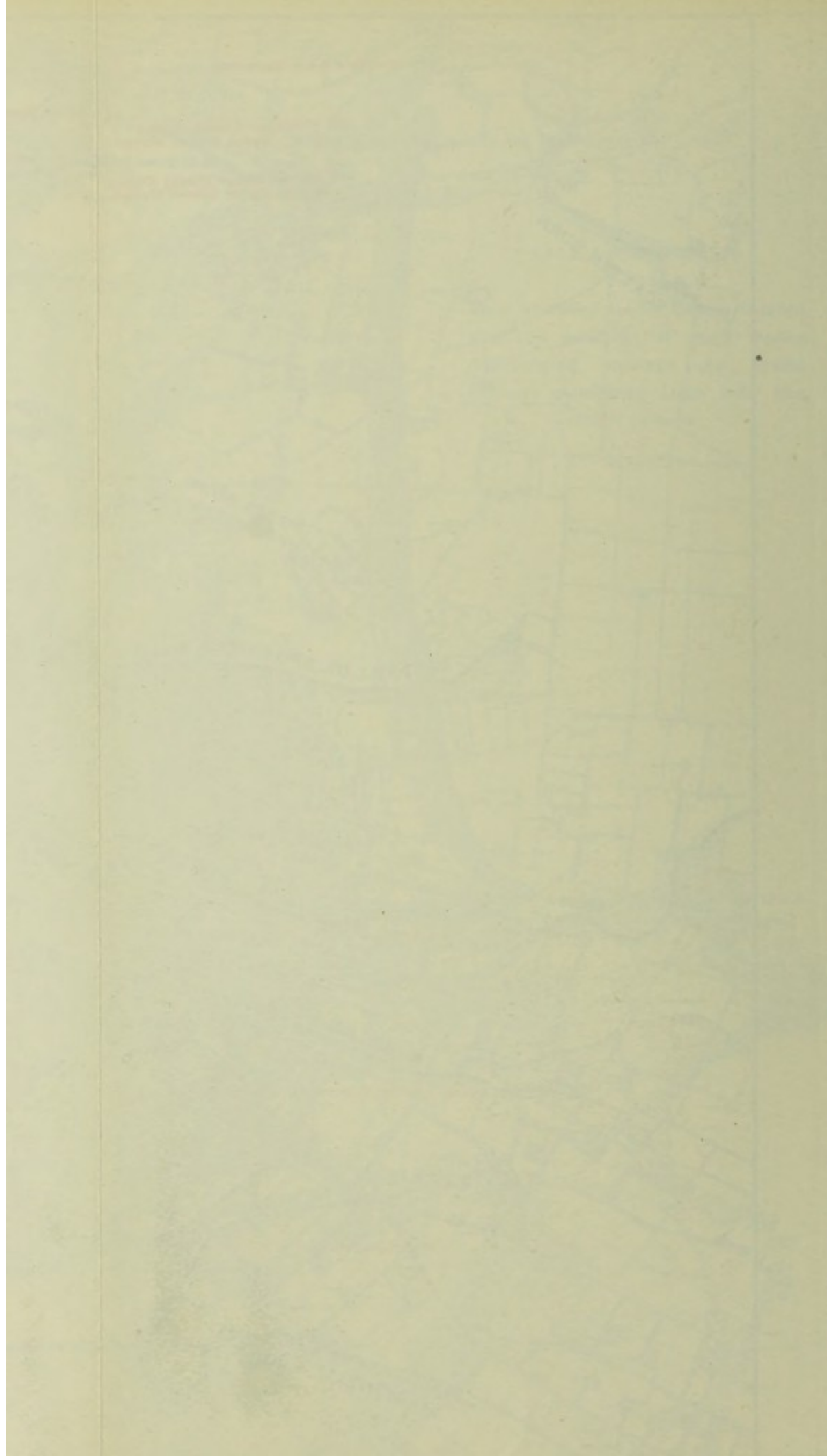
5. State in respect of each water-course, stream, or river within or passing through or by the Burgh, whether the fish life therein has been adversely affected by the discharges entering thereinto from works, pits, &c.

5. Evidence was taken from the Chief Inspectors of the Dee and Don Fishery Boards on 13th October, 1922, for the purposes of this Return, with reference to any adverse effect on fish life by discharges from works into the Dee and Don.

Pollution within Burgh Boundary.—The Fishery Board's Inspectors stated that the pollutions (due to sewage) of the Dee and Don, which take place within the City, do not seem to be harmful to fish, as the waters polluted are all tidal waters.

Pollutions of Dee outwith Burgh Boundary.—According to the Fisheries' Inspectors, practically all the complaints have been associated with the presence of dead, newly run fish in the river below the confluence of the Culter Burn and the Dee.

Pollutions of the Don outwith Burgh Boundary.—Although the pollution of the Don is obvious and persistent, it has not been associated, so far as the Fisheries' Inspectors report, with the finding of dead fish that were, or may have been, the victims of it.



WORKSHOPS AND INSPECTION OF PLANS.

Workshops.—The number of workshops, exclusive of factories, registered at the end of 1923 was 763, as compared with 788 in 1921. The reduction in recent years has been continuous, and has been distributed over a wide variety of trades.

The reduction in the number of workshops is more apparent than real, owing to the conversion every year of certain workshops into factories by the introduction of motive power, more especially of electrical power, which is a particularly convenient source of motive power for small workshops. The proportion of factories has thus been growing at the expense of the workshops.

Excellent work continues to be done by the Sanitary Inspector and his staff in the sanitary control of the workshops of the City. Every workshop is inspected at least once a year, and an effort is made to keep it in accordance with the requirements of the Public Health Act and the Factory and Workshops Acts. Fishcuring and provision-curing works are inspected very frequently, some of them almost daily, the primary object of the visit being the inspection of the food. The bulk of the defects found during the years under review had reference to want of cleanliness. A considerable number of notices had also to be issued yearly with regard to the structure or condition of water-closet accommodation, as also in regard to breaches of the special sanitary requirements for bakehouses.

Bakehouses.—The bakehouses, of which there were 80 in the City in 1923, as compared with 71 in 1921, were, as usual, inspected every quarter or oftener, and were found, on the whole, to be in a satisfactory condition.

Inspection of Plans.—During the two years under review certain plans—chiefly of factories and workshops, and especially of those in which foodstuffs are prepared—were examined and reported on by the Medical Officer of Health and the Sanitary Inspector. Thus, plans for 21 new buildings or alterations of existing buildings were dealt with in 1922, and 22 such plans were dealt with in 1923. Several recommendations in regard to improvements in lighting and ventilation, drainage, and the provision of adequate sanitary conveniences, were approved by the Town Council and given effect to.

WORKSHOPS ACT, INSPECTION OF PLANS

Workshops.—The number of workshops, exclusive of factories, registered at the end of 1911 was 753, as compared with 725 in 1901. The number in 1901 was 725, as compared with 753 in 1911. The number in 1901 was 725, as compared with 753 in 1911. The number in 1901 was 725, as compared with 753 in 1911.

The number of workshops in the number of workshops is more important than the number of workshops in the number of workshops. The number of workshops in the number of workshops is more important than the number of workshops in the number of workshops. The number of workshops in the number of workshops is more important than the number of workshops in the number of workshops.

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At the same time the Town Council, at the request of the Board, forwarded 6 in. Ordnance Survey sheets showing (1) each sewer outfall, and (2) the position of each works, &c., any discharge from which causes, in the opinion of the Medical Officer of Health, pollution of any watercourse, stream, &c., and the point where such discharge enters the watercourse, stream, &c; and a print of this map is attached hereto.

OFFENSIVE TRADES.

The offensive trades in Aberdeen, within the meaning of the Public Health Act, are concerned chiefly with tallow-melting or oil extracting from ox bones or fish livers, soap boiling, slaughtering, knackerings, hide factoring, and the manufacture of manures, including fish manure and a similar product known as fish meal.

Seven applications were received during the two years under review for the sanction of the Town Council to establish businesses under the offensive trades Section of the Public Health Act, and a report was in all cases submitted by the Medical Officer of Health and the Sanitary Inspector for the assistance of the Public Health Committee in determining their recommendation to the Town Council. Four of the applications were sanctioned.

The most important applications for the establishment of offensive trades made during the two years had reference to applications for the establishment of fish meal factories, made by:—

- (1) Mr. John Spencer, Oil Manufacturer, Albert Quay, for premises to be erected at Point Law;
- (2) Messrs. Allan & Dey, Fish Merchants, for premises already erected within their fishcuring works in Poynerook Road;
- (3) Messrs. The Albumenoid Products Co., Limited, for premises to be erected adjacent to their albumenoid works in Crombie Place, Torry.

Early in 1924, an application was also submitted by the North of Scotland Fish Guano Company, Limited, for the sanction of the Town Council to the transference of the business of fish meal manufacturers presently carried on by them in Palmerston Road to premises to be erected on a site acquired by them fronting Mearns Quay and Ocean Row, Point Law.

The whole matter of sanction to the establishment of such works is still *sub judice*, pending an appeal to the Scottish Board of Health; but the reports on the applications by the Medical Officer of Health and Sanitary Inspector have been before the Council and are available elsewhere. It has seemed desirable, however, to include the following excerpts in this annual report, so that the considered views of the officials concerning the establishment of such factories in the past, as recorded in previous annual reports, and as revised in the light of later experience, should be maintained in an ordered sequence.

EXCERPT FROM REPORT DATED 28TH FEBRUARY, 1924.

Previous Policy of the Town Council in regard to Fish Meal Works.—Before discussing the individual applications, it is important first to consider the policy of the Town Council in regard to former applications for the establishment of such businesses. Up to the present time, the Town Council's policy has been to refuse sanction. This policy was determined in 1909 after consideration of a report by a Sub-Committee specially appointed to deal with an application for sanction to establish the business of the manufacture of fish meal. The Sub-Committee at that time visited works in various parts of the country, and found that none of the works visited was free from complaints of nuisance. This application in 1909 for the establishment of a fish meal works was refused, as were also the applications in 1921 of two of the present applicants, namely, Messrs. Allan & Dey and Messrs. The Albumenoid Products Co., Ltd. In the report submitted by the Medical Officer of Health and Sanitary Inspector, dated 18th May, 1921, regarding the two last-mentioned applications, it was stated *inter alia* that—"We fully recognise the need for conserving and utilising all the fish refuse produced in the City, but we have always been of opinion that if it is to be dealt with in works within or near the City, it should, if possible, be in a single adequate establishment or factory, situated at a proper distance from houses, and so constructed and managed as to reduce as far as practicable the escape of offensive effluvia; and, failing a single factory, then in the fewest possible factories. The fewer such factories, the more easy would it be for the Health Department to exercise proper surveillance. Our experience is that, unless the utmost care is being constantly taken by those in charge of the works, even when the apparatus is of the best construction, offensive effluvia may escape at times into the surrounding atmosphere, and may be noticeable and complained of even at a distance of several miles."

The present reporters are in entire accord with the views thus expressed.

Experience and Conduct of Existing Fish Meal and Fish Guano Works.—In order to discuss the sanitary principles concerned in the functioning of such works, consideration of which will largely determine the attitude of the Town Council as to whether any change in the prevailing policy should be contemplated, it is important to survey the history of similar businesses which are at present in operation within the City and neighbourhood.

In addition to the two existing fish meal factories in the City, there is a large fish meal and guano factory at Cove, situated about four miles south of Aberdeen. It is claimed for this factory that all reasonable methods are utilised in order to dispose of offensive effluvia, but the recurring nuisance created by it is such as would not be tolerated if the factory were within the City. Offensive odours from this factory have frequently been complained of in the City of Aberdeen itself, when the wind is blowing from the direction of the factory. The factory is close to the railway as it passes south from Aberdeen, and the traveller seldom passes it by rail without being most disagreeably and offensively reminded of its presence.

Of the two factories within the City, the longer established is that of Sandilands, which is carried on by a firm who are engaged in an extensive chemical

manufacturing business. This firm are careful in their methods, and are not sparing in the necessary expense to get rid of noxious effluvia. They wash and dissolve the effluvia by means of water scrubbers, and subsequently burn the uncondensed gases by passing them through a special furnace. The firm manufacture fish guano as well as fish meal. They use only fresh and clean offal for conversion into fish meal, any semi-putrid offal being used for the manufacture of fish guano. Any failure of the condensers or cremator to deal with effluvia when semi-putrid offal is being worked up necessarily results in the production of a nauseous odour of a putrid nature. This is dependent on the fact that, in the process of putrefaction, the disintegration of the proteins and the oxidation of the fats of offal are induced by the action of bacteria, with the result that when such putrid offal comes to be cooked at a temperature of from 200° F. to 300° F.—the temperature commonly employed in working up fish offal to fish meal—there is a liberation of much more offensive degradation products than is occasioned by the action on fresh offal of steam at a similar temperature. The manufacture of fish guano and fish meal at Sandilands was begun before the sanction of the Town Council was required for the establishment of such a business under the Public Health Act.

The other fish meal factory, which is situated in Palmerston Road, and which the original owners stated was to be restricted to the manufacture of fish meal or fish flour, was also started without the consent of the Town Council, before the Offensive Trades Section of the Public Health Act as applicable to Aberdeen was amended in 1908 so as to include the manufacture of fish meal. In general, the method employed in this factory for the disposal of effluvia is similar to that in use in Sandilands. For a number of years after its inauguration, the Palmerston Road factory was the subject of frequent and justifiable complaints regarding offensive effluvia emanating from it. As a result of the warnings given that prosecution would follow unless nuisance was abated, several improvements were made both in connection with the apparatus and in the general conduct of the business, the use of *fresh* offal only being especially insisted upon. The Health Department continued to urge that only fresh offal should be used, and the number of complaints rapidly diminished. This reduction of nuisance has been especially noticeable since 1919.

Nevertheless, by 1921, experience of the results obtained from such improvements in plant, material, and methods of working, as applied to the conduct of fish meal factories, was not sufficient to justify the Medical Officer of Health and Sanitary Inspector in recommending any change in the policy of the Town Council. Accordingly, the applications in May of that year by two of the present applicants, namely, Messrs. Allan & Dey and Messrs. The Albumenoid Products Co., Ltd., were refused. Since that date the Health Department have intensified their supervision of the Palmerston Road factory, and the records show that on very few occasions since then and up to the present date have any offensive smells been observed even within 100 yards of the factory. During the past three years only one complaint (in June, 1922) has been received from citizens regarding any smell from this factory, and on that occasion there was some doubt as to whether the smell com-

plained of was proceeding from the Palmerston Road factory, since, by the time the complaint was investigated, the smell could no longer be detected, and the wind was blowing from a direction that would have exonerated the factory from responsibility. During this three years' period, we have only once obtained evidence that a smell of fish attributable to this factory has been detected at a distance of 300 yards from the factory. On no single occasion has any smell been detected beyond this distance. In this single case it was ascertained that an abnormal amount of red fish offal, containing an excess of fat, was being utilised for the production of fish meal. As part of the intensified supervision of this factory, the Sanitary Inspector, in October, 1923, arranged that the factory should be visited at least five or six times daily by different members of the Public Health staff. Two of the assistant inspectors have each been visiting the vicinity of the factory on two or more occasions each day; and scarcely a day has passed without one or more visits being made by the Medical Officer of Health and the Sanitary Inspector. On no single occasion during this period has any smell been experienced which would have justified any action being taken. Any smell found was of the nature of a smell of fish. Apart from the single occasion referred to, no smell has been detected at a distance greater than from 10 to 80 yards from the factory.

It has to be borne in mind that in this district of the City there is a large number of fishcuring yards, with the result that the neighbourhood is never free from a smell of fish. The fishy smell referred to as proceeding from the Palmerston Road factory within recent years is entirely different from the offensive odours to which the Health Department took exception in earlier years. In other words, experience in connection with this factory during the past three years, associated as it has been with intensive surveillance, indicates that when fresh offal only is used, when the water condensers and cremator are sufficient for their purpose, and when the conduct of the works is sound, then the factory has functioned without causing any offensive effluvia. A smell of fish proceeding from the works has not been appreciable beyond a distance of from 100 to 300 yards, and, as already mentioned, only once at that latter distance.

In this connection it has been found that, in addition to the freshness of the offal, the nature of the fish from which the offal is produced is important in determining the care with which the effluvia must be rendered innocuous. Thus, it is general experience that the fresh offal of cod, haddock, whiting, and fish of this nature is much less likely to give rise to offensive odours than is the fresh offal of herring, turbot, red bass, salmon, and fish of a like nature, in which fat is present in larger amount and is contained in the flesh and not mainly confined to the liver, as is the case with the fish first mentioned. That the working up of the offal of herring and other fish containing a higher percentage of fat, requires more rigorous precautions in order to prevent nuisance, is true; but it has been abundantly demonstrated in the largest fish oil production firm in Aberdeen that the extraction of oil from all kinds of fish livers can be carried out without nuisance when the methods used in the oil works for condensing, washing, and burning the vapours are sufficient, and when the management and control are adequate. In addition to this firm of fish oil producers in Aberdeen, there are a

few smaller works engaged in the production of oil from fish livers, and it is a matter of fact that the Health Department have had to make every effort short of prosecution to compel one of these smaller firms to adopt methods sufficient for the prevention of nuisance. The more experience we have of all offensive trades that may imperil the amenity of the City, the more are we convinced that any unnecessary multiplicity is fraught with danger of offense that cannot in practice be adequately controlled. The experience of Aberdeen has been the experience elsewhere, such businesses as fish meal and fish oil factories having been a prolific source of nuisance in other districts where the Health Authorities have failed to secure the provision of adequate means for preventing and destroying effluvia.

Discussion of Sanitary Principles Involved.—In view of the results obtained in more recent years in preventing the escape from a fish meal works of any effluvia capable of causing nuisance to the inhabitants of the City, it has now to be determined whether or not the time has come for reconsideration of the policy that no new fish meal manufactory or extension of such factory should be sanctioned.

The Palmerston Road experience has demonstrated that a fish meal factory can be operated within the City without danger to the amenity of the City, especially if the factory is built and equipped with all modern improvements and deals only with fresh offal, is situated on a site at a proper distance from houses, is controlled by a management competent to prevent nuisance, and is subjected to the continual surveillance of the Health Department. In this connection, it must be clearly recognised that, from the nature of the material dealt with, these fish meal factories are dangerous businesses, and that there must be no extension of them beyond what is necessary to deal with the whole offal of the City in a fresh state. It is, moreover, obvious that should any private firm receive sanction for the establishment of a new fish meal manufacturing business, this sanction would certainly be followed by applications from other firms for sanction to carry on similar works—additional applications for sanction that the Town Council would have difficulty in refusing in view of the precedent thus established. This would most certainly mean that the necessary surveillance by the Health Department could not be adequately secured. In other words, it must clearly be understood that proper sanitary surveillance of a multiplicity of such factories is not a practical proposition.

It comes to this, that if the Town Council are entirely satisfied that the two existing fish meal works in Aberdeen are incapable of dealing with the whole of the offal in a fresh state as produced in the City, then reason may be adduced for the sanction of such an additional establishment as would be capable of dealing daily with the maximum seasonal output of offal in a fresh condition. Enough has been said to indicate our earnest conviction that one, and only one, such factory should ever be sanctioned, if adequate control is to be maintained.

If this conclusion is approved, it necessarily follows that in the interests both of the City and of the fishing industry the nature of the sanction given should not be such as to confer a monopoly. We have given the most careful consideration to this matter, and at first it appeared that the establishment of a municipal factory on the above lines would best meet the requirements of the case. On further con-

sideration, however, it was obvious that the owners of the raw offal necessarily controlled the situation, and it appeared unlikely that they would be at all unanimous in sending the whole of the raw material to such a municipal factory. If such unanimity of approval of a municipal factory could not be obtained, it naturally followed that, in the event of such a municipal factory being established, the Town Council would be committed to a large financial disbursement for which there would be no return apart from the existence of a factory rejected by the trade it was built to benefit.

We accordingly have come reluctantly to the conclusion that if the requirements of the industry are as aforesaid, and if the establishment of a municipal factory is foredoomed to failure, then the only alternative method to meet the necessary requirements is that the business should be run in the form of a co-operative undertaking, to which every producer of offal will have free access and be permitted participation in profits. We are of opinion that some such arrangement would prevent the creation of a monopoly and best serve the interests of the community.

Requirements that Determine New Policy.—It is important at this stage to summarise what we regard as the fundamental principles on which the future policy of the Town Council should be based.

- (1) In order to secure adequate control by the Health Department, the fish meal industry as sanctioned by the Town Council must be capable of dealing with the maximum daily output of raw offal in a fresh condition.
- (2) This work must be carried out in a single factory under one management responsible to the Health Department. In order to meet this second requirement and to conserve and utilise all the fish offal in a fresh state, it appears to be necessary that the factory should be in the nature of a co-operative undertaking offering the fullest facilities to all producers of offal.

Sites of Factories.—Reference has already been made to our view that any fish meal factory should be situated at a proper distance from dwelling-houses, and the experience gained in connection with the Palmerston Road factory indicates that a suitable site should be at least 100 yards distant from such houses. In addition, we consider it important that the site should be in an area largely given over to the fishing and allied industries, and in which there is no great density of population employed. Reference to the twenty-five inch Ordnance Survey map, on which circles at consecutive intervals of 100 yards have been drawn surrounding each of the sites of the three proposed factories for which sanction is wanted, shows that adjacent premises exist to the following extent:—

Mr. John Spencer, Point Law—

Within 100 yards of this site there are no dwelling-houses, no fishcuring premises, and no other business premises, including offices.

Within 200 yards, there are 1 dwelling-house, 2 fishcuring premises, and 3 other business premises, including offices.

Within 300 yards, there are 100 dwelling-houses, 2 fishcuring premises, and 15 other business premises, including offices.

Within 400 yards, there are 407 dwelling-houses, 4 fishcuring premises, and 35 other business premises, including offices.

Messrs. Allan & Dey, Poynerook Road—

Within 100 yards of this site there are 3 dwelling-houses, 6 fishcuring premises, and 7 other business premises, including offices.

Within 200 yards, there are 13 dwelling-houses, 23 fishcuring premises, and 43 other business premises, including offices.

Within 300 yards, there are 31 dwelling-houses, 45 fishcuring premises, and 104 other business premises, including offices.

Within 400 yards, there are 103 dwelling-houses, 103 fishcuring premises, and 162 other business premises, including offices.

Messrs. The Albumenoid Products Co., Ltd., Crombie Place—

Within 100 yards of this site there are no dwelling-houses, 5 fishcuring premises, and 2 other business premises, including offices.

Within 200 yards, there are 12 dwelling-houses, 20 fishcuring premises, and 10 other business premises, including offices.

Within 300 yards, there are 378 dwelling-houses, 30 fishcuring premises, and 74 other business premises, including offices.

Within 400 yards, there are 1,044 dwelling-houses, 40 fishcuring premises, and 157 other business premises, including offices.

Having these points in mind, and having regard to facility of transport of raw offal, and having, in addition, carefully surveyed all the available sites within the City boundary, we have come to the conclusion that the area known as Point Law at its most easterly point, which is the site proposed for the factory consent for which Mr. John Spencer has made application, provides the best available site for the establishment of a fish meal factory within the City. As has already been stated, there are, within 400 yards of the Point Law site, 407 dwelling-houses, 4 fishcuring premises, and 35 other business premises, whereas within the same distance of the Crombie Place site there are 1,044 dwelling-houses, 40 fishcuring premises, and 157 other business premises. Not only so, but the map shows that the Point Law site has definite advantages over the Crombie Place site owing to the fact that it is bounded on one side by the Tidal Harbour and on the other side by the River Dee, so that it will remain isolated no matter what future development may take place in the building of new houses or factories.

Consideration of Plans and Memoranda.—The plans and memoranda submitted by the three applicants are available for detailed consideration. We have, however, endeavoured to make it clear that we are entirely opposed to the establishment of three additional fish meal factories, that we consider it impossible in practice to exercise proper surveillance over three additional factories were they to be established, and that we only favour the establishment of one additional

factory capable of taking the maximum daily output of raw offal throughout the year, should the Town Council be satisfied that the two existing factories cannot deal with the total output of offal in Aberdeen in a fresh state. Moreover, we have also clearly indicated our opinion that, in order best to serve the interests of the industry, the factory should be in the nature of a co-operative undertaking offering the fullest facilities to every producer of raw offal. The information submitted by the last two applicants, however, indicates that the factories for which they seek sanction are to be run as private concerns, and, therefore, fail to meet what we regard as a fundamental requirement of any factory that the Town Council should sanction; and we accordingly recommend that the Town Council should refuse sanction to Messrs. Allan & Dey, Poynerook Road, and Messrs. The Albumenoid Products Co., Ltd., Crombie Place. Should this view be approved by the Town Council, the plans and memoranda of these two applicants need not be considered further.

In regard to the first application, namely, that of Mr. John Spencer, the memorandum submitted by him indicates that it is intended to use only *fresh* fish offal for conversion to fish meal. We are of opinion that this is a fundamental requisite, and accordingly implies a qualified sanction, qualification of sanction having been endorsed by the decision of the Court of Session in the appeal of *Darney v. Calder District Committee*, 7 F. 239. The letter from Mr. Spencer's agents, which accompanied the formal application, further indicates that the factory for which sanction is sought is to be organised on co-operative lines. It falls to the Town Council to satisfy themselves that this co-operative organisation, as set forth in the letter referred to, meets fully the needs of the producers of raw offal to the extent we have above indicated.

With regard to the adequacy of the apparatus in the plans submitted by Mr. John Spencer to deal with the daily supply of fresh offal, and the capacity of the proposed factory for the extension of such apparatus, the provision appears to us to be reasonable. With reference to the detailed plans of buildings and apparatus, there are several adjustments and improvements that would require to be incorporated in order to give the best results. Thus, owing to difficulty in cleansing the bucket rotary elevator shown in the plans of the apparatus, we are of opinion that this elevator should be replaced by a single platform elevator for the reception of barrels of raw offal, floored, and walled, in so far as walls are necessary, with impervious material capable of ready cleansing. The upper floor of the building in which the raw offal is received should similarly have an impervious floor and glazed impervious walls, preferably white, rounded off at their junction with the floor, and so capable of rapid and complete cleansing. We are also of opinion that the exhaust steam from the power station of the factory should be condensed and should not be permitted to escape into the atmosphere to act as condensation nuclei for such sulphurous, nitrogenous, and carbonaceous gases as are best dissipated by diffusion. Details of this description, in connection with the building itself and with the apparatus, can be adjusted in the event of the Town Council sanctioning the establishment of this factory.

Recommendation.—We accordingly take leave to recommend that, in the event of the Town Council being satisfied that the existing fish meal works in Aberdeen are incapable of working up the maximum daily output of raw offal in a fresh state, and in the event also of the Council being satisfied that the co-operative principle as enunciated in connection with Mr. Spencer's application is adequate to meet the reasonable requirements of the fishing industry, sanction be given to the establishment of the business of manufacturer of fish meal on the site on Point Law specified in Mr. Spencer's application, such sanction to be limited wholly to the use of *fresh* fish or *fresh* fish offal for the production of fish meal.

Conclusion.—We would earnestly urge the Town Council to give serious consideration to what we regard as the fundamental requirements towards which the policy of the Council in regard to any application for sanction for the establishment of a fish meal works should lead, if the amenity of the City is to be preserved and the best interests of the fishing industry conserved, namely,—sanction for one factory only, in one premises and under one management, capable of dealing with the maximum amount of raw offal produced in Aberdeen in a fresh state, and capable of meeting all the reasonable requirements of the producers of fresh offal now and in the future, including participation of such producers in profits.

EXCERPT FROM SUPPLEMENTARY REPORT DATED 15TH APRIL, 1924.

In terms of remit from the Public Health Committee, dated 25th March, 1924, to obtain information concerning—

- (1) (a) The amount of fish and fish offal within the City that is available for conversion to fish meal and fish guano,
 (b) The capacity of the existing fish meal and fish guano factories within the City and neighbourhood to deal with this fish and fish offal, and
 (c) The capacity of each of the proposed additional fish meal works to deal with fish and fish offal; and
- (2) Experience of the operation of fish meal and fish guano factories elsewhere—

we beg to report as follows:—

I. (a) Total Amount of Fish and Fish Offal.

The monthly landings of fish in Aberdeen from August, 1912, to March, 1924, as obtained by courtesy of the Fishery Officer of the port, are submitted in Tables I. (A), (B), (C), and (D). The amount of offal derived from such landings varies according to the nature of the fish, and it has been necessary, therefore, to use varying factors (see Table II.) in calculating the offal output, the fractions used being, in the opinion of the Fishery Officer, approximately equitable. Estimated in this fashion, Table II. gives a measure of the total amount of fish offal obtained from fish landed by both British and foreign vessels, including fish used as manure and not as human food, during each of the periods, 1st August, 1912, to 31st July, 1914, and 1st April, 1922, to 31st March, 1924. Reference to Table II. shows that in these four years offal requiring to be dealt with amounted to, in round numbers, 42,000,

44,000, 40,000, and 41,000 tons respectively. If, however, the maximum month's output of offal in each of these years is taken as a more useful measure of what should be the capacity of fish meal and fish guano works to deal with the varying supplies of offal, it is found that in April, 1913, 6,150 tons of offal were produced; in June, 1914, 5,604 tons; in May, 1922, 5,096 tons; and in March, 1924, 5,542 tons. The average of these figures approximates 5,598 tons of offal per month, giving a calculated figure of 67,000 tons of offal per year.

I. (b) Capacity of Existing Fish Meal and Fish Guano Factories to deal with Offal.

The following measure of the capacity of the existing fish meal and fish guano factories to deal with raw fish and raw fish offal has been elicited in correspondence with the proprietors of the Sandilands, Palmerston Road, and Cove Bay factories (see Appendix I.), namely:—

Sandilands,	.	.	.	.	40 tons per 24 hours.
Palmerston Road,	.	.	.	.	25 „ „
Cove Bay,	.	.	.	.	250 „ „

giving a total of 315 tons of fish and fish offal capable of being converted into fish meal or fish manure within 24 hours, which is equivalent to a calculated figure of, approximately, 115,000 tons of raw material capable of being disposed of in a year consisting of 365 working days. The equivalent yearly figures for each of the three works are 15,000 tons (Sandilands), 9,000 tons (Palmerston Road), and 91,000 tons (Cove Bay).

According to the theoretical figure of 115,000 tons calculated as being within the capacity of the existing fish meal works to deal with raw offal, and according to the theoretical figure of 67,000 tons calculated as representing the maximum yearly supply of offal as being available in Aberdeen, it would appear that the existing factories in Aberdeen and Cove Bay are capable of dealing with almost double the maximum amount of offal calculated as being made available. On the same basis, it may further be assumed that the existing fish meal factories have made provision for dealing with the maximum *daily* output of raw offal that may reasonably be anticipated.

Before concluding that the figures submitted provide ample evidence that the three existing fish meal and fish manure factories are abundantly capable of dealing *adequately* with the maximum output of fish offal in Aberdeen, it is necessary to advert to the conduct of the existing factories. In our principal report, we have referred briefly to the method in use at Sandilands and Palmerston Road by which raw offal is converted to fish meal and fish manure, and, in particular, to the method used to get rid of offensive effluvia by washing and dissolving the effluvia by means of water scrubbers and subsequently burning the uncondensed gases by passing them through a special furnace. We deemed it of importance, therefore, that we should have an opportunity of inspecting the factory at Cove Bay with a view to ascertaining the adequacy of the apparatus and conduct of this business. Accordingly, by courtesy of the Managing Director of the Company, we were enabled to visit the factory on Tuesday, the 10th April, accompanied by the

Managing Director, a co-Director, and one of the Secretaries of the Company. We found during our visit that the method of cooking the offal in the twenty concentrators for three hours, and thereafter removing the material to the rotary drier, as described in the Managing Director's letter, dated 2nd April (see Appendix I.), was in operation. The opening of the concentrators after three hours' cooking and the removal of the heated contents while still moist and of a porridgy consistence from the concentrators so that the material may be transferred to the rotary drier, indicates, in our opinion, a disregard of the most elementary precautions necessary for the prevention of nuisance. Our experience of other fish meal and fish guano works indicates that the most offensive degradation products of the process tend to be given off during the third and fourth hours of cooking. It is within this period that the twenty concentrators at the Cove Bay factory are opened and discharged. As regards the disposal of the effluvia given off during the three hours' period of cooking, the method in use is adapted, as we were credibly informed, from methods of a similar nature in use in Germany, the principle of the process being dependent on the well-known deodorising action of peat and earth. The effluvia from the concentrators are conveyed by means of a 9-inch iron pipe through a water reservoir wherein the convolutions of the pipe are exposed to the chilling action of cold water, and thereafter the effluvia pass into an underground duct which leads to two peat filters, wherein we were informed the arrangement is such as to expose the effluvia to the greatest possible peat surface. The outlet of this system is on the cliffs directly above the seaboard by means of a duct leading from the peat filters. The inadequacy of this method as intended to get rid of noxious effluvia may be judged by the fact that there is but little condensation even of water vapour by chilling of the convoluted pipe within the water reservoir, as is demonstrated by the volume of steam pouring forth at the outlet of the system. The inadequacy of the peat filters to act as an effective deodorant can best be judged by the nauseous smell of the steam expelled at the outlet of the system.

I. (c) Capacity of Proposed Additional Fish Meal Works.

Reference to Appendix II. shows that, with a working day of 24 hours, the three factories for which application has been made for sanction could dispose of raw fish and raw fish offal to the following extent, viz.:—

Albert Quay (John Spencer),	66 tons per 24 hours.
Crombie Place (Albumenoid Products Co.),	32 „ „
Poynerook Road (Allan & Dey),	1 „ „

The equivalent annual figures in a year consisting of 365 working days are, approximately, 24,000 tons (Albert Quay), 12,000 tons (Crombie Place), and 365 tons (Poynerook Road).

II.—Experience concerning the Operation of Fish Meal and Fish Guano Factories elsewhere.

The results of our inquiries as to the experience obtained concerning the functioning of fish meal and fish guano factories in other parts of the United

Kingdom are summarised in Table III. Reference to this Table shows that, on the whole, the weight of opinion, is favourable to the establishment of such works. The best conception of the present-day position will be secured by reading the correspondence submitted in Appendix III. Of that correspondence, the most illuminating information will be found in a comparison of the replies received from Dr. Wilson, Medical Officer of Health of Lanarkshire, and Dr. Adam, Medical Officer of Health of Stirlingshire. It appears to us that in these two areas the fundamental conditions are comparable, with the reservation that at Rutherglen, Lanarkshire, the propinquity of adjacent houses has made intensive surveillance urgent, with the result that nuisance has been prevented, whereas at Falkirk, Stirlingshire, the remoteness of site and, consequently, the occasional nature of complained-of nuisance, as in the case of the Cove Bay factory, have bred an attitude of tolerance.

EXCERPT FROM REPORT DATED 19TH MAY, 1924, ON THE APPLICATION FOR TRANSFERENCE OF PALMERSTON ROAD FISH MEAL FACTORY TO PREMISES TO BE ERECTED ON A SITE AT POINT LAW.

Site of Factory.—The site of the proposed factory is on Point Law immediately adjacent to and on the west side of the site for the factory consent for which Mr. John Spencer has made application. In accordance with information contained in our principal report, the following information as to the proximity of dwelling-houses and other premises to the site for the new factory proposed by the North of Scotland Fish Guano Company is herewith submitted, viz. :—

Within 100 yards of this site there are no dwelling-houses, 1 fishcuring premises, and 3 other business premises, including offices.

Within 200 yards there are 21 dwelling-houses, 1 fishcuring premises, and 11 other business premises, including offices.

Within 300 yards there are 162 dwelling-houses, 2 fishcuring premises, and 24 other business premises, including offices.

Within 400 yards there are 257 dwelling-houses, 5 fishcuring premises, and 41 other business premises, including offices.

Ignoring any difference in favour of the site secured by Mr. John Spencer as compared with the site secured by the North of Scotland Fish Guano Company, which a comparison of such figures reveals, it is obvious that with two fish meal factories operating side by side and under separate control, it would, in the event of nuisance arising, be impossible to determine accurately its source. Indeed, the very proximity of the factories might tend towards laxity of management.

Capacity of Factory to deal with Fish and Fish Offal.—In conformity with our supplementary report, it has been ascertained (see Appendix II.) that, with a working day of 24 hours, the proposed new factory could dispose of 65 tons of raw fish and raw fish offal per day, the equivalent annual figure in a year consisting of 365 working days being approximately 24,000 tons. The Palmerston Road Factory is capable of dealing daily with 25 tons offal, and accordingly the new factory proposed to be erected on Point Law would be capable of dealing with almost thrice the amount of raw material.

Consideration of Plans and Memorandum.—The plans and memorandum relating to the proposed factory on Point Law for which the North of Scotland Fish Guano Company seek sanction are available for consideration. In terms of our principal report, however, we have to reiterate that any factory sanctioned should be in the nature of a co-operative undertaking, and no such pledge is set forth in the Company's memorandum. In this particular the Company fail to meet what we regard as a fundamental requisite of sanction.

Transference of Site.—The application of the North of Scotland Fish Guano Company cannot, however, be dismissed in this arbitrary fashion without further reference to their application for sanction and their recent record of work. In their application they make it clear that it is a transference of their business that is desired, and that they are prepared to close down their works at Palmerston Road should sanction be obtained for a factory at Point Law. Reference to the twenty-five inch Ordnance Survey map shows that premises adjacent to the Palmerston Road works exist to the following extent:—

Within 100 yards of this site there are 1 dwelling-house, 2 fishcuring premises, and 8 other business premises, including offices.

Within 200 yards there are 27 dwelling-houses, 14 fishcuring premises, and 85 other business premises, including offices.

Within 300 yards there are 30 dwelling-houses, 46 fishcuring premises, and 128 other business premises, including offices.

Within 400 yards there are 195 dwelling-houses, 64 fishcuring premises, and 209 other business premises, including offices.

These figures, however, give no real measure of the undesirability of Palmerston Road as a site for a fish meal factory. Palmerston Road is too near the centre of the City, and, in particular, to the main business and transport part of it, to be regarded as at all suitable. It cannot be compared with the Point Law site, which we regard as the best available site for the establishment of a fish meal factory within the City. To this extent, therefore, the transference of the Palmerston Road Factory to premises at Point Law would be distinctly desirable. Again, there is the Company's record of continuously efficient management of their business in Palmerston Road in recent years as set forth in our principal report, and this warrants consideration by the Town Council.

On the other hand, it has to be kept in mind that the original owners of the works started without the consent of the Town Council before the Offensive Trades Section of the Public Health Act, as applicable to Aberdeen, was amended in 1908 so as to include the manufacture of fish meal. In this connection, therefore, the Company have no claim on the consideration of the Town Council.

Conclusion.—It would be a notable advance towards the achievement of the policy of the Town Council in regard to the control of the fish meal industry, which we have indicated in the conclusion of our principal report as best calculated to secure the amenity of the City and the interests of the fishing industry, were the Palmerston Road Factory to be closed down and replaced by a co-operative factory on Point Law. To attain this result it is necessary that the present conflicting interests should be harmonised.

TYPICAL BACILLUS COLL.

Year.	Samples from.	Absent in 100 c.c. per cent.	Present in 100 c.c. per cent.	Present in 50 c.c. per cent.	Present in 20 c.c. per cent.	Present in 10 c.c. per cent.	Present in 5 c.c. per cent.	Present in 1 c.c. & less per cent.	Remarks.
1923	River Water . . .	...	...	2	...	14	61	23	The water was limed for a total period of 115 days when the river was in a disturbed state after floods, during times of high consupt of water when the filters were inadequate to deal with the quantity of water required, and when resanding of filters was being carried out.
	Invercarnie Filter Outlet	57	20	21	2	..	...	...
	Aberdeen Tap Water	47	30	21	2	...	...	...
1922	River Water . . .	...	6	8	21	27	23	15	The water was limed for a total period of 47 days during times of high consupt of water when the filters were inadequate to deal with the quantity of water required, and when resanding of filters was carried out.
	Invercarnie Filter Outlet	58	27	12	3	...	...	...
	Aberdeen Tap Water . . .	50	37	10	3	...	...	...
Aberdeen Tap Water, 1907, (i.e., before the Water was filtered.)		...	...	13	...	29	33	25	

WATER SUPPLY.

The progress made during 1922 and 1923 with the construction of the new works under the 1916 Corporation Water Act is set forth in the reports of the Water Engineer. In general, it may be stated that the improved condition of the water, from a bacteriological point of view, which was attained during the years 1916-1921, has been largely maintained, and is due (*a*) to the improved and increased storage of the water, (*b*) to the increased filter beds made available for the filtration of the water, and (*c*) in a much less degree to the intermittent use of lime as a sterilising agent.

The instructive Table on page 210, measuring in percentages the degree of purity of the water in terms of bacillus coli, provides evidence of the extent to which these safe-guards have improved the water. The Table shows that during the two years under review Aberdeen tap water at no time contained bacillus coli in less than 20 c.c.s. of water, and only on two occasions in 1923 and on three occasions in 1922 was it present in 20 c.c.s.—at other times being present only in 50 c.c.s. or 100 c.c.s., or absent in 100 c.c.s. These results during the two years under review are not so satisfactory as the results obtained during the years 1916-1921, when a remarkable improvement in the Aberdeen tap water was obtained following on the temporary purification works being instituted; but the results as now recorded are probably to be wholly attributed to interference with the water supply, which progress in the construction of the permanent works necessarily entails.

J. PARLANE KINLOCH.

1st December, 1924.

The first part of the paper is devoted to a general discussion of the problem. It is shown that the problem is of great importance in the theory of the differential equations of the second order. The second part of the paper is devoted to the study of the properties of the solutions of the differential equations of the second order. It is shown that the solutions of the differential equations of the second order are of great importance in the theory of the differential equations of the second order.

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CITY OF ABERDEEN.

REPORT

BY

JAMES CUMMING, Chief Sanitary Inspector,

For the Year ended 31st December, 1922.

STATE OF ARIZONA

REPORT

TABLE OF CONTENTS

For the Year 1901

CONTENTS

	PAGE
Introductory,	3
Complaints,	5
Drainage,	6
Housing—New Houses,	7
Clearance of Slum Areas,	7
Overcrowding,	10
Structural Defects and Want of Repair,	13
Paving of Back Courts and Passages,	14
Verminous Persons and Houses	14
Whitewashing, &c., of Lobbies, Staircases, &c.,	16
Want of Cleanliness in parts of Premises used in Common,	17
Increase of Rent and Mortgage Interest (Restriction) Act, 1920,	20
Smoke Abatement,	21
Offensive Trades,	22
Pig-styes,	23
Workshops,	24
Bake-houses,	26
Dairies, Cow-sheds, and Milk-shops,	28
Shops where Food Stuffs are Sold,	29
Places of Public Refreshment,	30
Meat Inspection,	31
The Sale of Food and Drugs Acts,	34
Rag Flock Act, 1911,	52
Poisons and Pharmacy Act, 1908,	52
Shops Act, 1912, and the Shops (Early Closing) Acts, 1920 and 1921,	53
Extermination of Rats,	55
Common Lodging-houses and Houses let in Lodgings,	60
Sanitary Condition of Theatres, Music Halls, Cinemas, &c.,	60
Port Sanitary Inspection,	61
Infectious Disease,	61
Interment of Unclaimed Bodies,	62
Prosecutions,	62
Appendices,	63

PUBLIC HEALTH DEPARTMENT,
CROWN MANSIONS, 41½, UNION STREET,
ABERDEEN, 29th *September*, 1923.

To
The Scottish Board of Health,
AND
The Lord Provost, Magistrates, and
Town Council of the City of Aberdeen.

GENTLEMEN,

I beg to submit the Annual Report of the work done in the Sanitary Inspector's Department during the year ended 31st December, 1922. The Report has been prepared in accordance with the requirements of the Board as contained in their circular, dated 28th December, 1922.

It will be seen from the record of work done that the Department has had a busy year. Every member of the Staff has worked conscientiously, and I am indebted to them for their whole-hearted co-operation.

COMPLAINTS.

Undernoted is a tabular statement regarding the number of complaints received, all of which were attended to.

	Complaints Received.	No Action Necessary.
(a) Choked or defective drains and sanitary conveniences	648	85
(b) Dampness	60	11
(c) Want of cleanliness	235	122
(d) Overcrowding	158	64
(e) Dwellings infested with vermin	186	30
(f) Nuisance caused by keeping of domestic animals	130	52
(g) Offensive smells	143	80
(h) Accumulations of refuse	154	25
(i) Structural repairs	990	37
(j) Other	105	29
Totals	2,809	535

DRAINAGE.

During the year, the drainage and sanitary arrangements of 39 properties were examined. In 5 of the properties, no defects were found, and the owners of the remaining 34 houses were called upon by the Department to carry out the alterations necessary in order to put the premises in accordance with modern requirements. In 31 cases, the work was completed before the end of the year.

During the year, the Town Council extended the sewer along Back Hilton Road, and the drains of 5 self-contained dwelling-houses, which were formerly discharged into cesspools, are now connected with the sewer.

In the accompanying table, the amount of work done in connection with the drainage of houses is shown.

Defective drains made good	33
Drain properly ventilated	1
Additional water-closets fitted up	2
Water-closet fitted up in lieu of privy	1
Defective water-closets replaced	34
Defective water-closets repaired	40
Soilpipes of water-closets renewed or repaired	20
Ventilation pipes renewed or repaired	15

Water-closet cisterns repaired	184
Overflow pipes from cisterns repaired	13
Pulls for cisterns provided	15
Defective flushpipes repaired	84
Basins of water-closets replaced or repaired	47
Additional water supply provided for water-closets	8
Additional sink provided	1
Additional water supply provided for sink	1
Defective sinks replaced or repaired	21
Defective wash-hand basins replaced or repaired	2
Water supply pipes repaired	43
Water taps repaired	5
Defective bath replaced	1
Waste or rainwater pipes replaced or repaired	133
Lead trap provided for wastepipe	1
Defective grid traps replaced	14
New gratings provided for grid traps	34
New gratings provided for fresh air inlets	4
Traps or fresh air inlets uncovered	2
Additional eaves gutters fitted up	24
Eaves gutters renewed or repaired	98
Defective inspection chamber covers renewed	34
Choked drains and pipes cleared out	1046
Choked water-closets cleared out	158

It will be observed that the number of choked drains and pipes cleared out was 1,046. While this number is considerably smaller than in any of the three preceding years, when the numbers were, respectively, 2,256, 1,355, and 1,456, it must be stated that the number is still far too large, and indicates considerable carelessness or misuse on the part of tenants or their children. Frequently, when clearing out the drains, tradesmen find that such articles as fish heads—and occasionally even whole fish—potato parings, scrubbing brushes, dish cloths, knives, forks, spoons, large stones, pieces of wood, &c., have been deposited therein. It has been the practice of the Department for several years to send a letter to all the tenants of those properties where there was reason to believe that the chokage was due to wilful interference or improper usage, warning them of the penalty imposed by Section 30 of the Public Health (Scotland) Act, 1897. During the year, 212 such letters were sent. Although it is admittedly difficult to find out who is the actual offender, tenants ought to realise that it is a duty they owe to their landlord to see that the drains, w.c.'s, and sinks are not improperly used.

The number of choked w.c.'s cleared out was 158, as compared with 241, 179, and 147 in each of the three preceding years.

HOUSING.

New Houses.

In the Housing Scheme, approved of by the Town Council on 17th November, 1919, the approximate number of houses required was stated to be 4,000.

So far, however, only 156 houses have been erected, although the plans of 86 additional houses—48 three-roomed and 38 four-roomed—have been provisionally approved of by the Board of Health. The maximum number of houses, therefore, which can be erected in Aberdeen under this Scheme is 242.

The size and rental of the 156 houses are as undernoted:—

3-Roomed.	Rental.	4-Roomed.	Rental.
68	£27 10s.	88	£32 10s.

No houses were erected under the Scheme during last year.

Twenty self-contained houses were erected by private enterprise, with the aid of the subsidy provided for this purpose by the Government. In addition, three tenement buildings, comprising 12 two-roomed and 6 three-roomed dwellings were approved of, and these tenements are now fully occupied. They were erected by the Town Council primarily to provide alternative accommodation for a number of tenants who were displaced by the demolition of buildings required for other purposes. After providing for these tenants, however, 6 houses, consisting of 4 two-roomed and 2 three-roomed dwellings, still remaining to be let, were available for other tenants, and for these there was a waiting list of over 70 names. These houses are each provided with a w.c., but have neither sculleries nor bathroom. The rents of the two-roomed houses range from £14 to £15, and of the three-roomed houses from £17 to £17 10s. These rents are undoubtedly the maximum that can be paid by a large section of the citizens for houses of this size.

In 1919 it was estimated that the number of houses required solely to meet the normal growth of population was 2,000, and there is every reason to believe that this number will require to be increased before the wants of the City can be adequately met.

Although there is a considerable demand for houses of the size and rental of the houses erected under the Housing Scheme, there is undoubtedly a still greater demand for houses of a rental ranging from, say, £14 to £18.

The Housing Committee are at present considering what steps should be taken under the Housing, &c., Act, 1923, as regards the erection of additional houses, and it is to be hoped that in the near future some practical solution of the difficulty may be arrived at.

Clearance of Slum Areas.

In December last, the Deputy Medical Officer, the Director of Housing, and myself submitted a report to the Town Council on the three most insanitary districts in the City, which can be defined as—

- (a) The Guestrow district, in which there are 146 insanitary houses comprising 43 one-roomed houses, 80 two-roomed houses, 20 three-roomed houses, and 3 houses of four rooms and upwards.

In the vicinity of this district there are 154 houses—52 one-roomed, 68 two-roomed, 27 three-roomed, and 7 houses of four rooms and upwards requiring to be dealt with.

- (b) The Shuttle Lane district, in which there are 90 insanitary houses, comprising 39 one-roomed houses, 29 two-roomed, 17 three-roomed, and 5 houses of four rooms and upwards.

In the vicinity of this district there are 40 insanitary houses—20 one-roomed, 17 two-roomed, and 3 houses of four rooms and upwards.

- (c) The Shoe Lane district, in which there are 105 insanitary houses, comprising 54 one-roomed, 39 two-roomed, 9 three-roomed, and 3 houses of four rooms and upwards.

All the houses in these areas are either unfit for human habitation, or the narrowness, closeness, bad arrangement, and want of light, air, ventilation, and proper sanitary conveniences are such as to render the houses dangerous or injurious to the health of the inhabitants.

Outwith the areas mentioned, there is a large number of houses throughout the City which are unfit for human habitation. As the result of a survey made in the later months of last year, it was found that no fewer than 564 dwellings could be closed as being unfit for human habitation.

In the majority of cases, the entire properties in which these dwellings are situated are dilapidated, badly lighted and ventilated, and are without adequate water supply and w.c. accommodation.

In other properties, only the dwellings on the ground or attic floors would require to be closed, but these on account of the lowness of the ceilings—which range from 6 to 7 feet in height—and insufficient light and ventilation, are unfit for human habitation. The remaining dwellings in these properties can be made reasonably fit for habitation, and steps are being taken to have this done.

It will thus be seen that 1,099 houses have been scheduled as being unfit for human habitation, and will be closed so soon as alternative accommodation can be provided. It must be understood, however, that this number is no measure of the prevalence of insanitary dwellings. The number could readily be greatly increased without encroaching on the minimum standard of sanitary fitness of a house.

On 5th February, the Town Council resolved to rate meantime for one penny, by which one-third of the scheme could be undertaken in from two to three years.

On 16th April, the Town Council adopted a supplementary report presented to them and resolved, *inter alia*—

- (a) To proceed with one-third of the proposed scheme under Part III. of the Housing of the Working Classes Act, 1890;
- (b) That, for the purpose of providing alternative accommodation for tenants displaced, they should erect 373 dwellings of two apartments each, with bathroom, w.c., and scullery for each dwelling; and
- (c) That the new houses should be three storeys in height, with accommodation for 6 tenants in each house.

The supplementary scheme has now, with certain modifications, been approved of by the Scottish Board of Health.

As illustrative of the difficulty which may have to be faced in finding suitable accommodation for the tenants of the insanitary houses in the three areas referred to, the following table may be of interest:—

	1.—GUESTROW AREA.		2.—SHUTTLE LANE AREA.		3.—SHOE LANE AREA.	
	Number of Houses.	Average yearly rental (incl. taxes).	Number of Houses.	Average yearly rental (incl. taxes).	Number of Houses.	Average yearly rental (incl. taxes).
One-roomed,	95	98/3	59	92/7	54	85/1
Two-roomed,	148	154/3	46	142/11	39	153/7
Three-roomed,	47	235/11	17	187/8	9	184/10
Four-roomed and upwards,	10	264/-	8	276/9	3	269/-
All Houses,	300	153/-	130	134/2	105	124/4

It will thus be seen that the average yearly rental (inclusive of taxes) of the one-roomed houses, ranges from £4 5s. 1d. to £4 18s. 3d.; of the two-roomed houses, from £7 2s. 11d. to £7 14s. 3d.; of the three-roomed houses, from £9 4s. 10d. to £11 15s. 11d.; and of the houses of four rooms and upwards, from £13 4s. to £13 16s. 9d.

The estimated rental of the proposed two-roomed dwellings is £17 (exclusive of taxes) and even at this figure the rent is not an economic one. It is obvious, therefore, that it will be impossible to provide accommodation in new houses at rentals suitable to the displaced tenants. The Town Council at present own a considerable amount of tenement property, and it might be possible to find tenants for the new houses from the tenants of these properties, thus setting free Town Council houses for some of the tenants from the slum areas.

Overcrowding.

There is a large number of overcrowded houses within the City, and the following table gives particulars of the number of houses measured, and the number found overcrowded within the past seven years:—

	1916.	1917.	1918.	1919.	1920.	1921.	1922.	TOTALS.
Houses measured,	1,640	1,406	711	609	709	742	792	6,609
Number found overcrowded, .	90	106	99	58	130	167	137	787
Number where overcrowding was abated,	89	98	82	42	66	78	49	504
Number where excess was not more than $\frac{1}{2}$ adult, .	22	32	18	12	16	27	18	145
Do. do. 1 „ .	27	41	50	18	53	54	48	291
Do. do. $1\frac{1}{2}$ adults, .	22	17	15	14	26	36	29	159
Do. do. 2 „ .	14	11	10	9	17	17	16	94
Do. do. $2\frac{1}{2}$ „ .	3	3	3	3	7	15	10	44
Do. do. 3 „ .	0	2	1	2	5	5	7	22
Do. do. $3\frac{1}{2}$ „ .	0	0	1	0	4	7	4	16
Do. do. 4 „ .	2	0	0	0	1	3	4	10
Do. do. $4\frac{1}{2}$ „ .	0	0	1	0	1	1	1	4
Do. do. 5 „ .	0	0	0	0	0	2	0	2

Reference to this table shows that overcrowding which cannot be abated, and is measured by 400 cubic feet of air space per adult, is greatly increasing. Prior to 1918, overcrowding which could not be abated was practically unknown. In 1918, the number of such cases was 17; in 1919, 16; in 1920, 64; in 1921, 89; and in 1922, 88.

It will be observed also that in recent years, as is to be expected so long as the shortage of houses continues, the number of houses where the excess has been greater than two adults has greatly increased. Thus, the number of such houses in 1921 and 1922 was, respectively, 33 and 26, as compared with 5 in 1916, 5 in 1917, 6 in 1918, 5 in 1919, and 18 in 1920.

Undernoted are particulars as to some of the worst cases discovered in 1922:—

- (a) In a two-roomed house there were living the father, mother, six sons (aged, respectively, 21, 20, 12, 6, 4, and 6-12th years), and six daughters (aged, respectively, 17, 16, 13, 9, 7, and 2 years)—a total of 11 adults, whereas there is accommodation in the house for $6\frac{1}{2}$ adults only.

This family has failed to find additional accommodation, but the number sleeping in the house meantime has been reduced to $8\frac{1}{2}$ adults.

The total earnings coming into this house are £5 12s. per week, so this family is not so handicapped financially as some other families are.

- (b) In a two-roomed house there were living the father, mother, five sons (aged, respectively, 16, 12, 6, 4, and $2\frac{1}{2}$ years), and three girls (aged, respectively, 11, $1\frac{1}{2}$, and 5-12th years)—a total of $7\frac{1}{2}$ adults, whereas there is accommodation for $3\frac{1}{2}$ adults only.

All efforts to obtain a larger house have failed, and the house is still overcrowded to the extent indicated above.

The householder, who is a boxmaker, was unemployed for a considerable time but is now in full work. The boy of 16 is now in steady employment as a fishworker. Total weekly income £3 5s.

- (c) In a one-roomed house there were living the father, mother, six sons (aged, respectively, 16, 15, 12, 7, 5, and 4 years, and two daughters, aged, respectively, 3 and 3-12th years)—a total of $7\frac{1}{2}$ adults, whereas there is accommodation for $3\frac{1}{2}$ adults only.

In this case, also, all efforts to obtain a larger house have failed, and the house is still overcrowded to the extent indicated above.

The father has, with the exception of three months temporary work, been unemployed for upwards of two years, and the only wage earner is the boy of 16, who is a combworker earning 28s. weekly. The total income of the family is £2 14s. per week.

- (d) In a one-roomed house there were living a mother, with her married daughter and five children (aged, respectively, 10, 9, 7, 4, and $1\frac{1}{2}$ years)—a total of 5 adults, whereas there is accommodation for 1 adult only.

The married daughter has now obtained a house large enough to accommodate her family and herself, so that the overcrowding has been abated.

- (e) In a three-roomed house, there were living the mother, four sons (aged, respectively, 30, 28, 14, and 11 years), and four daughters (aged, respectively, 24, 20, 19, and 16 years)—a total of 9 adults, whereas there is accommodation for 5 adults only.

This family has also failed to find additional accommodation, but the number meantime living in the house is reduced to 7 adults.

With one exception—the boy of 14, who earns 9s. weekly—all the working members of this family have been unemployed for a considerable time, and the total weekly income is 42s. The daughter aged 24 is a chronic invalid.

- (f) In a two-roomed house there were living the father, mother, six daughters (aged, respectively, 14, 11, 9, 8, 3, and $1\frac{1}{2}$ years), and three sons (aged, respectively, 12, 6, and 2-12th years)—a total of 8 adults, whereas there is accommodation therein for $4\frac{1}{2}$ adults only.

This family has failed to find additional accommodation, but the number sleeping in the house meantime has been reduced to 5 adults.

The householder is a casual dock labourer, and his weekly wages for a considerable period have ranged from 13s. to 18s. The two daughters are jute workers, earning, respectively, 15s. and 20s. per week, so that the total income of the family ranges from 48s. to 53s. per week.

- (g) In a two-roomed house there were living the father, mother, five daughters (aged, respectively, 14, 12, 8, 6, and 2 years), and two sons (aged, respectively, 5 and 2-12th years)—a total of $6\frac{1}{2}$ adults, whereas there is accommodation therein for 3 adults only.

In this case, also, all efforts to obtain a larger house have failed, and the house is still overcrowded to the extent indicated. The total income of the family is £3 5s. 6d. per week.

- (h) In a two-roomed house there were living the mother, three sons (aged, respectively, 25, 23, and 17 years), and two daughters (aged, respectively, 15 and 12 years)—a total of 6 adults, whereas there is accommodation for $2\frac{1}{2}$ adults only.

The overcrowding has now been abated by the family obtaining the use of an additional room.

- (i) In a two-roomed house there were living the father, mother, three daughters (aged, respectively, 19, 11, and 3 years), and two sons (aged, respectively, 14 and 9 years)—a total of 6 adults, whereas there is accommodation for $2\frac{1}{2}$ adults only.

This family has also failed to find additional accommodation, and the house is still overcrowded to the extent indicated above.

The householder—a ship painter—has been unemployed for a considerable period until quite recently. The only other wage earning member of the family is the daughter of 19 who is a fishworker—her weekly wages ranging from 7s. to 12s. 6d. The maxima wages coming into this house are 48s 6d.

Apart, however, from the question of overcrowding as judged by a standard of cubic capacity, there must be kept in mind the unsatisfactory conditions which exist in a large number of houses in the City as regards the non-separation of the sexes.

Sub-letting on the part of tenants has become very common in recent years, owing to the high prices which can be commanded for the use of furnished rooms. Prior to the war there was practically no sub-letting in Aberdeen. In 1921, however, as disclosed by the Census, 1,272 houses, or 3·5 per cent. of all the houses in the City were found to have sub-let portions. There is no reason to believe that the number of sub-let houses has been materially reduced since the Census was taken. In all the sub-let portions of the smaller sized houses a separate water supply is not available.

If these sub-let portions of houses were to be permanently let as such by the owners, the Department would insist upon a water supply being introduced into each separate dwelling. The majority of the houses are, however, sub-let without the consent of the owner, who has no desire to reduce the size of the houses, and who if an effort were made to compel the introduction of a water supply for each separate dwelling, would, no doubt, appeal to the Court on the ground that the houses were neither sub-let by him nor with his consent.

It is, therefore, evident that 1,272 new houses would at once be absorbed in remedying sub-letting. For the abatement of the overcrowding shown in the foregoing table, 283 additional houses are required. Further houses must, therefore, be provided before the Department can fulfil its statutory duty of securing the abatement of overcrowding on a standard of 400 cubic feet of air space for each adult occupant.

Structural Defects and Want of Repair.

A complete sanitary survey is made of all houses in which a case of tuberculosis has occurred, or to which a person suffering from that disease has removed.

The number of surveys made in each of the past seven years was as follows:—

1916	1,475	1920	590
1917	1,230	1921	571
1918	575	1922	532
1919	465		

The decreased number of houses surveyed during recent years is due to the comparatively small number of removals which have taken place.

All structural defects and want of repair found in these houses were dealt with. Special attention was paid to the proper ventilation of the sleeping apartments and to their freedom from dampness.

Within recent years a large amount of work has been done by the Department in order to secure that the windows of all sleeping apartments can be easily opened for purposes of ventilation. During the six years ending 1914 the windows of 4,590 sleeping apartments were altered so as to be conveniently and easily opened to one-third of their extent. The result has been that there are now comparatively few windows which do not comply with this requirement, so that during 1922 only 9 apartments were dealt with. The numbers in the three preceding years were:— 68 in 1919, 43 in 1920, and 24 in 1921. It is gratifying to find that, generally speaking, the tenants are taking full advantage of the opportunity afforded them of improving the conditions in which they live.

In 119 dwelling-houses, steps were taken to remedy dampness—in 70 of the cases the dampness being due to the defective condition of the roof covering. In some of the older houses it is, on account of the nature of their construction, almost impossible to provide an effective remedy for dampness, and the alternative in ordinary times would be to close the house.

In the inspection of houses, careful attention is paid to the condition of the floors, walls, and ceilings. During the past year, the floors of 67 dwelling apartments were repaired, as were also the floors of 201 lobbies and stair landings (including stair steps). In every house inspected the wash-house, w.c.'s, and cellars are examined, and particulars of the work done in this connection are found on pp. 18-19. In 246 dwelling apartments, 791 lobbies and staircases, 274 water-closets, 167 wash-houses, and 61 pends, the plaster on the walls and ceilings was repaired.

As will be seen on p. 19, the woodwork around the sinks was renewed in 72 houses; 35 defective chimneys and 65 grates or fireplaces were repaired; while the doors of dwelling apartments were renewed or repaired in 166 cases.

Very little difficulty has been experienced in getting landlords to carry out the necessary repairs. There is no doubt that a considerable amount of the want of repair in a number of houses is due to carelessness or malicious mischief on the part of tenants or their families. As evidence of this it may be stated that during the year, 594 windows or rooflights were reglazed at the instance of the Department. In 1,539 cases broken plaster on the walls and ceilings of dwelling-rooms or in parts of the property used in common by the tenants had to be repaired. I am of opinion that in a great many instances the damage was caused by culpable negligence or malicious mischief on the part of some persons.

In this connection, it would be helpful if, as suggested in a previous report, the legislature extended to all houses the provisions of Section 49 of the Housing and Town Planning (Scotland) Act, 1919, which enacts that "any person who wilfully or by culpable negligence, damages or suffers to be damaged any house provided for the working classes *under the Housing Acts*, or any of the fittings or appurtenances of any such house, including the drainage and water supply and any apparatus connected with the drainage or water supply, and the fence of any enclosure, shall be liable, on summary conviction, to a penalty not exceeding forty shillings without prejudice to any remedy for the recovery of the amount of the damage."

Paving of Back Courts and Passages.

Except in cases where the work was urgently required, the paving of courts and passages has not, on account of the heavy cost of material and labour, been insisted upon within recent years. During the summer of last year, however, a commencement was made with a systematic inspection of all the back courts in the City, and before the close of the year 5 courts and 12 passages were paved, and 91 courts and 62 passages repaired.

Verminous Persons and Houses.

Under the agreement between the Education Authority and the Town Council for dealing with verminous persons and houses, 80 families, comprising 480 persons were removed to the Disinfecting Station for treatment. In the previous year the numbers were 109 and 602 respectively.

Undernoted are particulars of the work done under the agreement in each of the past seven years.

	SCABIES.			VERMIN.		
	Number of Houses Disinfected.	Number of Families Cleansed at Cleansing Station.	Total Number of Persons Cleansed.	Number of Houses Disinfected.	Number of Families Cleansed at Cleansing Station.	Total Number of Persons Cleansed.
1916 . . .	28	28	134	24	24	144
1917 . . .	19	19	106	45	39	185
1918 . . .	23	22	109	18	14	117
1919 . . .	21	21	72	37	17	100
1920 . . .	71	71	266	78	45	300
1921 . . .	52	52	267	93	57	335
1922 . . .	38	38	220	70	42	260
TOTALS . . .	252	251	1,174	365	238	1,441

It will be seen that during last year there is a considerable decrease in the number as compared with each of the preceding two years.

The Education Authority continue to make an earnest endeavour to deal with this question, and it is gratifying to be able to report that since 1918 they have not found it necessary to institute legal proceedings against any persons for refusing to allow their families to be cleansed or for allowing their families to be re-infested with vermin after having been treated at the Cleansing Station.

In addition to the foregoing, the following table gives particulars as to the number of other persons treated at the Cleansing Station during the same period:—

	SCABIES.		VERMIN.	
	Number of Persons Cleansed.	Including Army and Navy Cases.	Number of Persons Cleansed.	Including Army and Navy Cases.
1916	25	8	205	181
1917	72	47	254	247
1918	105	75	207	161
1919	92	20	139	110
1920	114	5	34	17
1921	33	1	72	34
1922	24	3	49	21
TOTALS	465	159	960	771

There is a fairly large number of houses in the City infested with bugs. Two years ago the Department adopted the practice of serving notices under Section 40 of the Public Health (Scotland) Act, 1897, on both owner and occupier in all such cases. Along with the notice to the owner was enclosed a letter informing him that if all the paper was removed from the walls and the skirtings and door facings stripped, the Department was prepared to fumigate thoroughly with sulphur all the infested rooms. It was also made a condition that after fumigation all broken plaster should be properly repaired, the woodwork washed with a disinfectant solution which is supplied gratuitously, and the walls distempered in place of being re-papered.

The occupier was also informed that if he were prepared to treat all the furniture and furnishings in the house in the manner described in the Instructions sent him, the Department would supply the necessary disinfectant, and would also remove for steam disinfection all articles of clothing and bedding which could not be boiled.

During the year, 81 houses were dealt with in the manner described, as compared with 154 houses in the previous year. This method of dealing with bug-infested houses continues to give very satisfactory results.

Filthy Houses.

A sharp lookout is kept by the District Inspectors for all houses which are in a filthy condition, and during the year the floors of 125 dwelling apartments, the articles of furniture in 117 apartments, and 127 sets of bed and body clothing were cleaned. In the previous year the corresponding numbers were 78, 74, and 71, respectively.

As has been stated in previous Reports, filthy conditions are frequently found in the homes of the aged and infirm poor. This is a type of case which it is very difficult to deal with, as frequently those persons are living alone and are prone to resent any assistance being given by friends or neighbours. Until old age or sickness overtook them, no fault could be found with the manner in which their houses were kept. The Parish Council work in co-operation with the Department, and are ready at all times to admit such cases to their hospital. There is invariably, however, a great reluctance on the part of such persons to agree to this course. Their independence is commendable, but the question of their personal welfare and safety, as well as that of other persons dwelling in the same tenement, cannot be overlooked. The necessity of obtaining powers, in the interests of the public health, for having such persons and their houses better looked after has frequently been advocated.

Cleaning of Walls and Ceilings of Dwelling Apartments, Lobbies, Staircases, W.C.'s, Wash-houses, &c.

During the year, the walls and ceilings of 158 dwelling apartments were distempered or re-papered. In the previous year, the number was 133.

The walls and ceilings of 2,043 lobbies and staircases, 438 passages or pends, 3,601 water-closets, 1,655 wash-houses, and 31 drying lofts were whitewashed or

otherwise cleaned. In the previous year, 1,794 lobbies and staircases, 323 passages or pends, 3,152 water-closets, 1,593 wash-houses, and 38 drying lofts were similarly cleaned.

The cleaning of the walls and ceilings of lobbies and staircases was regularly seen to annually during the war period, although at that time the standard of cleanliness was somewhat relaxed. During the last three years, however, the standard has been raised considerably, and it is gratifying to be able to report that during the past year it was not found necessary to take legal proceedings against any proprietor for failure to comply with these requirements.

Want of Cleanliness of W.C.'s, Lobbies, Staircases, Back Courts, and other Parts of Premises used in Common.

During the year, notices were served upon 177 sets of tenants, embracing 1,014 individual tenants, regarding their failure to keep clean the parts of the premises used in common by them.

The necessary cleaning was carried out in every case without having recourse to prosecution.

Accumulations of Ashes, Filth, and other Rubbish.

Although 281 accumulations of ashes, filth, and other rubbish were removed, as compared with 287 in the preceding year, this number is considerably less than in some previous years. For example, in 1914 the number was 766.

At one time it was a common practice of the jobbing gardeners to dump rubbish in the lanes at the rear of dwelling-houses in the west end of the City. As the result of a circular letter sent to all such gardeners two years ago, this practice has virtually ceased. It is occasionally found, however, that householders are guilty of a similar practice and have been known to go a considerable distance before they obtained what was considered by them a suitable dumping place. They would never think, of course, of depositing such rubbish in their own back lane, but have evidently no scruple in depositing such rubbish in a neighbouring back lane. It is manifestly unfair that the owner or occupier of the house at the rear of which the rubbish is deposited should be called upon to bear the expense of removing the same, and every effort is made to trace the offender who is called upon to remove the rubbish.

Another filthy habit is the throwing of refuse from the windows of dwelling-houses on to back courts or, as sometimes happens, on to ground or outhouses connected with the adjoining property. During the year, 242 letters of warning were sent to householders regarding this practice.

Accumulations of ashes, filth, and other rubbish removed	281
Accumulations of stagnant water removed	28
Cesspools cleaned out	3
Cesspools closed up	5
Privies provided with pails	4

Accumulations of manure removed	20
Manure pits provided	2
Manure pits repaired	3
Courts paved	5
Passages paved	12
Courts repaired	91
Passages repaired	62
Lanes repaired	9
Unsuitable apartments disused as sleeping apartments	5
Overcrowding abated	49
Enclosed bed opened up	1
Improved window ventilation for dwelling apartments	9
Broken sashcords renewed	93
Broken quadrants renewed or repaired	87
Windows of dwelling apartments reglazed or repaired	231
Roof-lights of dwelling apartments reglazed or repaired	10
Windows or roof-lights of lobbies or staircases reglazed	134
Windows or roof-lights of water-closets reglazed	90
Windows or roof-lights of wash-houses reglazed	129
Additional ventilation provided for staircases	8
Additional ventilation provided for water-closet apartments	10
Additional ventilation provided for wash-houses	2
Walls of dwelling-houses repaired	3
Walls of dwelling-houses reharled	5
Damp dwelling-houses remedied	49
Roof coverings of dwelling-houses repaired	70
Roof coverings of water-closets and wash-houses repaired	27
Plaster on walls and ceilings of dwelling-houses repaired	246
Plaster on walls and ceilings of lobbies and staircases repaired	791
Plaster on walls and ceilings of pends and passages repaired	61
Plaster on walls and ceilings of water-closets repaired	274
Plaster on walls and ceilings of wash-houses repaired	167
Walls and ceilings of dwelling apartments whitewashed or repapered	158
Walls and ceilings of lobbies and staircases whitewashed or otherwise cleaned	2,043
Walls and ceilings of passages whitewashed	351
Walls and ceilings of private pends limewashed	87
Walls and ceilings of water-closets whitewashed	3,601
Walls and ceilings of wash-houses whitewashed	1,655
Walls and ceilings of drying lofts whitewashed	31
Floors of dwelling apartments repaired	67
Floors of lobbies, landings, and stairsteps repaired	201
Wash-houses repaired—	
Roofs	46
Walls	13

Floors	50
Doors	24
Tubs	25
Brickwork of boilers	107
Furnaces	17
Boilers repaired or renewed	38
Flues	5
Windows	15
Water-closet apartments repaired—	
Roofs	40
Walls	18
Floors	16
Doors	61
Seats	131
Windows	4
Cellars repaired—	
Roofs	20
Walls	14
Floors	2
Doors	25
Locks	5
Locks for water-closet apartments provided or repaired	33
Water-closet apartment opened up	1
Woodwork around sinks renewed or repaired	72
Defective chimneys repaired	35
Grates and fire-places repaired	65
Doors of dwelling-houses repaired or provided	73
Door furniture renewed or repaired	93
Woodwork of cupboards repaired	6
Stair handrails or balustrades repaired	27
Linoleum coverings of lobbies, stair steps, &c., repaired or renewed	49
Clothes poles renewed or repaired	2
Boundary walls repaired	7
Palings repaired	3
Lanes cleaned	8
Back courts and areas cleaned	93
Passages cleaned	50
Entrance lobbies, stair steps, and landings cleaned	79
Floors, seats, and basins of water-closets cleaned	131
Floors of wash-houses cleaned	24
Floors of drying lofts cleaned	20
Sink cleaned	1
Washtub cleaned	1
Floors of dwelling apartments cleaned	125
Dwelling apartments in which articles of furniture were cleaned	117

Sets of bed and body clothing cleaned	127
Nuisances caused by domestic animals abated	85
Offensive smells in dwelling apartments abated	26
Houses cleared of bugs	81

INCREASE OF RENT AND MORTGAGE INTEREST (RESTRICTION) ACT, 1920.

The above-mentioned Act, which in Scotland is applicable to houses of an annual rent not exceeding £90, empowers a landlord, subject to certain conditions, to make specified increases in the rent. The occupier, however, is entitled to apply to the Sanitary Authority for a certificate on the ground that the house is not in all respects reasonably fit for human habitation or is otherwise not in a reasonable state of repair. If a certificate is granted, application can be made in the Sheriff Court for an order suspending the increase until the Court is satisfied, on the report of the Sanitary Authority, or otherwise, that the necessary repairs (other than the repairs, if any, for which the tenant is liable) have been executed; and on the making of such an order, the increase shall cease to have effect until the Court is so satisfied.

In 1922, only four applications for certificates were received, and in three cases, certificates were granted. In the remaining case, the necessary work was carried out prior to the application being reported on to the Committee. In 1920, the number of applications was 15, 10 certificates being granted; while in 1921, the number of applications was 22, and the number of certificates granted was 10. In no case since the Act came into operation has it been necessary to make application to the Court for an order to suspend the increase.

In addition to the four formal applications, however, 35 complaints were received from tenants regarding the condition of their houses, and in lodging the complaints, specific reference was made to the provisions of the above-mentioned Act. Of these complaints, only one was found to be not justified. The numbers of similar complaints in 1920 and 1921 were, respectively, 218 and 89, and the numbers which did not warrant any action on the part of the Department were respectively, 14 and 3.

On the houses being inspected, it was found that, except in the cases already mentioned, certain repairs were required, and notices were served upon the owners calling upon them to execute the necessary work. Along with the notice was sent a letter pointing out the provisions of Section 2, Sub-Section 2 of the Act. As a rule, these notices were immediately complied with, and this accounts for the small number of formal applications received. The defects dealt with included dampness; defective roof coverings; flooring, stairsteps, windows, doors (including door furniture), cupboards, fireplaces, wash-houses (including wash-house boilers and tubs), and coal cellars out of repair; defective w.c.'s and sinks; broken plaster; torn and dirty wall paper; and broken window sash cords.

There is no doubt that the provisions of the Act have been helpful in enabling the Department to have necessary repairs carried out.

SMOKE ABATEMENT.

Although Aberdeen, as compared with many industrial towns, is comparatively free from nuisance caused by the excessive emission of dense smoke, it must be admitted that the quantity of smoke discharged from time to time from some of our factory chimneys is greater than it should be.

During the year, 109 observations—each of an hour's duration—were made of the quantities of smoke discharged from factory chimneys, and in 20 cases "Intimations of Nuisance" under the Public Health (Scotland) Act, 1897, were served upon the proprietors.

In every instance an improvement was effected—at least temporarily—by more careful attention to the methods of firing and to the kind of fuel use. It is, however, difficult for a manufacturer to control either of these two things, and there is no doubt that in some cases the nuisance can only be permanently remedied by the provision of mechanical stokers or some adequate smoke-consuming apparatus.

During the year, "Johnson's Patent Smoke Consumer" was fitted to two ranges of boilers, and has given every satisfaction, both to the manufacturers and to this Department. "Crossthwaite's Patent Furnace Bars" have also been fitted to some boilers, and equally good results have been obtained in the premises where they are in use. During the current year, the proprietors of several other works have given orders for the provision of a smoke-consuming apparatus, and it is to be hoped that others will follow their example. In several of the largest factories in the City, the proprietors have recently, with the assistance of their engineers and chemists, been devoting considerable attention to the methods of firing and the nature of the fuel. Their experience, however, has proved that the quality of fuel varies so much from time to time, even although obtained from the same merchant, that it is impossible to prevent the excessive emission of smoke unless some means of consuming the smoke is adopted.

In a report submitted to the Ministry of Health in 1921, by the Departmental Committee on Smoke and Noxious Vapours Abatement, it was recommended that the present law should be altered so as to provide that every manufacturer should take all practicable steps, having regard to all the circumstances of the cases, to prevent the pollution of the air by smoke or any other noxious emission from his works. The Committee considered that a law in this form would be preferable to an absolute prohibition, which it is impossible to enforce without destroying some manufactures.

The Committee further considered that this legal obligation should be placed on all manufacturers, users and occupiers of any business premises or processes, engines, or plant of any description whatever from which smoke is or may be emitted.

As a sequel to this report, a Bill dealing with smoke abatement is at present before Parliament.

OFFENSIVE TRADES.

Slaughter-houses.

At the end of 1922, there were five slaughter-houses in the City, with 33 slaughter booths. The situation of these premises is as follows:—

Situation.	No. of Booths.
Hutcheon Street	25
Canal Place	1
Charles Street	3
Western Road, Woodside	2
Deer Road, Woodside	2
	—
	33
	—

The premises are kept in good repair and in a cleanly condition.

It was not found necessary during the year to institute legal proceedings against any person for a contravention of the Bye-laws.

Other Offensive Trades.

At the end of the year there were 26 firms in the City who carry on one or more of the businesses set forth in the Public Health Act as coming within the definition of offensive trades.

The following is a list of the offensive businesses carried on:—

Bone Boilers	6	Fish Meal Manufacturer	1
Tallow Melters	13	Tripe Boilers	3
Skinners or Hide Factors	5	Gut or Tripe Cleaners	4
Knackers	2	Blood Boilers	3
Tanner	1	Soap Boiler	1
Fish Oil Manufacturers	3	Manufacturer of Albuminoid	
Manure Manufacturers	5	Substances from Fish	1

Total, 48.

During the year, the Town Council sanctioned the establishment of the business of tallow melting and bone boiling, subject to the following conditions:—

- (1) That adequate means are used for preventing the escape of offensive effluvia into the outer atmosphere; and
- (2) That the applicants adhere to the obligation contained in their letter of application that they will cease to carry on the business of tallow melting and bone boiling within their premises, in the event of the business being so conducted as, in the opinion of the Town Council, to cause a nuisance.

All the premises in which offensive trades are carried on are visited frequently, some of them daily.

Several complaints were received during the year regarding offensive smells from premises where the businesses of hide factoring, gut cleaning, tallow melting, and

bone boiling are carried on. The premises are situated in the centre of the City, and are surrounded by dwelling-houses. The most offensive part of the business is gut cleaning, and there is no doubt that the neighbourhood will never be free from offensive smells so long as this business is carried on in the premises. In 1916, the proprietors stated that they had had for some time under consideration the idea of removing their sheep-gut department to a less populous district, provided suitable accommodation could be had. The difficulties, however, in regard to labour and other matters rendered this impracticable at the time. They undertook to go seriously into the matter whenever things became normal.

Complaints have also been received regarding offensive smells from fish meal works, and from premises in which bone boiling is carried on. In both cases, the nuisance was of a temporary nature and was caused by leaks in the digesters. This experience, however, proves the necessity of the proprietors of such works making every effort to secure that the apparatus used by them is at all times kept in perfect working order.

As regards the fish manure factory at Cove—four miles distant—offensive smells from which have in past years been observed from time to time within the City, it was stated in a previous report that in the autumn of 1921 new arrangements had been made regarding the treatment of the fumes. For a considerable time thereafter no offensive smell from these works was observed within the City.

On several occasions, however, during the summer months of the year under review, there was a recurrence of the offensive smells, and the Department communicated with the proprietors of the works and the County Authority with a view to steps being taken to prevent a recurrence of the nuisance. There can be no doubt that the offensive smells referred to were proceeding from Cove manure works, whatever be the reason for the failure to prevent the escape of offensive effluvia.

PIG-STYES.

At the end of 1922, there were 76 premises on the register, 17 of these having been licensed under the "Additional Bye-laws" made by the Town Council in 1916. To these, 377 visits were made in the course of the year in order to ensure that they were being kept in conformity with the Bye-laws.

The undernoted requirements were given effect to:—

Walls and ceilings of pig-styes limewashed	379
Walls and ceilings of boiling-houses limewashed	24
Additional ventilation provided for pig-styes	14
Walls of pig-styes repaired	4
Roof of pig-sty repaired	1
Floors of pig-styes repaired	41
Floors of boiling-houses repaired	2
Partition walls repaired	9
Boiling-houses repaired	3
Courtyards repaired	10

Passages repaired	2
Manure pits repaired	3
Feeding troughs repaired or renewed	39
Floors of pig-styes cleaned	17
Floors of boiling-houses cleaned	10
Feeding troughs cleaned	2
Courtyards cleaned	10
Passages cleaned	2
Improved means of drainage provided	2
Cesspool cover renewed	1
Cesspools emptied	18
Accumulations of manure removed	9
Windows and rooflights re-glazed	8
Windows cleaned	2
Ditch cleaned	1

WORKSHOPS (excluding BAKEHOUSES).

The number of workshops (excluding bakehouses) on the register at the end of 1921 was 788. During the year, there were 55 added, 51 closed, and 17 converted into factories by the introduction of motive power. The number, therefore, at the end of 1922 was 775.

There were 2,524 visits made to the different factories and workshops, and 336 notices were issued with reference to sanitary requirements in connection with these premises. The notices dealt chiefly with the limewashing or cleaning of the walls and ceilings of workshops and w.c. apartments, the cleaning of floors, seats, and basins of w.c.'s, the repair of defective w.c.'s, and the removal of accumulations of rubbish and manure.

Three notices were received under Section 5 of the Factory and Workshops Act, 1901, which provides that the Factory Inspector should give intimation to the Local Authority of any sanitary defect in a factory or workshop remediable under the Public Health Act.

These notices were dealt with as follows:—

No.	Defect or Nuisance Intimated.	Remarks.
1.	Drain opening in floor of confectionery bakehouse	No action taken. Drain, which is trapped, conveys no faecal matter.
2.	(a) Workroom overcrowded	(a) Workroom measured, and found to contain space for persons employed.
	(b) Annexe at rear of shop in a dilapidated condition	(b) Notice served, and walls and ceiling repaired.
3.	Limewashing required	Notice served, and limewashing carried out.

Eleven notices were received under Section 9 of the Act and the Sanitary Accommodation Order, 1903. Seven of these notices dealt with the want of sufficient

w.c. accommodation, and the remaining four notices with the absence of an intervening ventilating space between the workshop and the water-closet. The duty of enforcing these notices rests with the Factory Department, but the Local Authority are notified in order that they may have the opportunity of enforcing at the same time any additional conditions under the Public Health Act which they think desirable.

Fourteen notices of Occupation were also received from the Factory Inspector.

As required by Section 107 of the Act, the occupiers of all factories or workshops employing outworkers sent lists of those to the Department twice during the year. Altogether, 24 lists were received, embracing 168 outworkers. The homes of all the local outworkers were visited, and the names and addresses of all those resident outwith the City were sent to the officials of the districts in which they reside.

Inspection of Plans.

The plans of 21 premises were, at the request of the Plans Committee, reported on by the Medical Officer of Health and myself, and recommendations made and agreed to.

Eight of these plans were in connection with fishcuring premises, and the recommendations chiefly referred to the lighting and ventilation of the premises, the proper screening of the w.c.'s, and the provision of dung-pits.

Of the remaining plans, five were bakehouses, three pig-styes, two dairy shops, a chemical work, a slaughter-house, and a stable.

The plan of the proposed alteration of a bakehouse was not approved of on account of the bakehouse being an "underground bakehouse" within the meaning of the Act.

The accompanying table gives a detailed account of the work done during the year, and in Appendix III. is given a list of the workshops as at 31st December, 1922.

On register at beginning of year	788
Added during year	55
Closed during year	51
Converted into factories	17
On register at end of year	775
Number of visits paid	2,524
Walls and ceilings of workshops limewashed or otherwise cleaned	65
Walls and ceilings of water-closets limewashed or otherwise cleaned	35
Staircases or passages limewashed	4
Basins of water-closets cleaned	70
Floors of water-closets cleaned	35
Seats of water-closets cleaned	23
Wash-hand basins cleaned	2
Floors of workshops cleaned	9
Floors of staircases or passages cleaned	7

Plaster on walls and ceilings of workshops repaired	5
Plaster on walls and ceilings of water-closets repaired	2
Locks provided for water-closets	5
Seats of water-closets repaired or renewed	5
Doors of water-closets repaired	3
Defective water-closets repaired	10
Defective rainwater pipes repaired	2
Choked drains or pipes cleared out	16
Additional water-closet accommodation provided	4
Additional water supply provided for water-closet	1
Windows cleaned	1
Additional privy provided	1
Privy cleaned out	1
Overcrowding abated	1
Sashcords renewed	2
Means provided for conveying gas fumes into chimney	2
Floors of workshops repaired	3
Windows reglazed	5
Courtyards repaired	2
Courtyards cleaned	20
Accumulations of rubbish removed	27
Accumulations of manure removed	12
Accumulations of fish offal removed	7
Stances provided for fish offal receptacles	1
Other complaints removed	17

BAKEHOUSES.

There were at the end of the year 77 bakehouses in the City, 35 of these being classed as factories and 42 as workshops.

In connection with these, 388 visits were paid, and 333 notices were issued. These notices referred chiefly to the limewashing or cleaning of the walls and ceilings of bakehouses, stores, and w.c.'s, the cleaning of the floors, baking tables, and utensils, and the cleaning of the floors, seats, and basins of water-closets.

Undernoted will be found details of the work done:—

On register at beginning of year	75
Added during year	2
Closed during year	0
On register at end of year	77
Number of visits paid	388
Bakehouses limewashed	46

Glazed walls cleaned	16
Pastry rooms limewashed	8
Stores or cellars limewashed	29
Water-closets limewashed	18
Passages limewashed	2
Cloakrooms limewashed	5
Floors of bakehouses cleaned	26
Floors of stores cleaned	12
Floors of pastry rooms cleaned	6
Floor of cloakroom cleaned	1
Stair steps and passages, &c., cleaned	5
Floors of water-closets cleaned	15
Basins of water-closets cleaned	15
Seats of water-closets cleaned	13
Windows cleaned	21
Sinks or wash-hand basins cleaned	9
Ovens and hot-plates cleaned	22
Baking machines cleaned	18
Steam presses cleaned	8
Bakehouse tables cleaned	20
Baking utensils cleaned	12
Bread boxes cleaned	6
Shelves cleaned	5
Woodwork of doors cleaned	13
Courtyards cleaned	2
Choked water-closets cleared out	2
Defective sinks repaired	2
Defective water-closets repaired	3
Defective wastepipes repaired	2
Floors of bakehouses repaired	2
Floor of water-closet repaired	1
Bakehouse tables repaired	2
Woodwork of door repaired	1
Additional ventilation provided for water-closets	3
Cords provided for windows and roof-lights	8
Seats of water-closets repaired	4
Plaster on walls and ceilings of bakehouses repaired	4
Plaster on walls and ceiling of flour store repaired	1
Windows reglazed	4
Accumulations of rubbish and manure removed	11
Cloakroom accommodation provided	1
Covers provided for food receptacles	1
Suitable accommodation provided for storing	4
Nuisance caused by domestic animals abated	1

DAIRIES, COWSHEDS, AND MILKSHOPS.

At the end of the year there were 634 persons registered to purvey milk (including ice cream) within the City. This number includes farmers who, although they have not premises within the City, retail milk from carts. The number shows an increase of 88 as compared with the previous year, the difference being almost solely due to the increase in the number of ice cream shops.

The number of cowsheds is being steadily reduced year by year, and at the close of 1922 they numbered only 19, as compared with 22 in the previous year.

All the dairies and milkshops are regularly visited by one of the assistant Inspectors, and every effort is made to increase the standard of cleanliness and tidiness in these premises. During the year, the number of visits was 2,488, as compared with 2,133 in the previous year. In no case was it necessary to institute legal proceedings against any person for failing to keep his premises in conformity with the regulations.

The herds in all the byres are regularly examined by Mr. James M'Allan, Veterinary Inspector, who also looks after the sanitary condition of these premises.

Undernoted are particulars of the work done:—

Walls of milkshops cleaned	230
Ceilings of milkshops cleaned	129
Ceilings of back rooms cleaned	102
Walls of staircases to basement whitewashed	2
Windows cleaned	18
Door painted	1
Shelves, counters, and other fittings cleaned	32
Sinks cleaned	16
Woodwork of sinks cleaned	7
Milk vessels cleaned	15
Stair steps cleaned	5
Floors cleaned	61
Floors, seats, and basins of water-closets cleaned	5
Doors communicating with common lobbies closed up	10
General cleanliness improved	10
Floor coverings renewed or repaired	41
Counter coverings renewed or repaired	2
Floors repaired	14
Plaster repaired	16
Skirting repaired	1
Shelves repaired or provided	2
Roof coverings repaired	2
Partitions erected	2
Milk vessels renewed	2
Covers for milk vessels provided	2
Warnings given regarding covers not being used	12

Washtub repaired	1
Sinks provided	2
Additional water supply provided from main	2
Woodwork of sinks repaired	3
Means of heating water provided	3
Cistern repaired	1
Water-closet repaired	1
Windows reglazed	2
Improved ventilation provided	58
Sashcords renewed	2
Improved lighting provided	3
Offensive smells abated	3
Manure pits emptied	6
Accumulations of rubbish removed	40
Courtyards cleaned	6
Milk carts cleaned	7

INSPECTION OF SHOPS WHERE FOODSTUFFS ARE SOLD.

(Section 59 of the Aberdeen Police and Waterworks Amendment Act, 1867.)

Under the above section, 884 shops were inspected during the year, and in 107 cases notices were served on the occupants regarding the condition of their shops. These notices referred chiefly to the dirty condition of the walls and ceilings of the shops and of the cellars where foodstuffs are sold, and to the dirty condition and want of repair of the floors and fittings.

The accompanying table gives a detailed account of the work done in this connection:—

Walls and ceilings of shops cleaned	46
Walls and ceilings of back rooms cleaned	6
Walls and ceilings of cellars cleaned	16
Walls and ceilings of water-closets cleaned	5
Floors of shops cleaned	20
Floors of cellars cleaned	13
Floors, seats, and basins of water-closets cleaned	8
Fittings cleaned	26
Windows cleaned	3
Yards cleaned	2
Plaster on walls and ceilings repaired	10
Fittings repaired	17
Floors repaired	8
Additional ventilation provided	3
Accumulations of rubbish removed	18
Fish barrows cleaned	2
Other complaints removed	12

The following table gives particulars as to the shops visited:—

CLASS OF SHOP.	Number Inspected.	Found Satisfactory.	Found Unsatisfactory.	Number of Defects dealt with.
Grocers,	147	131	16	31
Butchers,	405	369	36	79
Restaurants,	129	92	37	75
Fruiterers,	59	54	5	12
Provisions and Cooked Meats, .	25	21	4	5
Fishmongers,	119	110	9	15
TOTALS,	884	777	107	217

PLACES OF PUBLIC REFRESHMENT.

The following table shows the various classes of shops on the register at the end of 1922:—

Description of Shop.	Number.
Ice Cream	88
Fried fish	23
Restaurants	91
Bakers	12
Temperance hotels	5
Dairies	3
Total	222

All these premises were visited from time to time in order to see that the Bye-laws for regulating the internal construction, lighting, and arrangement of registered premises with a view to the orderly conduct and control thereof, are being complied with.

Prosecutions for contraventions of the Bye-laws for regulating the hours of opening and closing are instituted by the Police.

MEAT INSPECTION.

The quantity of meat seized or destroyed during the year was greater than in 1921, as, while in that year the total weight was 132 $\frac{3}{4}$ tons, the quantity for 1922 was 156 tons.

The quantity of fish landed in Aberdeen during the year was 2,159,762 cwts., as compared with 1,682,981 cwts. in the previous year. For purposes of comparison, it is of interest to mention that the quantity landed in the year immediately preceding the war was 2,279,351 cwts. The quantity destroyed as unfit for food was 29,694 lbs., as compared with 16,179 lbs. in the previous year.

The quantity of beef destroyed last year was greater than in 1921, being 280,515 lbs., as compared with 241,046 lbs. The quantity of mutton destroyed was 5,112 lbs., being exactly the same quantity as in the previous year. The amount of pork destroyed was greater, being 3,293, as against 2,823 lbs.; while 2,041 lbs. of veal was destroyed, as compared with 1,767 lbs. There were also destroyed 11,694 lbs. of fruit and vegetables, 11,518 lbs. of tinned foods, 338 lbs. of game, 308 lbs. of bacon, 216 lbs. of poultry, 192 lbs. of butter, and 9 lbs. of eggs.

There were altogether 1,328 seizures during the year, as compared with 1,350 in the previous year.

The majority of the seizures (770) were made in the slaughter-houses, while 288 were made in the meat markets, 168 in warehouses and shops, 42 in offal markets, 20 in the Fish Market, 13 in cold stores, and 27 in other premises.

In all, 8,507 visits were made to the different places during the year. Of these, 1,867 have been made to slaughter-houses, 1,157 to meat marts, 1,068 to fishcuring premises, 581 to retail shops, 330 to Fish Market, 319 to New Market Hall, 301 to wholesale warehouses, 262 to provision curing works, 244 to street markets, 73 to shipping sheds, and 2,305 to other premises, including all the offal and tallow marts.

The corresponding number of inspections during the previous year was 10,080.

From the accompanying table will be seen the number of animals slaughtered in the various slaughter-houses, as well as the number seized for all causes (including tubercle) and also for tubercle alone.

The percentage of whole carcasses of cattle seized for tubercle was 0.53, and the percentage of parts seized was 0.76. In the previous year the corresponding percentages were 0.53 and 0.80, respectively. Of the 206 whole carcasses thus seized, 53 were bullocks, 41 heifers, and 112 cows. Of the 294 part carcasses seized, 145 were of bullocks, 119 of heifers, and 30 of cows. Four entire carcasses of pigs were seized on account of tubercle.

Of the 30 whole carcasses of cattle seized for all causes, excluding tubercle, 18 were of cows, 8 of bullocks, and 4 of heifers. Of the 150 part carcasses similarly seized, 103 were of cows, 35 of bullocks, 10 of heifers, and 2 of bulls. Seven whole carcasses and 4 parts of calves, 52 whole and 10 parts of sheep, and 15 whole and 12 parts of pigs were also seized.

In addition to the seizures in the slaughter-houses, 59 whole carcasses of cattle and 163 part carcasses were seized in the meat marts. Of these, 12 whole carcasses and 15 part carcasses were condemned on account of their being affected with tubercle. Of the 12 carcasses, 7 were of cows, 3 of bullocks, and 2 of heifers. Sixty-one whole carcasses and 26 part carcasses of sheep, 10 whole and 10 parts of pigs, and 6 whole and 14 parts of calves were also condemned in the meat markets.

Tinned Foods.

Considerable attention continues to be paid to the inspection of tinned foods. All factories where such articles are prepared are regularly visited, and care is taken to ensure, not only that the meat used is of good quality and free from disease but also that scrupulous cleanliness is observed in and about the works.

Wholesale warehouses and retail shops are also regularly visited and a sharp look-out is kept for "blown" tins. Altogether, 183 different lots, comprising beef, mutton, salmon, fruit, condensed milk, liquid eggs, and tomato puree, and weighing 11,518 lbs., were destroyed.

The Public Health (Unsound Food) Regulations (Scotland), 1908.

The shipping sheds are visited from time to time, but in no case was it found necessary to take action as prescribed in the Regulations. The bulk of the food stuffs arriving in Aberdeen are consigned to local warehouses, and, as already stated, these are regularly visited.

The Public Health (Foreign Meat) Regulations (Scotland), 1908.

No foreign meat, within the meaning of the above Regulations, was received in Aberdeen during the year.

Prosecutions.

It is satisfactory to be able to report that in no case was it found necessary to institute legal proceedings against any one for having in his possession, or having sold or exposed for sale, any food which was unfit for human consumption.

A detailed statement of the meat seized during each month of the year, as also a comparative statement with past years, will be found in an Appendix at the end of the Report.

SEIZURES IN SLAUGHTER HOUSES.

NAME OF SLAUGHTER-HOUSE.	A. SEIZURES FOR ALL CAUSES (INCLUDING TUBERCLE).					B. SEIZURES FOR TUBERCLE ONLY.													
	NUMBER OF ANIMALS SLAUGHTERED.					NUMBER OF CARCASSES SEIZED (WHOLE OR PART).													
	NUMBER OF CARCASSES SEIZED (WHOLE OR PART)					NUMBER OF CARCASSES SEIZED (WHOLE OR PART).													
	Cattle.	Calves.	Sheep.	Pigs.		Cattle.	Calves.	Sheep.	Pigs.										
					Whole	Part.	Whole	Part.	Whole	Part.	Whole	Part.	Whole	Part.	Whole	Part.			
Hutcheon Street.	28,986	87	44,710	2,800	187	353	9	4	44	10	19	12	159	208	2	...	...	4	...
Charles Street .	3,667	4	1,763	67	20	25	...	...	6	...	...	...	20	22	...	...	...	...	...
Deer Road .	1,882	...	1,091	1	5	14	...	...	1	...	...	...	5	13	...	...	...	...	...
Western Road .	1,630	...	4,666	27	15	26	...	...	1	...	...	...	13	25	...	...	...	...	...
Canal Place .	2,532	..	90	45	9	26	...	...	...	...	...	...	9	26	...	...	...	...	...
Totals for 1922 .	38,697	91	52,320	2,940	236	444	9	4	52	10	19	12	206	294	2	...	...	4	...
Corresponding Totals for 1921	29,616	126	42,151	2,198	195	387	9	2	28	6	12	11	156	236	3	...	...	1	...
Percentages of Seizures to Animals slaughtered in 1922					0.61	1.15	9.90	4.40	0.10	0.02	0.65	0.41	0.53	0.76	2.20	..	...	0.14	...
Corresponding Percentages for 1921 .					0.66	1.31	7.14	1.59	0.07	0.01	0.55	0.50	0.53	0.80	2.38	...	...	0.05	...

THE SALE OF FOOD AND DRUGS ACTS.

Undernoted are particulars as to the samples procured in accordance with the Acts :—

	NUMBER OF SAMPLES PROCURED.			NUMBER NOT GENUINE.			Number of Prosecutions.	Number Successful.	Amount of Fines Imposed.
	Formal	In-formal.	TOTAL.	Formal	In-formal.	TOTAL.			
Sweet Milk,	445	3	448	25	2	27	14	14	£50 0 0
Skimmed Milk,	40	0	40	0	0	0	0	0	.....
Cream,	6	0	6	0	0	0	0	0	..
Butter,	40	0	40	5	0	5	2	2	5 2 0
Margarine,	24	0	24	0	0	0	0	0	.....
Cocoa,	13	0	13	0	0	0	0	0	.....
Whisky,	11	0	11	1	0	1	1	1	5 0 0
Rum,	11	0	11	0	0	0	0	0	.....
Brandy,	3	0	3	0	0	0	0	0	..
Gin,	1	0	1	0	0	0	0	0	.....
Liquid Egg Yolk,	9	1	1	0	0	0	0	0	..
Drugs,	0	10	10	0	0	0	0	0	.....
TOTALS,	594	14	608	31	2	33	17	17	£60 2 0

In addition to the above, 43 unofficial samples of milk were taken at byres, or during the course of the transit of the milk.

Sweet Milk.

It will be observed that the total number of official samples of sweet milk procured was 445, and of these, 25, or 5·6 per cent., were found to be under the standard.

The following table gives the number of official samples of sweet milk procured in each of the past nine years, with particulars as to the numbers found under the standard :—

YEAR.	Number of Samples.	Number deficient in Fat.	Number deficient in Solids other than Fat.	Number deficient in both Fat and other Solids.	Total Number deficient.	Percentage deficient.	Number of Prosecutions.
1914, . . .	123	21	2	1	24	19·5	21
1915, . . .	207	21	6	5	32	15·6	25
1916, . . .	266	35	4	6	45	17·8	36
1917, . . .	252	36	12	3	51	20·2	37
1918, . . .	240	15	3	1	19	7·9	9
1919, . . .	262	25	3	3	31	11·8	22
1920, . . .	272	10	1	2	13	4·8	6
1921, . . .	431	18	7	2	27	6·3	15
1922, . . .	445	22	3	0	25	5·6	14
TOTALS, .	2,498	203	41	23	267	10·7	185

The average percentage of deficient samples during the period referred to is 10·7. It is gratifying to be able to report that during each of the last three years the percentage of deficient samples has been considerably under the average, being 4·8, 6·3, and 5·6, respectively.

The Department continues the practice, commenced in 1914, in the case of a retailer selling deficient milk, of taking a sample in the course of delivery from consigner to consignee. Similarly, in the event of a producer's sample being found to be under the standard, the byre is visited at the earliest possible date, and a sample procured.

The following table gives particulars as to the number of official samples of sweet milk procured from producers as compared with the number procured from retailers or wholesalers during the period of 1914-22. In each case, the number of samples found deficient at the byre, or in course of delivery to the retailer or wholesaler, is excluded :—

YEAR.	Number of Samples procured from Producers.	Number deficient.	Percentage deficient.	Number of Samples procured from Retailers or Wholesalers.	Number deficient.	Percentage deficient.
1914, . .	60	13	21·7	63	8	12·7
1915, . .	115	15	13·0	92	12	13·0
1916, . .	122	22	18·0	144	15	10·4
1917, . .	143	32	22·4	109	9	8·3
1918, . .	104	5	4·8	136	9	6·6
1919, . .	143	13	9·1	119	9	7·6
1920, . .	132	4	3·0	140	5	3·6
1921, . .	240	11	4·6	191	9	4·7
1922, . .	222	8	3·6	223	8	3·6
TOTALS, .	1,281	123	9·6	1,217	84	6·9

Four of the samples procured in course of delivery were found to be under the standard, while five of the samples procured at byres were also under the standard. In none of these cases were legal proceedings instituted. In other two cases also legal proceedings were not instituted as the contents of the particular can from which the complained of sample was procured was found to be under the standard, although the whole consignments, of which these individual cans formed part, were above the standard. The Inter-Departmental Committee on the Laws, Regulations, and Procedure governing the Sale of Milk in Scotland, have recommended that "it should be the producer's duty to see that his milk is properly mixed in order to supply milk that conforms with the minimum limit. Accordingly, each can of milk consigned by a producer should contain milk with butter fat up to the limit."

Undernoted are particulars regarding all the deficient samples of sweet milk procured from producers during the year, together with similar information regarding samples of the corresponding milk procured at the byres. The majority of the complained of samples were taken from consignments embracing the whole of the milk obtained at one milking. In other cases, the consignment consisted of the product of either two or three milkings. When considered necessary, samples were procured at the byre of the "morning," "midday," and "evening" milks.

OFFICIAL SAMPLES.			BYRE SAMPLES.			Remarks.
Nature of Milk.	Fat.	Solids, not Fat.	Nature of Milk.	Fat.	Solids, not Fat.	
Evening . . .	1.90	8.98	Evening . . .	3.72	9.10	Penalty, £3 10s.
Morning . . .	2.68	8.85	Morning . . .	3.02	8.97	Penalty, £1.
Evening . . .	2.80	8.87	Evening . . .	3.55	9.19	Penalty, £1 15s.
Morning . . .	2.73	8.83	Morning . . .	3.05	8.90	Penalty, £4.
			Midday . . .	4.69	8.53	
			Evening . . .	4.10	8.80	
Morning . . .	2.82	8.86	Morning . . .	2.82	8.86	No proceedings taken.
			Evening . . .	3.49	8.99	
Morning . . .	2.90	9.00	Morning . . .	3.23	8.96	Penalty, £4.
Mixture of morning & evening	2.54	8.97	Morning . . .	2.60	8.99	No proceedings taken.
			Evening . . .	2.65	8.99	
Evening . . .	2.89	8.79	Evening . . .	3.22	9.06	Penalty, £1 15s.
Evening . . .	2.10	9.17	Evening . . .	4.10	8.97	Penalty, £12.
Morning . . .	4.02	8.14	{ Morning (whole herd)	4.12	8.41	No proceedings taken.
			{ Morning (3 cows)	4.12	8.16	
Morning . . .	2.90	8.53	Morning . . .	2.90	8.59	No proceedings taken.

It will be observed that four "byre" samples were deficient in fat, while two were deficient in solids other than fat.

In two undernoted cases the deficiencies in fat were due to changes which had taken place during the transit of the milk.

The results of fuller investigation into the production and distribution of the milk supplies providing such deficiencies are of sufficient interest to be recorded. The particulars are as follows:—

Case No. 1.—The herd consisted of 16 cows, but at the time of my visit (8th March) the milk of only six of these cows was being sent to the City. The remainder of the cows were either quite dry, or had calved a day or two previously. The quantity yielded in the evening was about $5\frac{1}{2}$ gallons, while the quantity in the morning was about 7 gallons. The cows were milked twice a day, viz., 4.30 p.m. and 5.30 a.m.

On the day prior to my visit to the byre I had procured samples from the consignments of "evening" and "morning" milk as delivered in the City. The "evening" milk contained 3.03 per cent. fat and 8.89 per cent. solids other than fat; while the "morning" milk contained 2.82 per cent. fat and 8.86 per cent. solids other than fat.

The sample of "morning" milk procured at the byre contained 2.82 per cent. fat and 8.86 per cent. solids other than fat, being exactly the same percentages of

fat and solids other than fat as those contained in the sample taken from the corresponding consignment of "morning" milk procured in the City.

The sample of "evening" milk procured at the byre contained 3.49 per cent. fat and 8.99 per cent. solids other than fat, as compared with 3.03 per cent. fat and 8.89 per cent. solids other than fat contained in the sample procured in the City from a corresponding consignment of "evening" milk.

On 31st March, I procured further samples of the "morning" and "evening" milk in the course of delivery to the retailer. At that time the consignment of "morning" milk consisted of 19 gallons, and the "evening" milk 15 gallons. The "morning" milk contained 3.92 per cent. fat and 9.00 per cent. solids other than fat; while the "evening" milk contained 4.17 per cent. fat and 9.04 per cent. solids other than fat.

On 5th December, I procured a sample from a consignment of 19 gallons. On this occasion the "morning" and "evening" milks were not distinguished. The sample contained 3.21 per cent. fat and 9.08 per cent. solids other than fat.

Case No. 2.—The herd consisted of 9 cows, but at the time of my visit (3rd April) only five were in milk. The cows were milked twice daily, viz., 5.45 a.m. and 5.15 p.m.

A mixed sample of the "evening" milk, amounting to 7 gallons, procured at the byre contained 2.65 per cent. fat and 8.99 per cent. solids other than fat; while a mixed sample of the "morning" milk, amounting to 8 gallons, contained 2.60 per cent. fat and 8.99 per cent. solids other than fat.

In addition to procuring the aforementioned two samples at the byre, I obtained a sample of the "morning" milk of each of the five cows, and had these samples examined in the Public Health Laboratory.

Undernoted are particulars:—

			Quantity of Milk.	Fat.
Cow No. 1	.	.	1 gallon	2.6
„ „ 2	.	.	2 gallons	2.3
„ „ 3	.	.	2½ gallons	2.5
„ „ 4	.	.	Fully 1 gallon	3.0
„ „ 5	.	.	Fully 1 gallon	2.6

Two days prior to visiting the byre, I procured a sample from a consignment of 10 gallons which was stated to consist of 4 gallons "evening" milk and 6 gallons "morning" milk. This sample contained 2.54 per cent. fat and 8.97 per cent. solids other than fat.

On 22nd June, I procured a sample from a consignment of 20 gallons. On this occasion the "morning" and "evening" milks were not distinguished. The sample contained 3.22 per cent. fat and 8.87 per cent. solids other than fat.

On 5th December, I procured samples from 7 gallons "morning" milk and 5 gallons "evening" milk. The "morning" milk contained 3.14 per cent. fat and 8.83 per cent. solids other than fat; while the "evening" milk contained 3.60 per cent. fat and 9.03 per cent. solids other than fat.

Case No. 3.—The herd consisted of 12 cows, and all the cows were in milk at the time of the visit (7th August). The cows were milked twice a day, viz., 5.15 a.m. and 5.15 p.m.

Two days prior to my visiting the byre, I had procured a sample from a consignment of 3 gallons then in course of delivery to a retailer in the City. This sample, which contained 4.02 per cent. fat and 8.14 per cent. solids other than fat, was procured on account of a retailer having supplied a pint of milk containing 4.20 per cent. fat and 8.28 per cent. other solids.

A mixed sample of the "morning" milk of the whole herd, amounting to 12 gallons, contained 4.12 per cent. fat and 8.41 per cent. solids other than fat. I also procured a sample of the milk of the three cows which were said to have yielded the complained of consignment, and this sample contained 4.12 per cent. fat and 8.16 per cent. solids other than fat.

On obtaining the results of the analysis of the "byre" samples, I arranged with the farmer to revisit the byre and procure unofficial samples of the "morning" milk of each of the individual cows, and also another unofficial sample of the milk of the whole herd. This was done eight days later.

Undernoted are particulars as to the results:—

Quantity of Milk.	Fat.	Solids not Fat.
Cow No. 1 (about $\frac{7}{8}$ ths of a gallon) . . .	3.75	7.79
Cow No. 2 (about $1\frac{3}{8}$ th gallons) . . .	3.70	8.01
Cow No. 3 (about $1\frac{1}{4}$ th gallons) . . .	4.30	8.34
Cow No. 4 (about $1\frac{1}{8}$ th gallons) . . .	3.40	8.37
Cow No. 5 (about $1\frac{1}{8}$ th gallons) . . .	3.60	8.61
Cow No. 6 (about 1 gallon) . . .	4.40	8.94
Cow No. 7 (about $1\frac{3}{8}$ th gallons) . . .	3.20	8.55
Cow No. 8 (about $1\frac{1}{4}$ th gallons) . . .	3.65	8.68
Cow No. 9 (about $\frac{7}{8}$ ths of a gallon) . . .	4.30	8.63
Cow No. 10 (about $1\frac{1}{8}$ th gallon) . . .	3.20	8.94
Cow No. 11 (about $1\frac{1}{8}$ th gallons) . . .	3.70	8.18
Cow No. 12 (about 1 gallon) . . .	4.50	7.70
Mixed sample of the "morning" milk of whole herd	3.80	8.39

On 28th December, another sample was taken from the consignment of 3 gallons "morning" milk in course of delivery to the retailer. This sample contained 3.38 per cent. fat and 8.85 per cent. solids other than fat.

Case No. 4.—The herd consisted of 14 cows, and at the time of my visit (8th December) all the cows were in milk.

Two days previous to my visiting the byre I had procured two samples from consignments then in course of delivery to the retailer. One sample was taken from a consignment of 20 gallons "morning" milk, and contained 2.90 per cent. fat

and 8.53 per cent. solids other than fat. The second sample was taken from a consignment of 20 gallons—partly “midday” and partly “evening” milk—and contained 3.28 per cent. fat and 8.86 per cent. solids other than fat.

A mixed sample of the “morning” milk of the whole herd contained 2.90 per cent. fat and 8.59 per cent. solids other than fat. The cows were milked three times a day, viz., 5.30 a.m., 12 noon, and 7 p.m.

On 28th February last, I procured samples from consignments of 20 gallons “hot” and 20 gallons “cold” milk. The “hot” milk contained 3.69 per cent. fat and 9.00 per cent. solids other than fat; while the “cold” milk contained 3.60 per cent. fat and 9.16 per cent. solids other than fat.

In the two remaining cases it was found that the deficiency in fat was due to changes which had taken place in the milk during the course of transit.

The circumstances were as follows:—

Case No. 5.—On 11th January, I purchased two samples of milk from a farmer’s retail cart. The “morning” milk contained 3.26 per cent. fat and 8.84 per cent. solids other than fat; while the “evening” milk contained 1.90 per cent. fat and 8.98 per cent. solids other than fat.

I visited the byre on the evening of the same day and procured two samples. One sample consisted of the milk of the cows which were said to have yielded the 10 gallons from which the complained of sample was taken. This sample contained 3.72 per cent. fat and 9.10 per cent. solids other than fat. The second sample consisted of a mixed sample of the “evening” milk of the whole herd (20 cows), and amounted to about 13 gallons. This sample contained 3.66 per cent. fat and 9.07 per cent. solids other than fat.

The complained of sample was drawn from the tap of a 10-gallon vertical can which was filled to the top with “cold” or “evening” milk. I was informed at the time of the purchase that no milk had been taken out of this can since the cart left the farm.

Immediately after the samples were taken at the byre, I saw the 10 gallons of “evening” milk which had just been sampled poured into the same can as that from which the complained of sample had been drawn. This can was deposited in the milkhouse, and was kept there until it was put on to the dairy cart some twelve hours later.

I thereupon, unknown to the farmer, resolved to revisit on the following morning the point where the complained of sample had been purchased, and take a number of samples out of the same can, the mixed contents of which had, as previously mentioned, been already sampled at the byre.

I accordingly revisited the same point on the following morning, but on this occasion the cart was about half-an-hour later on arriving as compared with the preceding day. This was due to the slippery condition of the roads, with the result that most of the journey (a distance of 5 miles or thereby) had to be done at walking pace instead of trotting, as is customary, for a considerable part of the distance.

Four samples were taken. The first sample, which contained 1.05 per cent. fat and 9.00 per cent. solids other than fat, consisted of a pint of milk drawn from the tap of the same can as the complained of sample, and under exactly similar conditions.

The second sample, which contained 2.42 per cent. fat and 9.03 per cent. solids other than fat, was taken from a consignment of 4 gallons, supplied daily to a shop about 150 yards distant from the point where the first sample was procured. The 4 gallons were drawn off the tap of the can.

The third sample, which contained 4.48 per cent. fat and 8.97 per cent. solids other than fat, was taken from a consignment of $5\frac{1}{2}$ gallons delivered at another shop some 200 yards distant.

The fourth sample, which contained 4.58 per cent. fat and 8.99 per cent. solids other than fat, was taken from the remainder of the milk (less than half a gallon) in the 10-gallon can.

The 10-gallon can after being filled in my presence in the evening was, of course, out of my sight until the cart arrived in the City on the following morning, but on averaging the results of the analyses of the four samples taken from the can after the cart arrived in the City, it will be seen that the milk had not been tampered with overnight.

Seven samples of this producer's milk have been procured from time to time, and all have been certified to be genuine. After consultation with the Town Clerk, the Procurator-Fiscal and myself interviewed the farmer, and on getting from him an undertaking that in future he would thoroughly plunge the contents of his can immediately before the cart left for the City, and that he would meet the expenses incurred by me in visiting the byre and in the taking of the additional samples, we decided not to prosecute. The sum of £3 10s. was paid.

On 28th March, a sample of "cold" milk purchased from this producer was found to contain 3.42 per cent. fat and 9.04 per cent. solids other than fat. The farmer now only fills the can three-quarters full, and plunges the contents immediately before leaving the byre.

Case No. 6.—On 22nd May, I purchased a sample of milk from a retail lorry belonging to one of the principal dairy firms in the City. This firm handles about 2,600 gallons of milk daily. The sample contained 1.92 per cent. fat and 9.00 per solids other than fat.

On receiving intimation from the Public Analyst that he had reason to doubt the aforesaid sample, I immediately communicated with the firm, and was informed that the can in question had been filled out of a vat containing 200 gallons milk. I have from time to time taken samples of all the supplies to this dairy, so had no reason to expect that a mixed sample from a quantity of 200 gallons should be so far below the standard. I accordingly arranged to visit the dairy on the following day and take samples. It was also thought advisable to revisit the dairy on three other occasions and take further samples.

Undernoted are particulars of all the samples taken:—

Date and Hour.	Number and Description of Sample.	Fat.	Solids, not Fat.
<i>24th May—</i>			
8.25 a.m.	Unofficial Sample No. 21. Sample taken from tap of 17-gallon can (complained of can, Can A) immediately after being filled from vat containing 200 gallons	3.61	8.77
9.25 a.m.	Unofficial Sample No. 22. Sample taken from tap of same can (Can A) at same point as complained of sample, and after about 5 gallons had been sold. Sample corresponded with Sample No. 304—the complained of sample	2.52	8.71
9.28 a.m.	Unofficial Sample No. 23. Sample taken from tap of same can (Can A) at same point as Unofficial Sample No. 22, but before taking the sample contents of can had been thoroughly plunged	4.01	8.76
<i>30th May—</i>			
8.30 a.m.	Unofficial Sample No. 24. Sample corresponding to Unofficial Sample No. 21. Temperature of milk—57° F.	3.49	8.91
9.20 a.m.	Unofficial Sample No. 25. Sample corresponding to Sample No. 304, and also to Unofficial Sample No. 22. Temperature of milk—58.5° F.	2.73	8.89
9.25 a.m.	Unofficial Sample No. 26. Sample corresponding to Unofficial Sample No. 23. Temperature of milk—58.5° F.	3.79	8.96
9.30 a.m.	Unofficial Sample No. 27. Sample taken out of another 17-gallon can (Can B) which was also conveyed in the same lorry. This can was filled simultaneously with Can A out of the same vat. There are two taps in the vat, and the time taken to fill the cans was 45 seconds. Can B, however, was plunged immediately before the cart started its round, viz., half-an-hour after the can was filled, whereas in the case of Can A, no plunging took place. Prior to taking this sample, which was taken at the same point as Unofficial Sample No. 26, exactly similar quantities had been taken out of this can as were taken out of Can A. Temperature of milk—58.5° F.	2.69	8.89
<i>31st May—</i>			
8.30 a.m.	Unofficial Sample No. 28. Sample corresponded with Unofficial Samples Nos. 21 and 24. Temperature of milk—59° F.	3.51	8.91
9.30 a.m.	Unofficial Sample No. 29. Sample corresponded with Sample No. 304 and Unofficial Samples Nos. 22 and 25. Temperature of milk—62° F.	3.04	8.96
9.32 a.m.	Unofficial Sample No. 30. Sample corresponded with Unofficial Samples Nos. 23 and 26. Temperature of milk—62° F.	3.55	8.93
9.35 a.m.	Unofficial Sample No. 31. Sample corresponded with Unofficial Sample No. 27. Temperature of milk—62° F.	2.90	8.97
<i>19th June—</i>			
8.30 a.m.	Unofficial Sample No. 32. Sample corresponded with Unofficial Samples Nos. 21, 24, and 28. Temperature of milk—59° F.	3.40	8.98
8.30 a.m.	Unofficial Sample No. 33. Sample taken from tap of second can (Can B), which was filled out of same vat at same time as corresponding sample from Can A (Unofficial Sample No. 32). Temperature of milk—59° F.	3.52	8.89

Date and Hour.	Number and Description of Sample.	Fat.	Solids not Fat.
<i>19th July—continued—</i>			
8.47 a.m.	Unofficial Sample No. 34. Sample taken from tap of Can B after contents had been stationary for 17 minutes. Can was plunged immediately before sample was taken. Temperature of milk—59° F.	3.49	8.98
8.50 a.m.	Unofficial Sample No. 35. Sample taken from tap of Can A after contents had been stationary for 20 minutes. Can was not plunged prior to sample being taken. Temperature of milk—59° F.	2.88	8.91
9.30 a.m.	Unofficial Sample No. 36. Sample corresponded with Sample No. 304 and Unofficial Samples Nos. 22, 25, and 29. Temperature of milk—59.5° F.	2.35	8.87
9.32 a.m.	Unofficial Sample No. 37. Sample taken from tap of Can B (without plunging) at same point as Sample No. 36. This can had, however, been plunged on this occasion 17 minutes after being filled. Temperature of milk—59.5° F.	3.16	8.97
9.35 a.m.	Unofficial Sample No. 38. Sample corresponded with Unofficial Samples Nos. 23, 26, and 30. Temperature of milk—59.5° F.	3.67	8.93
9.37 a.m.	Unofficial Sample No. 39. Sample corresponded with Unofficial Samples Nos. 27 and 31. Temperature of milk—59.5° F.	3.39	8.95

All these samples were taken either in the presence of myself and one of my assistants, or in the presence of two of my assistants. The cans were never out of our sight, and nothing was done to the milk, except that in the cases mentioned the contents of the can were plunged immediately before the sample was taken.

It ought to be mentioned that the light lorry on which the cans were conveyed is fitted with solid rubber tyres, and each can is placed in a closely fitted circular wooden wedge. In addition, each can is fixed to the outside of the lorry by leather straps, and the cans are similarly fixed to each other.

It will be observed that all the samples corresponding with the complained of sample, viz., Unofficial Samples Nos. 22, 25, 29, and 36, all show a considerable reduction of fat as compared with the samples taken from the same can immediately after being filled from the vat.

It will also be observed, as regards Samples Nos. 27 and 31, which were taken out of a can similar to Can A, and under exactly the same conditions (except that the contents of this can were plunged immediately before the lorry started on its round, whereas in the case of Can A, no plunging took place after the can was filled), that there is also a very considerable reduction in the fat content. Indeed, in comparing Samples Nos. 29 and 31, it will be observed that the reduction in fat is greater in the can which was plunged immediately before the cart started.

The Procurator-Fiscal and myself consulted with the Town Clerk. After taking all the facts into consideration, we decided to withdraw the complaint on condition that the dairyman paid the expenses—amounting to £6—incurrd in connection with the analyses of the experimental samples procured. This sum was accordingly paid.

The dairyman has also arranged to make certain alterations in his methods of distributing milk. For example, none of his cans are now filled more than three-quarters full.

On 10th June, a sample of milk was purchased from another of the dairy carts belonging to this firm. The cart was, however, of a different type, fitted with iron tyres, and the cans were swung on the cart. The sample contained 3·64 per cent. fat and 8·93 per cent. solids other than fat.

In view of the changes which took place in the complained of sample of milk during the transit of the dairy lorry, I thought it right to communicate in the undernoted terms with all the dairymen (some 130 in number) retailing milk from carts in the City:—

Dear Sir,

The Sale of Food and Drugs Acts.

I recently purchased a sample of sweet milk, supplied out of a retail drum in a dairy cart, and on analysis this sample was found to be very considerably under the required standard of 3 per cent. fat.

As the result of a series of experiments which I made, I was satisfied that the milk had not been tampered with, and that the poor quality of the sample complained of was due to the fat having been allowed to rise to the top. The High Court has, however, decided that it is the duty of the retailer to take whatever steps may be necessary to keep the milk in its natural condition during the course of sale.

So far as selling from a dairy cart is concerned, this result should be achieved by thoroughly plunging the contents of the can or cans *immediately before* the cart leaves the dairy premises, and only filling the cans to, say, three-fourths of their capacity, in order to allow the milk to have room to agitate while the delivery cart is in motion.

I shall be obliged, therefore, if you will give such instructions on these lines to your employees as will ensure that milk distributed by you is not allowed to settle during transit, and to fall below the standard.

Your obedient servant,

(Signed) JAMES CUMMING,

Officer under the Sale of Food and Drugs Acts.

On 22nd September, a sample purchased from the same lorry was found to contain 3·60 per cent. fat and 8·90 per cent. solids other than fat.

In view of the fact that one of the points to which the special attention of the Inter-Departmental Committee appointed by the Scottish Board of Health was directed was the "Presumptive or legal standard for milk," it is of interest to observe that the average quantities of fat and solids other than fat in all the samples analysed was as follows:—

Year.	No. of Samples.	Fat.	Solids not Fat.
1919 . . .	262	3·38	8·95
1920 . . .	272	3·48	8·96
1921 . . .	429	3·50	8·89
1922 . . .	445	3·53	8·91

No similar information is available for the earlier years.

In calculating the averages for the year 1921, no account has been taken of two abnormal samples which contained, respectively, 17·24 per cent. fat and 7·76 per cent. solids other than fat and 8·23 per cent. fat and 8·69 per cent. solids other than fat.

The following table gives information as to the number and nature of the official samples of sweet milk analysed:—

YEAR	RETAIL SAMPLES FROM SHOPS.			RETAIL SAMPLES FROM CARTS.			WHOLESALE SAMPLES IN COURSE OF DELIVERY.			SAMPLES TAKEN ON DELIVERY AT INSTITUTIONS.		
	Samples taken.	Found adulterated.	Per-centage adulterated.	Samples taken.	Found adulterated.	Per-centage adulterated.	Samples taken.	Found adulterated.	Per-centage adulterated.	Samples taken.	Found adulterated.	Per-centage adulterated.
1914, . .	50	8	16·0	35	7	20·0	24	8	33·3	14	1	7·1
1915, . .	82	14	17·1	64	4	6·2	38	11	29·0	23	3	13·0
1916, . .	118	19	16·1	82	9	11·0	47	16	34·0	19	1	5·3
1917, . .	83	11	13·3	54	6	11·1	92	34	37·0	23	0	0·0
1918, . .	123	8	6·5	66	7	10·6	49	4	8·2	2	0	0·0
1919, . .	101	14	13·7	36	2	5·5	123	15	12·2	2	0	0·0
1920, . .	129	6	4·7	32	2	6·3	111	5	4·5	0	0	0·0
1921, . .	166	10	6·0	87	3	3·4	176	14	8·0	2	0	0·0
1922, . .	188	10	5·3	86	5	5·8	169	10	5·9	2	0	0·0
TOTALS, .	1,040	100	9·6	542	45	8·3	829	117	14·1	87	5	5·7

It is gratifying to observe that in recent years there has been a considerable decrease in the percentages of deficient samples.

In only one sample—purchased from a producer—was colouring matter, viz., annatto, found. The seller pled guilty, and was fined £5.

The Inter-Departmental Committee issued their report in the course of last year. The following summary of their recommendations is submitted:—

1. *The Minimum Limit.*

A new system of administration is necessary in regard to the sale of milk—

- (a) There should be a legal minimum limit for butter fat and solids not fat in milk. Meantime the figures of this limit should be not less than 3 per cent. of fat and 8·5 per cent. other solids.
- (b) There should be a legal minimum limit, for skimmed and separated milk, of 8·7 per cent. solids other than fat.
- (c) There should be legal minimum limits—
 - (1) For ordinary cream, of 10 per cent. butter fat, and
 - (2) For double cream, of 40 per cent. butter fat.

- (d) There should be a legal minimum limit of 5 per cent. solids not fat in butter-milk.

The figures of the limit for milk should be determined by order of the Central Department, which should have power to revoke such an order and impose a new one. They should also define milk.

Regardless of the minimum limit, the addition of water to milk (including skimmed and separated milk) should remain an offence.

The Central Department should be empowered, after due enquiry, to fix local minimum limits for milk.

The addition of thickening matter to cream should be definitely prohibited.

2. *The Administration of the Legal Minimum Limit.*

All milk vendors should be registered in the manner contemplated by the Milk and Dairies (Scotland) Act, 1914, and the provisions as to removal of unsuitable persons from the register should apply to offences against the minimum limit.

The milk of every producer, wholesale dealer, and retailer should be sampled regularly and frequently, and the person concerned should receive, at the earliest possible date after sampling, a statement of the figures obtained by the public analyst.

The Local Authority should conduct sampling of milk at the premises where it is produced, and the producer and any other Local Authorities concerned should be supplied with the results of analysis.

The system of official milk records deserves the strongest support. It is part of the producer's business to make himself generally acquainted with the quality of the milk he supplies to the public.

It should be the producer's duty to see that his milk is properly mixed, in order to supply milk that conforms with the minimum limit. Accordingly, each can of milk consigned by a producer should contain milk with butter fat up to the limit.

For the purpose of assisting wholesale dealers and retailers, it should be competent for the Sampling Officer, when requested, to take a sample of milk and to furnish the vendor with the figures of analysis. It should be an offence for any vendor to use these figures of analysis in a way which is intended to prejudice any other person, and, in order that this method of assistance may not be unduly strained, Local Authorities should have the option of charging a modified fee.

It is the duty of the retailer to see that his customers receive a fair sample of the milk which he retails.

The Sampling Officer, by enquiry and advice, should make certain that each person in charge of milk is aware of what is expected of him.

When an official sample is found to contain less than the proportion of constituent parts set out above, the Sampling Officer, or Administrative Officer, should investigate the circumstances, and should use every endeavour to ascertain the cause of the deficiency.

The first time an official sample is found below the minimum limit there should be a warning, unless the Local Authority are satisfied that it is a case of adulteration.

The milk of any vendor whose milk has been found below the limit should be sampled more frequently.

The Local Authority should have power to withdraw the certificate of registration after a person has been convicted in Court four times. In the case of multiple shops, this should only apply to the shop concerned.

In order to safeguard the interests of milk producers and vendors, a person whose certificate of registration is withdrawn should be enabled to appeal to the Sheriff, but it should not be possible to evade the law by removing from one area into another.

There should be one Central Department dealing with the administration in regard to milk, and this should be the Scottish Board of Health. Where necessary, the concurrence of the Board of Agriculture for Scotland to the action of the Central Department should be obtained.

3. *Warranty of Composition.*

With the legal minimum limit, the warranty of composition ceases to be a defence.

If any producer or wholesale dealer is found adulterating milk, it will be necessary for the Local Authority to keep watch over his supply at all times, lest innocent retailers be punished for his adulterations.

4. *Sampling.*

Bottling of milk should be encouraged and extended. When sampling bottled milk the Sampling Officer should take special pains to ensure that the nature of the sample does not lead to error.

The existing procedure in regard to the taking of samples should be continued.

The employment of deputies, where necessary, is approved.

The results obtained from test samples demonstrate the value of this method of sampling, but in future the figures of analyses of test samples should be intimated in due course to the vendor.

The Central Department should make an order, as contemplated by Section 12 (2) (d) of the Milk and Dairies (Scotland) Act, 1914, requiring the proper fastening, sealing, and identification of churns and vessels used for conveying milk for sale. There is no reason why the farmer should not accept responsibility for the results obtained by proper sampling, if, at the time of sampling, his seal is unbroken. If milk is to be sampled on delivery, in the absence of the supplier or of his servant, it should be sampled in the premises of the wholesale or retail dealer.

The officials of the consuming Local Authority should be enabled to take samples of the milk "at the place of delivery," when this place is within the district of any other Local Authority, if the two Authorities have come to an arrangement to that effect. Failing such an arrangement, the consuming Local Authority should be enabled to call on the other Local Authority to take samples, on the lines of Section 21 of the Milk and Dairies (Scotland) Act, 1914.

The detailed methods of sampling the milk of producers should be the subject of regulations to be made by the Central Department.

The Sampling Officer should be empowered to sample milk anywhere within his area, as long as the milk is in charge of any responsible person, and he has reasonable grounds for concluding that the milk is consigned for sale.

When the milk of a retailer is found to be under the minimum limit, immediate steps should be taken to obtain a sample, or more than one sample, from the person supplying him.

A Sampling Officer should take whatever precautions he can to prevent the news that he is sampling a retailer's milk from reaching the supplier.

It is essential that the Sampling Officer should see that the vessels used by his deputies are thoroughly dry.

When milk is sampled at the point of delivery to a retailer, it ought to be plunged, poured, or otherwise thoroughly mixed before sampling.

Where there is no occasion to suspect the honesty of the milk vendor, the sample taken should be a pint sample.

Sampling should be fairly distributed throughout the year.

All milk vessels should be labelled to show the contents. This applies to vessels containing cream, whole milk, skimmed milk, including separated milk, and buttermilk.

The whole method of retail sampling should be the subject of regulations by the Central Department, and should be revised from time to time if necessary.

When the Local Authority have reason to suspect tampering, they should require the vendor's analyst to produce the sample bottle in Court, and to supply particulars in regard to any indications of tampering which he may have observed. There should be a specific penalty for the offence of tampering.

Obstruction of the Sampling Officer, or refusal to sell to or supply a Sampling Officer, should be considered equivalent to an infringement of the minimum limit, in connection with possible withdrawal of the certificate of registration.

The Local Authorities of small burghs should, wherever possible, join with County Councils for the purpose of having sampling carried out by skilled officials.

5. *Methods of Analysis.*

The methods of analysis should, as far as possible, be uniform. These methods should be determined and agreed on by the Association of Public Analysts of Scotland, and should be communicated to the Central Department from time to time.

In the analysis of a sample of milk, the public analyst should be required to ascertain the fat, the total amount of solids other than fat, and the amounts of preservative and of foreign ingredients, if any. Any observations that he may desire to make in regard to the sample should be made below his signature, and the methods of analysis employed should also be added in this form.

There is no case for requiring the public analyst personally to analyse samples of milk, if he has competent assistants and if he himself takes the responsibility for results.

The public analyst should return results of his analysis to the Sampling Officer within ten days of the receipt of the sample.

Every person from whom an official sample is taken should be furnished as soon as practicable, and in any case within a fortnight, with a copy of the certificate of analysis.

When the third portion of a sample is sent by direction of the Court to the Government Chemist, the results of analysis obtained by the public analyst should not be supplied, but a general statement of the nature of the deficiency or alleged adulteration should be given.

Valuable information might be obtained if a series of analyses were made in order to collect information in regard to the proportions of nitrogen, lactose, and mineral matter in milk. The third portion of samples, both over and under the minimum limit, might be used for this purpose.

6. *The Court of Trial and the Incidence of Expenses.*

All cases taken to Court should be tried before the Sheriff or the Sheriff-Substitute, or before a Stipendiary Magistrate where one has been appointed.

The existing provisions in regard to the initiation of legal proceedings, especially in so far as they authorise the person causing the analysis to be made to prosecute, should be continued.

The penalties imposed in milk cases are inadequate, and do not act as a deterrent on the persistent offender.

Expenses should be granted to a successful prosecutor or a successful defendant.

7. *Other Questions.*

The existing provisions in regard to milk should be gathered together and should be incorporated in one statute, along with the provisions which may be devised as a result of the recommendations in this Report.

The appeal to the cow should be regarded as evidence in any case of adulteration if it is carried out within seven days after the official sample is taken.

Producers should be paid on the butter-fat basis.

Colouring should be prohibited.

The sale of reconstituted milk should be regulated.

There should be as little delay as possible in bringing into operation the Milk and Dairies (Scotland) Act, 1914.

Propaganda work, in which farmers and dairymen ought to assist, should be undertaken, to impress on the public the value of a plentiful supply of clean milk.

There is little doubt that if the recommendations of the Committee are given effect to, a considerable advance will be made in the law relating to the sale of milk. The present "presumptive standard" has in some parts of the country given rise to grave difficulty in the administration of the law, and the unanimous opinion of the administrative officers who gave evidence before the Committee was that the "presumptive standard" should be replaced by a "legal standard."

As I have frequently found on visiting byres that the mixed milk of the herd was under the standard in either fat or solids other than fat, it might be considered that it is a hardship on the producer to fix a legal standard. From my experience, however, I am clearly of opinion that the causes which contribute to milk being under the standard, *e.g.*, unequal intervals between the periods of milking, failure to mix the milk properly, incomplete milking of the cows, and insufficient or improper feeding, are all preventable. This is borne out by the fact that, although within the last nine years I have in no fewer than 30 cases found the mixed milk of a whole herd deficient at the byre in either fat or solids other than fat, in only one case have I on a second occasion got deficient milk from the owner of any of these herds. In this case it was twice found that the mixed "morning" milk of the whole herd (10 cows) was under the standard for fat. The last occasion was four years ago. Since that date three samples have been taken from this producer, and the amount of fat contained in each of the samples was 3.36, 3.71, and 4.41, respectively.

In all cases where milk under the standard is obtained as it comes from the cows, it is my practice to write the farmer and inform him that, although he has not contravened the law as it at present stands, it is only right that he should, in the interests of his customers, take whatever steps may be necessary to ensure that the milk supplied by him complies with the requirements of the Sale of Milk Regulations.

Our experience in finding that in such a large number of cases the milk as it came from the cows was under the standard, is rather unique, as it was generally believed that it was very rare to find the milk of more than two or three cows under the standard. The universal opinion was that if you mixed the milk of a whole herd, consisting of, say, not less than half a dozen cows, the milk would invariably be above the standard. Such has not been our experience. It is, therefore, all the more gratifying to find that, even in such cases as have been referred to, the farmer, after being warned about the quality of his milk, has had no difficulty in supplying a milk which contains at least 3 per cent. fat and 8.5 per cent. solids other than fat.

As another illustration of my opinion that there is no unfairness in making the present standard a "legal" instead of a "presumptive" one, I should mention that, during the last four years, we have procured 1,408 official samples of milk, and that the average amount of fat contained in these samples, including all the deficient samples, was 3.47 per cent., and the average amount of solids other than fat was 8.93 per cent.

Unofficial Samples of Sweet Milk.

During the year, 273 unofficial samples were procured, and examined for fat in the Public Health Laboratory. Of these samples, 126 were taken on delivery at

City dairies from consignments which were collected by the dairymen outside the City. None of these samples was definitely under the standard. The remaining 147 samples were partly taken from suspicious supplies which are kept under close observation, and partly from individual cans forming part of a consignment. It is sometimes found that, although the whole consignment is up to the standard, the milk in one or more of the cans is below the standard. As the retailer frequently uses separately the contents of an individual can, he, if such milk be found under standard, renders himself liable to prosecution, and, as the law stands at present, proceedings cannot be instituted against the farmer should the entire consignment be found to comply with the standard. As already stated, however, one of the recommendations of the Inter-Departmental Committee is that each can of milk consigned by a producer should contain milk with butter fat up to the limit.

Skimmed Milk.

Forty official samples of skimmed milk were procured in the course of the year, and all were found genuine.

The following table gives particulars as to the number of samples of skimmed milk taken since 1914 :—

Year.	No of Samples.	No. under Standard.	Percentage under Standard.
1914 . . .	7	0	0·0
1915 . . .	25	0	0·0
1916 . . .	58	11	19·0
1917 . . .	50	2	4·0
1918 . . .	18	1	5·6
1919 . . .	17	2	11·8
1920 . . .	24	1	4·2
1921 . . .	34	0	0·0
1922 . . .	40	0	0·0
Totals . . .	273	17	6·2

It will be observed that since 1st January, 1920, 98 samples have been obtained, and only one found under the standard.

The average percentages of fat and solids other than fat contained in the samples of skimmed milk procured during the last four years were as under :—

Year.	Number of Samples.	Fat.	Solids not Fat.
1919 . . .	17	1·71	8·86
1920 . . .	24	1·17	8·91
1921 . . .	34	1·39	8·89
1922 . . .	40	1·21	8·87

A considerable portion of the skimmed milk sold in Aberdeen is "hand-skimmed." The percentages of fat in this class of milk ranged from 1·01 to 2·87. As regards "separated" milk the percentages of fat ranged from 0·14 to 0·89.

Cream.

In order to see whether the requirements of the Milk (Scotland) Order, 1921, as regards the prohibition of colouring matter, were being complied with, six samples of cream were purchased, and the Analyst reported that no colouring matter was present in any of the samples.

Undernoted are particulars as to the prices and quality of the samples. Half a pint was purchased in each case:—

No.	Price.	Fat.	Solids other than fat.
1	6d.	13·40	7·20
2	8d.	12·20	8·09
3	10d.	24·19	4·21
4	1/-	27·51	4·79
5	1/-	26·83	4·67
6	1/-	27·43	4·77

When it is borne in mind that the legal minimum limit for ordinary cream, recommended by the Inter-Departmental Committee, is 10 per cent. butter fat, it will be seen that, for the prices charged, all the samples were good value.

Butter.

Of the 40 samples of butter purchased, 5, or 12·5 per cent., were under the standard. One of the samples contained foreign fat to the extent of 30 per cent., and the amount of water contained in each of the remaining deficient samples was, respectively, 16·3, 16·6, 17·8, and 19·4 per cent. Prosecutions were instituted in two cases. Letters of warning were sent in two cases, and in the remaining case the merchant died before the date of trial.

In one case the seller was protected by a warranty, but as the excess of water amounted to only 0·6 per cent., no proceedings were taken either against the seller or against the manufacturer for issuing a false warranty. It was our intention to take a further sample in course of delivery, but the producer ceased sending butter to the City.

Margarine.

All the 24 samples purchased were genuine.

It was found that in 14 of these cases the requirements of the Act as regards labelling and marking were not being fully complied with. Letters of warning, accompanied by a circular containing excerpts from the Acts, were sent to all offenders.

Cocoa.

In view of the possible presence of arsenic, 13 samples of cocoa were purchased and all found genuine.

Spirits.

Eleven samples of whisky, 11 of rum, 3 of brandy, and 1 of gin were purchased. One of the samples of whisky was certified to be 39·72 degrees under proof, and the

seller—a licensed grocer—was fined £5. Of the 26 samples, 16 were procured in public-houses, and 10 in grocers' shops.

No samples of diluted spirits were purchased, but in 5 of the public-houses, the notices exhibited on the receptacles containing such spirits did not, in my opinion, comply with the requirements of the Act inasmuch as they did not indicate to the purchaser the fact that the spirits were diluted. Letters were sent to each of the publicans concerned asking them to have proper notices exhibited, and, on revisiting their premises, it was found that proper notices had been procured.

In March last, the Court of Justiciary held that such notices were insufficient, and steps have been taken by the Executive of the Licenceholders' Association to obtain proper notices.

Drugs.

All the 10 samples of drugs analysed, consisting of camphorated oil, lime water, mercury ointment, yellow mercuric oxide ointment, red precipitate ointment, iron pills, blue pills, cod liver oil, Easton's syrup and grey powder, were certified genuine.

RAG FLOCK ACT, 1911.

Thirteen samples were procured under the above Act, and duly analysed.

Six of the samples were procured from upholsterers, 4 from rag flock manufacturers, and 3 from bedding manufacturers.

All the samples were reported as conforming with the standard prescribed by the Regulations, the individual results being as follows:—

No. of Sample.	Chlorine (of Chlorides) per 100,000 parts of Flock.
1	30
2	28
3	16
4	6
5	22
6	8
7	20
8	26
9	15
10	20
11	16
12	20
13	17

POISONS AND PHARMACY ACT, 1908.

No fresh applications were received for permission to sell substances to be used exclusively in agriculture or horticulture. Applications for the renewal of existing licences were made and granted. The premises were visited from time to time, and the arrangements for keeping poisonous substances found to be satisfactory.

SHOPS ACT, 1912, AND THE SHOPS (EARLY CLOSING) ACTS, 1920 AND 1921.

The provisions of these Acts, and the Half-Holiday Orders and Closing Orders made under the principal Act, have been regularly enforced. In all, 7,231 inspections were made, and legal proceedings were instituted in 18 cases. All the prosecutions were in connection with contraventions of the Shops (Early Closing) Acts.

Half-Holiday Orders.

No additional Order was made in the course of the year.

During the week ending 23rd December, six shopkeepers failed to close their shops for the weekly half-holiday. In December, 1914, the Town Council, in order to remove a difficulty which had been felt by shopkeepers, made an Amending Order which enacts that "During the week in which Christmas Day and New Year's Day occur, the half-holiday for the shops affected shall be such day as the occupier may specify in a notice affixed in the shop, as provided by Section 4 (3) of the Shops Act, 1912."

In order to have kept themselves within the provisions of the Act, the six shopkeepers referred to should have closed all day on Christmas Day, but, by opening on the forenoon of that day, as they did, they contravened the Act. The cases were reported for prosecution, but, after consultation with the Town Clerk, it was decided that in lieu of legal proceedings being instituted, a letter of warning from the Procurator-Fiscal should be sent. This was accordingly done.

Closing Orders under Section 5 (for fixing the closing hour for the several days of the week).

There are six Closing Orders in force, namely, those for butchers, hairdressers, drapers, clothiers and outfitters, chemists, boot and shoe dealers, and ironmongers.

No additional Order was made during the year, but the butchers were successful in obtaining a new Order whereby all shops must be closed on every evening of the week not later than 7 p.m. Under the previous Order obtained in 1913, butchers' shops could remain open until 9 p.m. on Thursdays and 10 p.m. on Saturdays.

As the result of inspections made, it was found that 19 shopkeepers had failed to close their shops at the prescribed hours. No evidence was obtained, however, that customers had been served after the closing hours. Letters were accordingly sent warning the shopkeepers to see that the doors of their shops were closed at the proper hours.

In three cases it was observed from advertisements in the press that firms of travelling auctioneers contemplated holding sales after the closing hours fixed in Local Orders. Letters were sent informing the firms of the local closing hours, and in every case the provisions of the Orders were complied with.

Section 1 (1) and (2)—Shop Assistants' Half-Holiday.

No case was discovered where the assistant did not get a half-holiday. In two cases it was found that the assistants were employed until 2 p.m. instead of 1.30 p.m. It was considered sufficient to send letters of warning to the offenders.

In 104 shops, it was found that the assistants' half-holiday notice was either wanting or was not properly filled up. Letters of warning were sent in every case, and on subsequent inspection it was found that proper notices were exhibited.

Section 1 (3)—Intervals for Meals.

In only two cases was it found that the requirements as regards intervals for meals were not being complied with. After the attention of the shopkeepers was drawn to the contraventions, the matter was rectified.

Section 2 (1) and (3)—Hours of Employment of Young Persons under 18 years of age.

One contravention of this section—which requires that young persons under 18 years of age must not be employed more than 74 hours, including meal times, in one week—was discovered. It was found, however, that there would be considerable difficulty in proving this case, and, as the shopkeeper almost immediately afterwards gave up business, no proceedings were instituted.

Letters were sent in 50 cases regarding the non-exhibition of the requisite notices, and the notices were duly procured.

Section 3—Seats for Female Shop Assistants.

No contravention of this section—which requires that in all rooms of a shop where female assistants are employed in the serving of customers, the occupier of the shop shall provide seats behind the counter, in the proportion of not less than one seat to every three female shop assistants—was discovered.

Section 4 (1) and (3)—Half-Holiday Closing of Shops.

Complaints were received about the occupiers of "mixed" shops selling non-exempted articles on the afternoon of the half-holiday, but on an attempt being made to purchase the articles complained of, the complaints were not substantiated.

There is no doubt, however, that a number of the occupiers of the smaller class of shop are guilty of this practice, and in fairness to the shopkeepers who strictly conform with the requirements, a circular was issued to the occupiers of "mixed" shops warning them that if a contravention was discovered prosecution would follow.

Section 9—Provisions as to Trading elsewhere than in Shops.

One fish hawk was discovered selling fish half-an-hour beyond the time prescribed for the closing of fishmongers' shops, and a letter of warning was sent.

Section 10 (1)—Conditions for "Mixed" Shops remaining open on the Weekly Half-Holiday.

The attention of 171 shopkeepers was drawn to the fact that the notices required under this section were not being exhibited, and in every case the omission was remedied.

Shops (Early Closing) Act, 1920, as amended by the Act of 1921.

By these Acts the Order made in 1917 under the Defence of the Realm Regulations is continued in force, and has effect in the area of any Local Authority as if it were a Closing Order made and confirmed under the Shops Act, 1912.

Numerous complaints have been received from shopkeepers regarding their neighbours or competitors selling non-exempted articles after the closing hours prescribed in the Act. In 18 cases proceedings were instituted and convictions obtained in 17 cases—the penalties, including expenses, aggregating £26. In the remaining case, the charge was found “not proven.”

In the preceding year the number of prosecutions was 29.

It was originally intended that this Act should cease to become operative on 31st December, 1921, but by the Expiring Laws Continuance Acts it has been continued from year to year, and has recently been extended up to 31st December, 1924. There is no doubt that considerable vexation and irritation exist among certain shopkeepers and members of the public regarding the restrictions that are still being kept in force as to trading. Everybody is agreed as to the desirability of having all shops closed at as early an hour as possible, but this Act permits the sale of certain articles beyond the prescribed closing hours, so that the shop can be kept open for the sale of these articles. For example, refreshments for consumption on the premises can be sold up to 11.30 p.m., but refreshments are deemed not to include ices or ice cream. The result is that in the summer months there is in tearooms and similar places a considerable demand on the part of the public for ices, yet these cannot be served after 9.30 p.m., although such articles as fruit salads, aerated waters, and tea and coffee can be served so long as the premises remain open.

Then, again, in shops where articles for consumption off the premises only can be sold, the sale of fruit, table waters, sweets, chocolates, or other sugar confectionery and ice cream—all more or less what might be termed luxuries—is permitted up to 9.30 p.m., yet the sale of such articles as milk, bread, butter, eggs, and all groceries must cease at 8 p.m.

As stated in a previous report, it might be desirable for the legislature to consider whether the time has not now come when these restrictions, which were introduced as a war measure, should either be relaxed or abolished.

EXTERMINATION OF RATS.

The agreement entered into in 1917 between a number of citizens—mainly the proprietors of food warehouses and similar premises—under which the services of the two Corporation rat catchers were made available to the contributors to the scheme, is still in operation. The number of contributors at the end of 1922 was 57, and the number of visits paid to their premises during the year was 2,098.

The services of the rat catchers were also made available, on request, for 123 citizens' premises which were found to be infested with rats, on payment of the charges fixed by the Sub-Committee supervising the scheme.

The rat catchers periodically visit all open places, such as rubbish tips, railway embankments, burns, &c., which are known to be infested with rats, and also all premises belonging to the Town Council which are similarly infested.

As part of their routine duty all the District Inspectors keep a look out for rat-infested premises, and when such are found, and sufficient steps are not being taken to exterminate the rats, a notice is served, under the Rats and Mice Destruction Act, 1920, upon either the occupier or owner. The number of such notices was 108, as compared with 176 in 1921, and 79 in 1920.

Under the Act the onus of exterminating rats and taking steps to prevent re-infestation of the premises is placed upon the occupier. As stated in a previous Report, it would be a great advantage if power were given, as in the Public Health Act in connection with nuisances, to serve the notices on either the occupier or the owner. In some cases it might be found advisable to serve the notices upon both occupier and owner. In tenemented properties, it frequently happens that it is some part of the property used in common which is infested, and it is obviously difficult to get the tenants in such cases to take sufficient steps to exterminate the rats. Moreover, extensive repairs have frequently to be carried out in order to prevent re-infestation of the premises, and it is not reasonable to expect that the occupier should have to bear the cost of such repairs.

When dealing with tenemented properties, it has been our practice to call upon the owners to exterminate the rats and to take the necessary steps to prevent re-infestation, and, so far, we have had comparatively little difficulty in getting owners to comply with our demands. It would, however, be much more satisfactory if power were given to deal with the owner, as well as the occupier, in all cases where it was considered this procedure was necessary.

In every case efforts are made to discover the means whereby rats obtain access to the property, and notices are also served regarding the repairs which are required in order to prevent re-infestation. In the older properties, however, it is difficult—in fact, impossible—to render the premises rat-proof, and, consequently, in some cases the only alternative is to keep on exterminating the rats.

Valuable aid is rendered by the Burgh Surveyor's Department in raising the pavement and closing up the rat runs. The staffs of the Electrical, Gas, and Water Engineer's Departments also co-operate by seeing that all holes left in walls after the laying of electric cables or gas and water mains are properly filled up.

Various poisons have been used from time to time, but as the result of our experience we have now practically settled down to the almost steady use of arsenic and liquid red squill. The former is used with a variety of baits; while the latter is used in the form of squares of loaf bread thoroughly soaked with a mixture of red squill and milk.

Very good results continue to be obtained by the use of red squill. Not only is this form of poison readily eaten by rats, but, as the result of repeated experiments in the Public Health Laboratory, it has been proved that a piece of loaf bread, one inch square, if thoroughly soaked with squill and milk, never fails to kill a rat.

A great advantage in the use of squill is that it is guaranteed by the makers to be non-injurious to domestic animals—a claim which the City Bacteriologist has, by experiments on various kinds of domestic animals, proved to be well founded. Squill is, therefore, invariably used in all open places, such as burns and refuse tips, and also in such places as granaries, where the sweepings are customarily sold for poultry food.

During the period of drought experienced in 1921, a liquid arsenical poison was used with success. This was simply diluted with water to the required strength, and it was found that in premises where water was scarce, rats readily drank this mixture. During the past summer, when water was not so scarce, less use was made of this liquid.

Undernoted are particulars regarding the number of poisoned baits laid during 1922:—

	Contributors' Premises.	Non-Contributors' Premises.	Town Council Premises.	Total.
Number of Baits laid, . .	52,670	27,333	9,631	89,634
Do. taken away	22,144	8,908	6,225	37,277
Liquid Poison laid, . . .	59½ pints.	½ pint.	..	60 pints.
Do. consumed	14¾ do.	...	...	14¾ do.

Following upon a suggestion made by the Board of Agriculture, two "Rat Weeks" were held during the year—the first in March, and the second in November.

On each occasion temporary premises were rented by the Department for the sale of rat poison. The only poisons sold were two forms of red squill. Each purchaser was supplied with a set of instructions giving full information as to how the poison was used, and was also supplied with a stamped addressed post card on which he was asked to give particulars as to the number of occasions on which poisoned baits were laid. It was recommended that baits should be laid at least three times. Prior to each of the "Rat Weeks," between 2,000 and 3,000 leaflets, inviting the occupiers of all rat-infested premises to take part in the campaign were distributed among the occupants of all premises likely to be infested with rats. Advertisements were also inserted in the local press. During these special campaigns the rat catchers employed by the Department were solely employed in laying poisoned baits in rubbish tips, burns, sewers, and other public places.

Undernoted are particulars as to the quantities of poison sold on each occasion :—

	MARCH.			NOVEMBER.		
	City Purchasers.	Country Purchasers.	Total.	City Purchasers.	Country Purchasers.	Total.
5-oz. bottles . . .	342	143	485	200	63	268
10-oz. do. . . .	86	117	203	114	87	201
25 oz. do. . . .	24	31	55	24	41	65
TOTALS,	452	291	743	338	196	534

Although every effort was made to get all purchasers to return the post cards given them, it was disappointing to find that a considerable number failed to comply with this request.

Undernoted is a summary of the information contained in the post cards :—

March.

CITY PURCHASERS.							
Number of Post Cards.		First Occasion.		Second Occasion.		Third Occasion.	
Issued.	Returned.	Laid.	Missing.	Laid.	Missing.	Laid.	Missing.
452	289	6,740	4,044	5,640	2,311	2,821	885
Percentage of Baits missing . . .		60 per cent.		41 per cent.		31 per cent.	

Number of baits laid by rat catchers in public places . . .	6,250
Number of such baits taken away	4,059
Percentage taken away	65 per cent.

COUNTRY PURCHASERS.							
Number of Post Cards.		First Occasion.		Second Occasion.		Third Occasion.	
Issued.	Returned.	Laid.	Missing.	Laid.	Missing.	Laid.	Missing.
291	197	6,701	4,677	5,383	2,695	3,182	1,366
Percentage of Baits missing . . .		70 per cent.		50 per cent.		43 per cent.	

November.

CITY PURCHASERS.							
Number of Post Cards.		First Occasion.		Second Occasion.		Third Occasion.	
Issued.	Returned.	Laid.	Missing.	Laid.	Missing.	Laid.	Missing.
338	231	4,264	2,344	2,753	839	1,458	256
Percentage of Baits missing . . .		55 per cent.		30 per cent.		18 per cent.	

Number of baits laid by rat catchers in public places	8,340
Number of such baits taken away	4,153
Percentage taken away	50 per cent.

COUNTRY PURCHASERS.							
Number of Post Cards.		First Occasion.		Second Occasion.		Third Occasion.	
Issued.	Returned.	Laid.	Missing.	Laid.	Missing.	Laid.	Missing.
196	118	3,007	1,977	2,206	1,037	1,084	312
Percentage of Baits missing . . .		66 per cent.		47 per cent.		29 per cent.	

It was interesting to observe from the post cards returned that in a number of cases where a large number of baits were taken away on the first occasion, this number was not only greatly reduced on the second occasion, but on the third occasion it was found that no baits had been taken away. This would indicate that for the time being the premises had been cleared of rats. Indeed, a number of persons stated in their replies that up to the date of writing—some considerable time after the poison had been laid—their premises had been clear of rats. Needless to say, however, unless steps are taken to prevent re-infestation, the premises will again, sooner or later, become infested. In such cases, the only plan is for the occupants of such premises to lay down poison whenever the rats re-appear and not wait for the "Rat Weeks."

It is, of course, impossible to state the number of rats destroyed during either of the "Rat Weeks," but from the large number of poisoned baits taken away it is obvious that considerable destruction must have taken place.

There is no doubt that campaigns such as these do a considerable amount of good in awakening public interest, and probably their most valuable feature is the concentrated effort which results therefrom. The idea of the Board of Agriculture is that similar campaigns should take place in every district in Scotland and at the same time, and it may be in the near future that this hope may be realised. No similar campaigns were organised in the Counties of Aberdeen or Kincardine, but judging from the quantities of poison sold to country purchasers—the great majority of whom resided in one or other of these Counties—there is need for such an effort.

COMMON LODGING-HOUSES AND HOUSES LET IN LODGINGS.

At the end of 1922, there were only two common lodging-houses in the City, viz., the Sailors' Home and the Home for Deep Sea Fishermen.

The number of houses let in lodgings on the register was 34. This number includes four houses which were formerly registered as common lodging-houses, but which, on account of the charge per night having been in 1920 increased beyond the sum of 6d., were transferred to the register of houses let in lodgings.

Forty day visits and 24 night visits were made to the common lodging-houses—while 451 day and 164 night visits were paid to the houses let in lodgings. The houses were all kept in good repair and in a cleanly condition, and no serious contravention of the bye-laws was discovered. Particular attention is paid to the cleanliness of the bedding.

SANITARY CONDITION OF THEATRES, MUSIC HALLS, CINEMAS, &c.

Following upon a circular letter from the Scottish Board of Health, dated 6th December, 1920, all the places of public entertainment were periodically visited during the year. The number of licensed places of amusement is 37, and the number of visits paid was 192.

Special attention is paid to the ventilation and cleanliness of the premises. Adequate lavatory accommodation for the male and female patrons and also for the artistes was provided at one of the concert halls.

Undernoted are particulars as to the work carried out at the instance of the Department:—

Number of inspections	192
Improved ventilation provided for halls	2
Improved ventilation provided for water-closets	2
Sashcords for windows renewed	7
Cords for ventilators provided	11
Premises in which seats were cleaned	12
Floors of halls cleaned	7
Floors of dressing-rooms cleaned	13
Floors of passages cleaned	14
Walls of halls cleaned	12
Walls and ceilings of dressing-rooms cleaned	17
Walls and ceilings of staircases and passages cleaned	14
Walls and ceilings of water-closets cleaned	35
Walls and ceilings of urinals cleaned	8
Basins of water-closets cleaned	16
Urinal stalls cleaned	8
Additional water-closets provided	3
Basin of water-closet renewed	1
Water-closet repaired	1

Urinal repaired	1
Lock provided for water-closet door	1
Water-closet cistern repaired	1
Pulls provided for water-closet cisterns	2
Ventilation pipe repaired	1
Windows of water-closets repaired or re-glazed	3
Plaster on walls and ceilings repaired	2
Choked drains or pipes cleared	4
Accumulations of rubbish removed	1

PORT SANITARY INSPECTION.

In accordance with the scheme of Port Sanitary Administration, prepared by the Local Authority and subsequently approved by the Scottish Board of Health, 465 vessels—371 British and 94 Foreign—were inspected during the year. Of these 96 were found to be unsatisfactory. The Department receive daily a list of all the arrivals and departures, and all vessels from foreign ports are inspected as soon as possible after arrival.

Undernoted are particulars as to the sanitary defects or nuisances found:—

Forecastles, Rooms, &c.

Floors dirty	19	Ports defective	10
Walls dirty	12	Food stored in sleeping apartment	1
Tables and benches dirty	4	Heating stoves defective	6
Bunks and bedding dirty	4	Ship sides leaking	6
Food lockers dirty	11	Inadequate ventilation	4
Galley dirty	1	Inadequate lighting	1
Messroom dirty	1	Drinking water tank defective	1
Drinking water tank dirty	1	Drinking water tank in unsuit- able position	1
Forecastles infested with vermin	6		

Water-closets, Wash-houses, &c.

Floors of w.c.'s dirty	6	Flushing apparatus defective	7
Basins of w.c.'s dirty	3	Basin of w.c. defective	1
Ablution bench dirty	1	Urinal choked	1
Gear stored in w.c. apartments	4		

INFECTIOUS DISEASE.

There were, in all, 1,736 cases of infectious disease removed to, or treated in, the various hospitals, and 5,804 cases were supervised at home. The majority of the latter were cases of measles and whooping cough, of which there were, respectively, 3,475 and 1,412.

The usual notices were in every case served under Section 50 (2) of the Public Health (Scotland) Act, 1897, and Section 53 (2) of the same Act.

There were 5,487 intimations made to school teachers, 4,735 houses and 5,350 sets of clothing and bedding disinfected, and 599 chaff beds destroyed.

INTERMENTS.

Applications were received in 47 cases, under Section 69 of the Public Health (Scotland) Act, 1897, to bury unclaimed bodies or the bodies of persons whose relatives were unable to do so, as compared with 25 applications in 1921 and 18 in 1920.

Forty-two of the applications were granted at a cost to the Department of £94 19s., of which £22 12s. 1d. was refunded by relatives and paid over to the City Chamberlain.

The ages of the interred were:—27 under 1 year of age, 9 between 1 and 12 years, and 6 from 12 years of age upwards.

Thirty-nine of the interments were carried out in Trinity Cemetery, 1 in Nellfield Cemetery, 1 in St. Peter's Cemetery, and 1 in John Knox Churchyard.

PROSECUTIONS.

Particulars as to the prosecutions instituted by the Department in the course of the year will be found in Appendix IV.

I am, Gentlemen,

Your obedient servant,

JAMES CUMMING,
Sanitary Inspector.

APPENDIX I.

STATEMENT OF PROCEEDINGS UNDER THE PUBLIC HEALTH AND OTHER ACTS
DURING 1922.

	Number.
Subordinate Sanitary Inspectors employed,	12

I.—NUISANCES.

Complaints received,	2,809
Intimations under Section 19,	5,936
Notices served under Section 20,	306
Cases in which Legal Proceedings were taken,	0

II.—WORKSHOPS.

Inspections,	2,912
Notices served under Section 2 (3) of Factory and Workshop Act, 1901,	669
Cases in which Legal Proceedings were taken,	0

III.—TENTS AND VANS.

Inspections,	42
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IV.—UNDERGROUND DWELLINGS.

Reported to Local Authority,	0
Notices to Owners (Section 74),	0

V.—COMMON LODGING-HOUSES.

On Register at 1st January, 1922,	2
Registered during year (not to include Renewals),	0
Renewals of Registration,	2
Removed from Register,	0
On Register at 31st December, 1922,	2
*Common Lodging-Houses belonging to the Local Authority,	1
Inspections between 8 a.m. and 10 p.m.,	40
Inspections between 10 p.m. and 8 a.m.,	24
Intimations of Irregularities sent to Keepers,	0
Cases of Infectious Disease reported to Medical Officer (Section 97),	0
Unregistered Premises dealt with,	0
Cases in which Legal Proceedings were taken (Breaches of Bye-laws, &c.),	0

* Meantime registered as a "House Let in Lodgings."

VI.—HOUSES LET IN LODGINGS.

On Register at 1st January, 1922,	33
Registered during year,	2
Removed from Register,	1
On Register at 31st December, 1922,	34
Inspections,	615
Cases in which Legal Proceedings were taken,	0

VII.—INFECTIOUS DISEASES.

	Number
Visits of Inquiry, &c.,	21,055
Patients removed to Hospital,	1,623
Persons removed to House of Reception,	113
Notices served under Section 50 (2),)	
Notices served under Section 53 (2),)	10,022
Intimations to Education Authorities, Teachers, &c.,	5,487
Houses and Premises disinfected,	4,735
Sets of Clothing, Bedding, &c., disinfected or destroyed,	5,350
Cases in which Legal Proceedings were taken,	0

VIII.—BURIALS.

Burials undertaken in terms of Section 69,	42
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IX.—DAIRIES, COWSHEDS, AND MILKSHOPS.

On Register at 1st January, 1922,	564
Registered during year,	170
Removed from Register,	82
On Register at 31st December, 1922,	652
Inspections,	2,488
Contraventions of Orders or Regulations dealt with,	7
Cases in which Legal Proceedings were taken,	0

X.—SLAUGHTER-HOUSES AND OFFENSIVE TRADES.

Applications under Section 32 for sanction to establish,	1
Applications granted,	1
Applications under Section 33 for Licence or Renewal of Licence,	7
Applications granted,	7
Public Slaughter-Houses (if any) belonging to Local Authority,	0
Private Slaughter-Houses,	5
Unlicensed Slaughter-Houses dealt with,	0
Inspections of Slaughter-Houses,	1,867
Inspections of other Offensive Businesses,	2,840
Number of such other Offensive Businesses at 31st December, 1922,	48
Cases in which Legal Proceedings were taken (Breaches of Bye laws, &c.),	0

XI.—UN SOUND FOOD.

Inspections under Section 43,	8,507
Seizures of Unsound Food,	1,328
Animals or Carcases or Articles of Food destroyed with Owner's Consent by or at the instance of the Sanitary Inspector,	1,328
Cases in which Owners of Unsound Food were prosecuted,	0

XII.—SALE OF FOOD AND DRUGS ACTS.

Samples procured for Analysis,	608
Certified to be Genuine,	575
Certified to be Adulterated,	33
Cases in which Legal Proceedings were taken,	17
Cases in which Legal Proceedings were successful,	17

XIII.—RAG FLOCK ACT, 1911.

	Number.
Samples procured for Analysis,	13
Certified to conform to Board's standard,	13
Certified not to conform to Board's standard,	0
Cases in which Legal Proceedings were taken,	0

XIV.—BYE-LAWS.

Inspections in carrying out Bye-laws relating to—

(a) Pig-styes,	377
(b) Other sanitary matters,	0

APPENDIX II.

INSPECTIONS OF FOOD.

NUMBER AND PLACE OF INSPECTIONS OF FOOD DURING YEAR 1922.

Fish Market,	330	Fleshers' Shops,	342
Shipping Sheds,	73	Fruiterers' Shops,	38
Fish-curing Premises,	1,068	Restaurants,	9
Slaughter-houses,	1,867	New Market Hall,	319
Meat Marts,	1,157	Street Markets,	244
Provision Curing Works,	262	Other Premises,	2,305
Wholesale Warehouses,	301		
Grocers' Shops,	113	Total,	<u>8,507</u>
Fishmongers' Shops,	79		

UNSOUND FOOD SEIZED OR DESTROYED DURING YEAR 1922.

	No. of Seizures	WEIGHT IN LBS.											
		Beef.*	Veal.*	Mutton*	Pork.*	Offal.	Game.	Poultry.	Fruit & Vegetes	Tinned Food.	Fish.	Butter.	Bacon. Eggs.
Jany.,	86	23,441	189	237	58	222	...	...	...	191	...	...	...
Feby.,	104	31,560	10	525	12	239	71	...	...	949	5,320	54	...
March,	126	26,648	60	691	237	455	...	...	...	1,113	5,152	...	...
April,	125	29,328	340	489	123	623	...	...	56	526	...	...	...
May,	170	29,243	353	212	353	1,111	95	...	...	970	6,160	...	...
June,	151	33,885	279	316	454	671	156	108	...	543	4,704	56	308
July,	90	15,155	300	208	75	261	...	...	...	796	2,114	...	...
August,	86	16,064	...	91	168	168	16	...	...	1,172	196	...	...
Sept.,	103	15,461	100	730	886	218	...	...	10,496	563	3,150	...	9
Oct.,	71	13,296	123	363	359	229	...	16	...	3,470	196	...	...
Nov.,	104	21,582	265	646	405	243	...	...	...	657	420	82	...
Dec.,	112	24,852	22	604	163	310	...	92	1,142	568	2,282	...	...
	1,328	280,515	2,041	5,112	3,293	4,750	338	216	11,694	11,518	29,694	192	308 9

* Including offal where forming only part of seizure.

FOOD INSPECTIONS.—SUMMARY FOR YEARS 1913 to 1922.

	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
Number of Inspections,	9,750	10,245	11,009	11,100	11,370	10,433	10,416	9,828	10,080	8,507
Number of Seizures,	730	908	1,099	1,157	1,052	1,680	2,464	2,504	1,350	1,328
Weight of Food Seized (Tons),	123	142	125	399	96	173	270	272	133	156
Number of Cases dealt with by Magistrates, . . . . .	...	2	5	...	...	1	...	...	2	...
Legal Proceedings instituted, . . . . .	...	1	3	...	...	1	...	...	2	...
Fines Imposed, . . . . .	...	£5	£22 7s.	...	...	£5 18s. 6d.	...	...	£10 10s.	...

CAUSES OF SEIZURE OF UNSOUND FOOD.

A.—CARCASSES.

DISEASE.	CATTLE.		SHEEP.		SWINE.		TOTAL.		
	Entire Carcase	Part Carcase	Entire Carcase	Part Carcase	Entire Carcase	Part Carcase	Entire Carcase	Part Carcase	Weight in lbs.
Tuberculosis,	221	310	...	...	5	...	226	310	224,955
Septicaemia,	2	...	...	...	...	...	2	...	1,278
Metritis,	1	...	...	...	...	...	1	...	575
Actinomycosis, . . . . .	...	1	...	...	...	...	...	1	27
Inflammatory Diseases,	10	116	1	15	4	5	15	136	10,736
Parasitical Diseases, . . . . .	...	4	...	...	...	...	...	4	220
Suffocation, . . . . .	...	...	1	...	...	...	1	...	30
Emaciation,	2	...	15	...	4	...	21	...	1,141
Fractures and Bruising,	5	125	2	14	...	11	7	150	12,498
Necrosis, . . . . .	...	2	...	...	...	...	...	2	47
Red Water,	2	1	...	...	...	...	2	1	1,662
Joint Ill, . . . . .	...	1	...	...	...	...	...	1	20
Dropsy,	15	2	1	...	1	...	17	2	6,694
Immaturity,	4	...	...	...	...	...	4	...	210
Decomposition,	25	39	77	4	4	1	106	44	19,248
Other Causes,	24	25	16	3	7	3	47	31	16,370
Totals,	311	626	113	36	25	20	449	682	295,711

B.—OTHER ARTICLES OF FOOD.

ARTICLES.	WHERE SEIZED.	LOTS AND WEIGHTS.	REASON FOR SEIZURE.
		lbs.	
Fish,	Fish Market and Cold Store,	(22 lots) 2,694	Decomposition.
Poultry and Game,	Meat Marts and Cold Stores,	(12 ,,) 554	Do.
Bacon,	Cold Store,	(1 ,,) 308	Do.
Butter,	Cold Store,	(3 ,,) 192	Do.
Eggs,	Store,	(1 ,,) 9	Do.
Fruit (Apples, Pears, Dates, and Prunes), and Vegetables,	Warehouses,	(5 ,,) 11,694	Do.
Tinned Foods,	Grocers' Shops and Warehouses,	(183 ,,) 11,518	Do.
Total Weight,		53,969	

APPENDIX III.

LIST OF REGISTERED WORKSHOPS IN ABERDEEN AT 31st DECEMBER, 1922,
WITH NUMBER OF EMPLOYEES.

Description of Workshop.	Number.	No. of Male Employees.	No. of Female Employees.
Agricultural Implement Maker,	1	—	—
Bakers,	42	58	53
Basketmakers,	2	11	—
Blacksmiths,	19	37	—
Bootmakers,	25	22	1
Bottlers,	11	29	25
Brushmaker,	1	3	—
Capmaker,	1	—	3
Carpet Shoemaker,	1	—	—
Cartwrights,	3	4	—
Carvers (including Gilders),	4	3	—
Confectioners,	10	10	7
Coopers,	13	27	—
Corkcutter,	1	—	—
Corset Makers,	2	—	1
Cycle Repairers,	19	22	—
Dentists (Mechanical),	5	12	—
Embroiderer,	1	—	2
Engravers,	6	7	—
Fishcurers,	80	262	541
Fishdriers,	3	69	—
Fishing Net Makers,	8	4	79
Fish Packers,	77	172	64
Fish Box Washers,	12	23	—
Fishing Tackle Makers,	2	3	40
Furniture, Makers of,	39	63	52
Gold Paint Manufacturer,	1	1	1
Golf Club Repairer,	1	1	—
Gut or Tripe Cleaner,	1	9	16
Health Salt Manufacturer,	1	—	2
Ham Curers,	2	2	1
Indiarubber Merchants,	2	1	2
Joiners,	16	29	—
Japanner,	1	3	—
Laundries,	6	1	37
Mattress Makers,	3	5	3
Milliners,	34	—	67

Description of Workshop.	Number.	No. of Male Employees.	No. of Female Employees.
Motor Repairers,	3	5	—
Motor Car Trimmings, Manufacturers of	2	11	—
Oil Manufacturers,	2	6	—
Optician,	1	2	—
Organ Builder,	1	—	—
Painters (including Glass Stainers),	30	216	2
Paper Bag Makers,	2	—	51
Photographers,	12	6	22
Piano Repairers,	5	10	4
Picture Frame Makers,	7	16	1
Plaster Casters and Tile Fixers,	6	18	—
Plumbers,	27	75	—
Rag and Metal Merchants,	11	7	24
Riggers,	4	15	—
Ropemakers,	2	5	—
Sackmaker,	1	3	—
Saddlers,	9	12	3
Sailmakers,	2	6	—
Saw Trimmers,	3	2	—
Scale Repairers,	2	4	—
Shirt Maker,	1	—	7
Stonecutters,	8	13	—
Tailors,	103	187	218
Taxidermist,	1	—	2
Tinsmiths,	8	26	—
Umbrella Repairer,	1	1	—
Undertakers,	5	14	5
Venetian Blind Maker,	1	1	—
Watchmakers and Jewellers,	19	29	—
Wearing Apparel, Makers of	78	—	272
Wigmakers,	3	3	1
Wireworker,	1	3	—
Totals,	817	1589	1609

APPENDIX IV.—PROCEEDINGS FOR CONTRAVENTIONS OF STATUTES IN YEAR 1922.

Date.	Court.	Act.	Offence.	Penalty or Decision.
Feb. 2	Sheriff	Sale of Food and Drugs Acts	Selling whisky which was 4.72 degrees under the statutory standard of 3.5 degrees under proof	Penalty, £5
" 3	Do.	Do.	Selling milk containing not more than 1.90 p.c. fat	Penalty, £3 10s.
" 16	Do.	Shops (Early Closing) Act, 1920	Shopkeeper and assistant selling a musical instrument beyond prescribed closing hour	{ Shopkeeper fined 20s., with 24s. expenses; assistant fined 5s., with 24s. expenses.
" 16	Do.	do.	Shopkeeper selling cigarettes beyond prescribed closing hour	
" 16	Do.	do.	Shopkeeper selling cigarettes beyond prescribed closing hour	Penalty, 9s. 6d., with 20s. 6d. of expenses.
Mar. 9	Do.	Do.	Shopkeeper and assistant selling confectionery and cigarettes beyond prescribed closing hour	{ Shopkeeper fined 10s., with 23s. 6d. expenses; case against assistant deserted.
" 9	Do.	do.	Shopkeeper selling cigarettes beyond prescribed closing hour	
" 9	Do.	do.	Shopkeeper selling cigarettes beyond prescribed closing hour	Penalty, 10s., with 20s. 6d. expenses.
" 10	Do.	Sale of Food and Drugs Acts	Supplying milk containing not more than 2.68 p.c. fat	Penalty, £1.
" 13	Do.	do.	Supplying milk containing not more than 2.73 p.c. fat	Penalty, £4.
" 13	Do.	do.	Supplying milk containing not more than 2.82 p.c. fat	Case withdrawn, as milk from cows was found to be under standard.
" 30	Do.	do.	Supplying milk containing not more than 2.80 p.c. fat	Penalty, 35s.
" 30	Do.	do.	Supplying milk containing not more than 2.89 p.c. fat	Letter of warning sent.
" 30	Do.	do.	Selling butter containing not less than 16.6 p.c. water	Letter of warning sent.
April 6	Do.	Shops (Early Closing) Act, 1920	Shopkeeper and assistant selling biscuits beyond prescribed closing hour	{ Shopkeeper fined 5s., with 23s. 3d. expenses; case against assistant deserted.
" 6	Do.	do.	Shopkeeper and assistant selling biscuits beyond prescribed closing hour	
" 13	Do.	Sale of Food and Drugs Acts	Selling butter containing not less than 30 p.c. foreign fat	Penalty, £3.
" 14	Do.	do.	Supplying milk containing not more than 2.54 p.c. fat	Case withdrawn, as milk from cows found to be under standard.
" 24	Do.	do.	Selling milk containing not more than 2.90 p.c. fat	Penalty, £1.
" 27	Do.	do.	Supplying milk containing not more than 2.90 p.c. fat	Penalty, £4.
" 27	Do.	The Milk (Scotland) Order, 1921	Adding colouring matter to milk	Penalty, £5.
" 27	Do.	Shops (Early Closing) Act, 1920	Selling confectionery beyond prescribed closing hour	Fined 20s. of modified expenses.
" 27	Do.	Sale of Food and Drugs Acts	Selling milk containing not more than 2.90 p.c. fat	Case withdrawn, as milk supplied to accused was found under standard.
May 11	Do.	Shops (Early Closing) Act, 1920	Selling biscuits beyond prescribed closing hour	Charge found "Not proven."
" 31	Do.	Sale of Food and Drugs Acts	Selling milk containing not more than 2.72 p.c. fat	Case withdrawn, as milk supplied to accused found under standard.

PROCEEDINGS FOR CONTRAVENTIONS OF STATUTES—continued.

Date.	Court	Act.	Offence.	Penalty or Decision.
1922.				
May 31	Sheriff	Sale of Food and Drugs Acts,	Supplying milk containing not more than 2.66 p.c. fat	Case withdrawn, as whole consignment found above standard.
" 31	Do.	Do.	Selling milk containing not more than 2.32 p.c. fat	Case withdrawn, as milk supplied to accused found under standard.
June 2	Do.	Shops (Early Closing) Act, 1920	Selling eggs beyond prescribed closing hour	Penalty, 20s. of modified expenses.
" 2	Do.	Do.	Selling cigarettes beyond prescribed closing hour	Penalty, 20s. of modified expenses.
" 2	Do.	Sale of Food and Drugs Acts	Supplying milk containing not more than 2.89 p.c. fat	Penalty, 35s.
" 9	Do.	Do.	Selling butter containing not less than 16.3 p.c. water	Case withdrawn, as butter supplied to accused found under standard.
" 12	Do.	Do.	Selling butter containing not less than 17.8 p.c. water	Penalty, £2 2s.
" 26	Do.	Do.	Selling milk containing not more than 1.92 p.c. fat	Penalty, £6.
July 18	Do.	Do.	Selling butter containing not less than 19.4 p.c. water	Withdrawn, as accused had died previous to case being called in Court.
" 27	Do.	Do.	Selling milk containing not more than 2.85 p.c. fat	Penalty, £3.
" 27	Do.	Shops (Early Closing) Act, 1920,	Selling cigarettes beyond prescribed closing hour	Case withdrawn, as accused was prosecuted for selling same cigarettes to a child.
Aug. 10	Do.	Do.	Selling biscuits beyond prescribed closing hour	Fined 15s. of modified expenses.
" 11	Do.	Sale of Food and Drugs Acts.	Selling milk containing not more than 8.28 p.c. solids other than fat	Case withdrawn as milk supplied to accused found under standard.
" 11	Do.	Do.	Supplying milk containing not more than 8.14 p.c. solids other than fat	Case withdrawn, as milk from cows found under standard.
" 21	Do.	Shops (Early Closing) Act, 1920	Selling cigarettes beyond prescribed closing hour	Penalty, 30s. (2nd offence).
" 24	Do.	Sale of Food and Drugs Acts.	Supplying milk containing not more than 2.10 p.c. fat	Penalty, £12.
Sept. 2	Do.	Do.	Selling milk containing not more than 2.80 p.c. fat	Penalty, £5.
" 9	Do.	Do.	Selling milk containing not more than 8.25 p.c. solids other than fat	Case withdrawn, as milk supplied to accused found under standard.
" 22	Do.	Shops (Early Closing) Act, 1920	Shopkeeper and assistant selling fruit beyond prescribed closing hour	{ Shopkeeper and assistant each fined 10s.
" 22	Do.	Do.	Shopkeeper and assistant selling biscuits beyond prescribed closing hour	{ Case withdrawn; Letter of warning sent by Procurator-Fiscal.
Oct. 30	Do.	Do.	Selling milk containing not more than 2.76 p.c. fat	Penalty, £1.
" 30	Do.	Sale of Food and Drugs Acts.		
" 30	Do.			

PROCEEDINGS FOR CONTRAVENTIONS OF STATUTES—continued.

Date.	Court.	Act.	Offence.	Penalty or Decision.
1922.				
Nov. 1	Sheriff	Sale of Food and Drugs Acts .	Selling milk containing not more than 2.15 p.c. fat .	Penalty, £1.
" 2	Do.	Shops (Early Closing) Act, 1920	Selling confectionery beyond prescribed closing hour	Penalty, 10s. ; with 25s. expenses.
" 23	Do.	Do.	Shopkeeper and assistant selling confectionery beyond prescribed closing hour	{ Shopkeeper fined £1 ; Case against assistant deserted.
" 23	Do.	Do.	Supplying milk containing not more than 2.90 p.c. fat	{ Case withdrawn, as milk from cows found under standard.
Dec. 2	Do.	Sale of Food and Drugs Acts .	Selling biscuits beyond prescribed closing hour .	Penalty, 5s. ; with 25s. expenses.
" 21	Do.	Shops (Early Closing) Act, 1920	Shopkeeper and assistant selling fruit and confectionery beyond prescribed closing hour	{ Shopkeeper fined £1, with 14s. 3d. expenses ; Assistant fined 14s. 3d. modified expenses.
" 21	Do.	Do.	Shopkeeper and assistant selling beyond prescribed closing hour	{ Both accused having removed to Glasgow, bail of 37s. was accepted.
" 21	Do.	Do.	Selling biscuits beyond prescribed closing hour	Penalty, 5s. ; with 25s. expenses.
" 21	Do.	Do.		
" 21	Do.	Do.		
" 1923.				
Jan. 4	Do.	Sale of Food and Drugs Acts .	Selling milk containing not more than 2.73 p.c. fat .	Penalty, £5.
" 5	Do.	Shops Act, 1912, and Local Order	Failing to close shop not later than 2 p.m. on afternoon of weekly half-holiday	
" 5	Do.	Do.	Do.	
" 5	Do.	Do.	Do.	
" 5	Do.	Do.	Do.	
" 5	Do.	Do.	Failing to close shop not later than 1 p.m. on afternoon of weekly half-holiday	
" 5	Do.	Shops Act, 1912	Do.	Cases withdrawn, and letters of warning sent by Procurator-Fiscal.

CITY OF ABERDEEN.

REPORT

BY

JAMES CUMMING, Chief Sanitary Inspector,

For the Year ended 31st December, 1923.

OFFICE OF THE SECRETARY

REPORT

JAMES T. CONNELL, JR., SECRETARY

OF THE

UNITED STATES

DEPARTMENT OF THE INTERIOR

WASHINGTON, D. C.

1901

CONTENTS.

	PAGE
Introductory,	5
Complaints,	7
Drainage,	7
Housing—New Houses,	9
Clearance of Slum Areas,	9
Overcrowding,	10
Structural Defects and Want of Repair,	13
Paving of Back Courts and Passages,	14
Verminous Persons and Houses,	14
Whitewashing, &c., of Lobbies, Staircases, &c.,	15
Want of Cleanliness in parts of Premises used in Common,	16
Increase of Rent and Mortgage Interest (Restriction) Act, 1920,	19
Smoke Abatement,	20
Offensive Trades,	21
Pig-styes,	23
Workshops,	24
Bake-houses,	26
Dairies, Cow-sheds, and Milkshops,	28
Shops where Food Stuffs are Sold,	29
Places of Public Refreshment,	31
Meat Inspection,	32
The Sale of Food and Drugs Acts,	34
Rag Flock Act, 1911,	54
Poisons and Pharmacy Act, 1908,	55
Fertilisers and Feeding Stuffs Act, 1906,	55
Shops Act, 1912, and the Shops (Early Closing) Acts, 1920 and 1921,	56
Extermination of Rats,	60
Common Lodging-houses and Houses let in Lodgings,	63
Sanitary Condition of Theatres, Music Halls, Cinemas, &c.,	63
Port Sanitary Inspection,	64
Infectious Disease,	65
Interment of Unclaimed Bodies,	65
Prosecutions,	66
Appendices,	67

CONTENTS

1	Introduction
2	Chapter I
3	Chapter II
4	Chapter III
5	Chapter IV
6	Chapter V
7	Chapter VI
8	Chapter VII
9	Chapter VIII
10	Chapter IX
11	Chapter X
12	Chapter XI
13	Chapter XII
14	Chapter XIII
15	Chapter XIV
16	Chapter XV
17	Chapter XVI
18	Chapter XVII
19	Chapter XVIII
20	Chapter XIX
21	Chapter XX
22	Chapter XXI
23	Chapter XXII
24	Chapter XXIII
25	Chapter XXIV
26	Chapter XXV
27	Chapter XXVI
28	Chapter XXVII
29	Chapter XXVIII
30	Chapter XXIX
31	Chapter XXX
32	Chapter XXXI
33	Chapter XXXII
34	Chapter XXXIII
35	Chapter XXXIV
36	Chapter XXXV
37	Chapter XXXVI
38	Chapter XXXVII
39	Chapter XXXVIII
40	Chapter XXXIX
41	Chapter XL
42	Chapter XLI
43	Chapter XLII
44	Chapter XLIII
45	Chapter XLIV
46	Chapter XLV
47	Chapter XLVI
48	Chapter XLVII
49	Chapter XLVIII
50	Chapter XLIX
51	Chapter L
52	Chapter LI
53	Chapter LII
54	Chapter LIII
55	Chapter LIV
56	Chapter LV
57	Chapter LVI
58	Chapter LVII
59	Chapter LVIII
60	Chapter LIX
61	Chapter LX
62	Chapter LXI
63	Chapter LXII
64	Chapter LXIII
65	Chapter LXIV
66	Chapter LXV
67	Chapter LXVI
68	Chapter LXVII
69	Chapter LXVIII
70	Chapter LXIX
71	Chapter LXX
72	Chapter LXXI
73	Chapter LXXII
74	Chapter LXXIII
75	Chapter LXXIV
76	Chapter LXXV
77	Chapter LXXVI
78	Chapter LXXVII
79	Chapter LXXVIII
80	Chapter LXXIX
81	Chapter LXXX
82	Chapter LXXXI
83	Chapter LXXXII
84	Chapter LXXXIII
85	Chapter LXXXIV
86	Chapter LXXXV
87	Chapter LXXXVI
88	Chapter LXXXVII
89	Chapter LXXXVIII
90	Chapter LXXXIX
91	Chapter LXXXX
92	Chapter LXXXXI
93	Chapter LXXXXII
94	Chapter LXXXXIII
95	Chapter LXXXXIV
96	Chapter LXXXXV
97	Chapter LXXXXVI
98	Chapter LXXXXVII
99	Chapter LXXXXVIII
100	Chapter LXXXXIX
101	Chapter LXXXXX
102	Chapter LXXXXXI
103	Chapter LXXXXXII
104	Chapter LXXXXXIII
105	Chapter LXXXXXIV
106	Chapter LXXXXXV
107	Chapter LXXXXXVI
108	Chapter LXXXXXVII
109	Chapter LXXXXXVIII
110	Chapter LXXXXXIX
111	Chapter LXXXXXX
112	Chapter LXXXXXXI
113	Chapter LXXXXXXII
114	Chapter LXXXXXXIII
115	Chapter LXXXXXXIV
116	Chapter LXXXXXXV
117	Chapter LXXXXXXVI
118	Chapter LXXXXXXVII
119	Chapter LXXXXXXVIII
120	Chapter LXXXXXXIX
121	Chapter LXXXXXXX
122	Chapter LXXXXXXXI
123	Chapter LXXXXXXII
124	Chapter LXXXXXXIII
125	Chapter LXXXXXXIV
126	Chapter LXXXXXXV
127	Chapter LXXXXXXVI
128	Chapter LXXXXXXVII
129	Chapter LXXXXXXVIII
130	Chapter LXXXXXXIX
131	Chapter LXXXXXXX
132	Chapter LXXXXXXXI
133	Chapter LXXXXXXII
134	Chapter LXXXXXXIII
135	Chapter LXXXXXXIV
136	Chapter LXXXXXXV
137	Chapter LXXXXXXVI
138	Chapter LXXXXXXVII
139	Chapter LXXXXXXVIII
140	Chapter LXXXXXXIX
141	Chapter LXXXXXXX
142	Chapter LXXXXXXXI
143	Chapter LXXXXXXII
144	Chapter LXXXXXXIII
145	Chapter LXXXXXXIV
146	Chapter LXXXXXXV
147	Chapter LXXXXXXVI
148	Chapter LXXXXXXVII
149	Chapter LXXXXXXVIII
150	Chapter LXXXXXXIX
151	Chapter LXXXXXXX
152	Chapter LXXXXXXXI
153	Chapter LXXXXXXII
154	Chapter LXXXXXXIII
155	Chapter LXXXXXXIV
156	Chapter LXXXXXXV
157	Chapter LXXXXXXVI
158	Chapter LXXXXXXVII
159	Chapter LXXXXXXVIII
160	Chapter LXXXXXXIX
161	Chapter LXXXXXXX
162	Chapter LXXXXXXXI
163	Chapter LXXXXXXII
164	Chapter LXXXXXXIII
165	Chapter LXXXXXXIV
166	Chapter LXXXXXXV
167	Chapter LXXXXXXVI
168	Chapter LXXXXXXVII
169	Chapter LXXXXXXVIII
170	Chapter LXXXXXXIX
171	Chapter LXXXXXXX
172	Chapter LXXXXXXXI
173	Chapter LXXXXXXII
174	Chapter LXXXXXXIII
175	Chapter LXXXXXXIV
176	Chapter LXXXXXXV
177	Chapter LXXXXXXVI
178	Chapter LXXXXXXVII
179	Chapter LXXXXXXVIII
180	Chapter LXXXXXXIX
181	Chapter LXXXXXXX
182	Chapter LXXXXXXXI
183	Chapter LXXXXXXII
184	Chapter LXXXXXXIII
185	Chapter LXXXXXXIV
186	Chapter LXXXXXXV
187	Chapter LXXXXXXVI
188	Chapter LXXXXXXVII
189	Chapter LXXXXXXVIII
190	Chapter LXXXXXXIX
191	Chapter LXXXXXXX
192	Chapter LXXXXXXXI
193	Chapter LXXXXXXII
194	Chapter LXXXXXXIII
195	Chapter LXXXXXXIV
196	Chapter LXXXXXXV
197	Chapter LXXXXXXVI
198	Chapter LXXXXXXVII
199	Chapter LXXXXXXVIII
200	Chapter LXXXXXXIX

PUBLIC HEALTH DEPARTMENT,
CROWN MANSIONS, 41½, UNION STREET,
ABERDEEN, 1st November, 1924.

To

The Scottish Board of Health,

AND

The Lord Provost, Magistrates, and
Town Council of the City of Aberdeen.

GENTLEMEN,

I beg to submit the Annual Report of the work done in the Sanitary Inspector's Department during the year ended 31st December, 1923. The Report has been prepared in accordance with the requirements of the Board.

I have again to express my appreciation of the hearty co-operation and valuable services rendered by all the Members of the Staff.

There is a great deal of
work to be done in the
country of the future.

The future is not a dream.

The future is a reality.
It is the result of the work of the present.

(Continued)

It is not enough to say that the future is a reality.
It is necessary to show that it is a reality.
The future is not a dream.
It is the result of the work of the present.
It is the result of the work of the present.
It is the result of the work of the present.

COMPLAINTS.

Undernoted is a tabular statement regarding the number of complaints received, all of which were attended to.

	Complaints Received.	No Action Necessary.
(a) Choked or defective drains and sanitary conveniences	697	117
(b) Dampness	64	11
(c) Want of cleanliness	246	90
(d) Overcrowding	224	80
(e) Dwellings infested with vermin	152	38
(f) Nuisances caused by keeping domestic animals	135	50
(g) Offensive smells	136	66
(h) Accumulations of refuse	182	39
(i) Structural repairs	1,261	30
(j) Other	139	46
	<hr/>	<hr/>
Totals,	3,236	567
	<hr/>	<hr/>

DRAINAGE.

During the year the drainage and sanitary arrangements of 56 properties were examined. In 2 of the properties no defects were found, and the owners of the remaining 54 houses were called upon by the Department to carry out the alterations necessary in order to put the premises in accordance with modern requirements. In 30 cases, the work was completed before the end of the year. Five houses, regarding which notices had been served in the previous year, were also re-drained.

In the accompanying table, the amount of work done in connection with the drainage of houses is shown.

Defective drains made good,	35
Drain properly ventilated,	11
Additional water-closets fitted up,	9
Water-closets fitted up in lieu of privies,	4
Defective water-closets replaced,	14
Defective water-closets repaired,	96
Soilpipes of water-closets renewed or repaired,	20
Ventilation pipes renewed or repaired,	14
Additional ventilation provided for wastepipes,	6
Water-closet cisterns repaired,	167
Cisterns of hot-water circulations repaired,	3
Overflow pipes from cisterns repaired,	5

Pulls for cisterns provided,	27
Defective flushpipes repaired,	91
Basins of water-closets replaced or repaired,	42
Additional water supplies provided for water-closets,	13
Additional sinks provided,	4
Additional water supplies provided for sinks,	2
Defective sinks replaced or repaired,	20
New gratings provided for sinks,	2
Water supply pipes repaired,	51
Water taps repaired,	10
Defective bath replaced,	1
Waste or rainwater pipes replaced or repaired,	207
Lead trap provided for wastepipe,	1
Culvert repaired,	1
Defective grid traps replaced,	9
New gratings provided for grid traps,	48
New gratings provided for fresh air inlets,	10
Traps or fresh air inlets uncovered,	4
Additional eaves gutters and rainwater pipes fitted up,	32
Eaves gutters renewed or repaired,	218
Eaves and valley gutters cleared out,	37
New gratings provided for sinks,	2
Defective inspection covers renewed,	36
Choked drains and pipes cleared out,	1,288
Choked water-closets cleared out,	209

Attention has again to be drawn to the large number of choked drains and w.c.'s dealt with. The number of choked drains was 1288, as compared with 1046 in the previous year; while the number of choked w.c.'s was 209, as compared with 158. A house factor was fined thirty shillings for permitting a choked drain to exist.

It is disappointing to find that the number of choked drains and water-closets has increased. There is no doubt that a large percentage of such chokages is due to improper usage on the part of the tenants, and in pursuance of the policy introduced by the Department several years ago, letters of warning were sent to all the tenants of those properties where there was reason to believe that the chokage was due to wilful interference or improper usage. During the year 227 letters were sent.

In one case, legal proceedings were instituted against a tenant for improperly using a w.c., and a fine of five shillings, with twenty-six shillings of expenses, was imposed.

It is gratifying to be able to report that these specific warnings sent to tenants have resulted in a diminution in the number of recurring chokages in these particular properties. Until, however, tenants realise that it is a duty they owe to their landlords, their neighbours and themselves, to refrain from misusing sanitary conveniences, little progress will be made in this direction.

HOUSING.

New Houses.

During the year, no new houses were erected under the Housing Scheme, approved of by the Town Council on 17th November, 1919. As stated in a previous report, the total number of houses erected under this Scheme is 156—68 being three-roomed and 88 four-roomed. The plans of 86 additional houses—48 three-roomed and 38 four-roomed—have now been approved by the Board of Health, and these houses are in course of erection.

It will thus be seen that the total number of houses which can be erected in the City under this Scheme is 242. This number is proportionately much smaller than in any of the larger burghs in Scotland. It is true that prior to the War there was no scarcity of houses in the City, and overcrowding which could not be abated was practically unknown. As will be seen from the table on page 10, the housing shortage became very acute in 1920, and since that date until the end of last year the number of houses in which it was found impossible to abate overcrowding, totalled 370.

The total number of individual dwellings erected during the year by private enterprise was 27, and of these 9 contained four rooms, 2, five rooms, 9, six rooms, 1, seven rooms, 2, eight rooms, 3, nine rooms, and 1, twelve rooms. No houses of a less size than four rooms were, therefore, erected. The most clamant demand is, of course, for the smaller sized house.

Quite recently the Town Council decided to erect, under the Housing, &c., 1923, Act, 20 three-roomed houses, and it is gratifying to be able to report that since that time they have advertised for offers to provide 500 additional houses.

The marriage-rate of Aberdeen may be taken as a measure of the annual increase in the number of houses required to meet the needs of the population. Since 1920—the year in which the housing became very acute—the average number of marriages taking place in the City, in which the male was resident in the City, was 1193. In addition to these marriages, there has to be taken into consideration all the marriages taking place elsewhere than Aberdeen, and in connection with which the home is to be in Aberdeen.

It is obvious, therefore, that in addition to providing houses to make up for arrears, allowance requires to be made to meet the natural increase in population.

It is estimated that, with the material and labour available in the City at present, the maximum number of dwellings which could be erected per annum would not exceed 200, even although there were no financial difficulties to be encountered. Various forms of slabs and concrete blocks are now being extensively used, with the result that the difficulty in obtaining skilled labour for building purposes is greatly minimised. The use of such materials seems at present to be the only method whereby rapidity of construction can be attained.

Clearance of Slum Areas.

As a preliminary to proceeding with the Scheme for the clearance of slum areas, 48 two-roomed houses are at present in course of erection at Cattofield.

Overcrowding.

The following table gives particulars as to the number of houses found overcrowded within the past eight years:—

	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	TOTALS.
Houses measured,	1,640	1,406	711	609	709	742	792	724	7,333
Number found overcrowded,	90	106	99	58	130	167	137	170	957
Number where overcrowding was abated,	89	98	82	42	66	78	49	41	545
Number where excess was not more than $\frac{1}{2}$ adult, . .	22	32	18	12	16	27	18	24	169
Do. do. 1 ,,	27	41	50	18	53	54	48	49	340
Do. do. $1\frac{1}{2}$ adults, . .	22	17	15	14	26	36	29	37	196
Do. do. 2 ,,	14	11	10	9	17	17	16	26	120
Do. do. $2\frac{1}{2}$,,	3	3	3	3	7	15	10	12	56
Do. do. 3 ,,	0	2	1	2	5	5	7	13	35
Do. do. $3\frac{1}{2}$,,	0	0	1	0	4	7	4	2	18
Do. do. 4 ,,	2	0	0	0	1	3	4	1	11
Do. do. $4\frac{1}{2}$,,	0	0	1	0	1	1	1	2	6
Do. do. 5 ,,	0	0	0	0	0	2	0	2	4
Do. do. $5\frac{1}{2}$,,	0	0	0	0	0	0	0	2	2

It will be observed that in recent years the number of houses where the excess has been greater than two adults has greatly increased. Thus, the number of such houses in the last four years was 111, as compared with 21 in the immediately preceding four years.

Undernoted are particulars as to some of the worst cases discovered in 1923:—

- (a) In a two-roomed house there were living the father, mother, five sons (aged, respectively, 19, 17, 15, 8, and 11-12th years), and three daughters (aged, respectively, 20, 13, and 3 years)—a total of $8\frac{1}{2}$ adults, whereas there was accommodation in the house for 3 adults only.

All efforts to obtain a larger house have failed, and the house is still overcrowded to the extent indicated above.

The householder's employment has been intermittent for a number of years. Four members of the family are employed. The total earnings coming into this house range from £4 10s. to £5 per week.

- (b) In a two-roomed house there were living the father, mother, four sons (aged, respectively, 23, 18, 13, and 9 years), and six daughters (aged, respectively, 16,

15, 11, 7, 4, and 2 years)—a total of 10 adults, whereas there was accommodation for 5 adults only.

In this case, also, all efforts to obtain a larger house have failed and the house is still overcrowded to the extent indicated above.

The householder and two daughters are wage-earners, and the total income is £3 3s. per week.

- (c) In a two-roomed house there were living the father, mother, six sons (aged, respectively, 18, 14, 8, 6, 4, and 11-12th years), and three daughters (aged, respectively, 13, 3, and 2 years)—a total of 8 adults, whereas there was accommodation for $3\frac{1}{2}$ adults only.

In this case, also, all efforts to obtain a larger house have failed, and the house is still overcrowded to the extent indicated above.

The householder and two sons are wage-earners, and the total weekly income is £4 10s.

- (d) In a two-roomed house there were living the father, mother, six daughters (aged, respectively, 20, 19, 15, 6, 4, and $1\frac{1}{2}$ years), and three sons (aged, respectively, 14, 8, and 7 years)—a total of $8\frac{1}{2}$ adults, whereas there was accommodation for 4 adults only.

In this case arrangements were made to have the daughter, aged 20, boarded out, so that the excess has been reduced to the extent of 3 adults.

The householder has been an invalid for years, and the total weekly income is £3 0s. 6d.

- (e) In four very small rooms there were living the father, mother, six sons (aged, respectively, 27, 21, 15, 13, 8, and 4 years), and three daughters (aged, respectively, 18, 16, and 12 years)—a total of 10 adults, whereas there was accommodation therein for $6\frac{1}{2}$ adults only.

Two sons have now joined the Army, so that the overcrowding has been reduced to the extent of $1\frac{1}{2}$ adults.

The total weekly earnings were £5 13s.

- (f) In a two-roomed house there were living the father, mother, a married daughter and her three children (aged, respectively, 6, 4, and 1 year), an unmarried daughter and her child (aged 4 years, and a son, aged 20 years)—a total of 7 adults, whereas there was accommodation for 4 adults only.

The married daughter has been able to get a single room for her family and herself, so that the excess has now been reduced to the extent of one child.

- (g) In a one-roomed house there were living the father, mother, three sons (aged, respectively, 9, 4, and 3 years, and two daughters, aged, respectively, 11 and 1 years)—a total of 5 adults, whereas there was accommodation therein for 2 adults only.

Arrangements have been made for enabling the elder girl to sleep in a neighbour's house, so that the excess has now been reduced to 2 adults.

The father's weekly wage was £2 5s.

- (h) In a sub-let room there were living the father, mother, three daughters (aged, respectively, 20, 18, and 3 years, and one son, aged 12 years)—a total of $5\frac{1}{2}$ adults, whereas there was accommodation for $2\frac{1}{2}$ adults only.

This family has now removed to the country.

- (i) In a two-roomed house there were living the father, mother, six sons (aged, respectively, 19, 17, 10, 8, 7, and 3 years, and a daughter, aged 3 years; as also a married couple with one child)—a total of $9\frac{1}{2}$ adults, whereas there was accommodation therein for $6\frac{1}{2}$ adults only.

The lodgers have been able to find accommodation elsewhere, so that the excess in this case has been reduced to 1 child.

- (j) In a two-roomed house there were living the mother, four sons (aged, respectively, 22, 20, 19, and 14 years; as also a married daughter with two young children)—a total of 7 adults, whereas there was accommodation therein for 4 adults only.

The overcrowding in this case has been abated by the married daughter and her two children finding accommodation elsewhere, and by a son now being employed in the country.

- (k) In a three-roomed house there were living the father, mother, six daughters (aged, respectively, 20, 19, 17, 15, 10, and 8 years, and four sons, aged, respectively, 13, 7, 4, and 2 years)—a total of 10 adults, whereas there was accommodation for $7\frac{1}{2}$ adults only.

The eldest daughter is now married and has obtained a house of her own, and the youngest child has died, so that the excess has been reduced to the extent of 1 adult.

- (l) In a two-roomed house there were living the father, mother, four sons (aged, respectively, 9, 6, $1\frac{1}{2}$, and 1-12th years, and two daughters, aged, respectively, 11 and 4 years; as also a male lodger)—a total of $6\frac{1}{2}$ adults, whereas there was accommodation for 4 adults only.

Accommodation was found elsewhere for the lodger, and the husband has now gone to Canada, so that the excess has been reduced to the extent of 1 child.

- (m) In a one-roomed apartment seven French onion sellers were found living and there was accommodation for 4 adults only.

In this case the overcrowding was abated by the converting of a second apartment into a sleeping place.

In several of the worst cases of overcrowding dealt with in the previous two years, it has been found impossible to abate the overcrowding. Apart from the difficulty which the householder with a large family finds in being able to pay rent for the accommodation required, there is an undoubted reluctance on the part of proprietors and factors to let houses to large families. Then again, the man who is wholly or intermittently unemployed is severely handicapped in his task of endeavouring to obtain a larger house.

During the summer season it was found that a number of householders, particularly in the vicinity of the Beach, were providing accommodation for lodgers. In order to provide these householders with information as to the accommodation in their houses, 349 houses were visited, and in 24 cases notices were served upon the occupants as regards

overcrowding. As the overcrowding in these houses was of a temporary nature, these figures are not included in the table for overcrowding.

Structural Defects and Want of Repair.

As has been the practice for a number of years, a complete sanitary survey is made of all houses in which a case of tuberculosis has occurred, or to which a person suffering from that disease has removed.

During the past year the number of such surveys was 395.

All structural defects and want of repair found in these houses were dealt with. Special attention was paid to the proper ventilation of the sleeping apartments and to their freedom from dampness.

The number of complaints received regarding structural defects and want of repair was 1,261, but the Inspectors in the course of the systematic inspection of their district, paid particular attention to these conditions.

As has been stated in previous reports, a large amount of work has been done by the Department in past years in order to secure that the windows of all sleeping apartments can be easily opened for purposes of ventilation. The result has been that there are now comparatively few windows which do not comply with these requirements, so that during the past year only 26 sleeping apartments required to be dealt with. In six cases it was found that unsuitable apartments were being used for sleeping purposes, and after notices had been served upon the occupants, the apartments ceased to be used for that purpose. In six sleeping apartments enclosed beds were opened up.

As can readily be understood, dampness is a frequent source of complaint in the older type of dwellings, and in this connection 251 dwellings were dealt with. In 107 properties the roof coverings were repaired; in 56, the window rebats repointed; in 30, the external walls were repointed or otherwise repaired; and in 58, other remedial measures were carried out.

In the inspection of houses, careful attention is paid to any want of repair. During the past year, the floors of 63 dwelling apartments were repaired, as were also the floors of 300 lobbies and stair landings (including stair steps). In 201 dwelling apartments, 639 lobbies and staircases, 282 water-closets, 170 wash-houses, and 44 ponds, the plaster on the walls and ceilings was repaired. The woodwork around sinks was renewed or repaired in 146 houses, 45 defective chimneys and 60 grates or fireplaces were repaired; while the doors of dwelling apartments were renewed or repaired in 191 cases.

Generally speaking it was found that the proprietors were prone to allow wash-houses, w.c.'s, and cellars, to fall into a state of disrepair. Particulars as to the work done in this connection will be found on pages 17 and 18. The amount of repairs required in these pertinents of dwelling-houses was considerably greater than usual.

I have again to draw attention to the fact that a considerable amount of the want of repair in a number of houses is due to carelessness or malicious mischief on the part of someone. During the year, 801 windows or rooflights were reglazed at the instance of the Department. This number is considerably greater than in the previous year, when the number was 594. In a great many cases it is impossible to discover the culprits. It is common knowledge that frequently the damage is not caused by the tenants or their families, but is the result of malicious mischief on the part of young persons in the district.

In other cases, however, the damage is undoubtedly caused by the tenants or their families. Children, through want of a suitable playground, are allowed to play in the lobbies and staircases, with the result that staircase windows are frequently broken and the paper torn. In 639 houses the plaster on the walls and ceilings of lobbies and staircases required to be repaired. It is particularly aggravating to a proprietor to find that, after being put to considerable expense in re-decorating the lobbies and staircases, the walls are scratched or the plaster damaged by the use of some sharp instrument like a knife. In 33 cases, I was so satisfied that the damage was caused by acts of malicious mischief that I considered it my duty to write the tenants on the subject.

Paving of Back Courts and Passages.

There are now comparatively few properties in the City where the back courts are not paved or otherwise suitably surfaced. There is, however, a large number of houses where the passages leading to the outhouses have never been paved, and have been allowed to get into an unsatisfactory condition. During the year, a systematic inspection was made of the back courts and passages in tenement houses, and 30 courts and 146 passages were paved, while 87 courts and 84 passages were repaired. The paving of these courts and passages adds greatly to the comfort of the tenants.

Repairing of Private Lanes.

A systematic inspection was also made of all the private lanes in the City. In past years these lanes were frequently used by jobbing gardeners and others as a place of deposit for garden rubbish. There is nowadays, however, little cause for complaint in this connection.

These lanes are invariably used by coal carts when delivering coal. Within recent years the ordinary horse lorry has been substituted by a motor lorry, with the result that some of the lanes were little better than quagmires. Ten of these lanes were dealt with. Five were found to be so unsatisfactory that the surfaces required to be macadamised, and an adequate number of gullies provided for drainage purposes. In the remaining five cases, the surfaces were thoroughly repaired. The number of proprietors involved in the repairing of these lanes was so large that the negotiations took some considerable time. As a general rule, however, the practice followed was for one of the proprietors interested to call a meeting of all parties concerned. A sub-committee was then appointed who issued a specification to contractors, each owner paying his share of the cost in proportion to his frontage.

Verminous Persons and Houses.

Under the agreement between the Education Authority and the Town Council for dealing with verminous persons and houses, 78 families, comprising 471 persons were removed to the Cleansing Station for treatment. In the previous year the numbers were, respectively, 80 and 480.

In addition to the foregoing, 52 persons suffering from scabies and 73 verminous persons were treated at the Cleansing Station. These persons belonged to households in which there were no school children, and, therefore, did not fall to be dealt with under the agreement with the Education Authority.

The number of bug-infested houses dealt with during the year was 45. This number is considerably less than in either of the two preceding years, when the numbers were 81 and 154, respectively. As stated in previous reports, it is the practice of the Department to serve notices under Section 40 of the Public Health (Scotland) Act, 1897, on both owner and occupier in all such cases. Along with the notice to the owner is enclosed a letter informing him that if all the paper is removed from the walls and the skirtings and door facings stripped, the Department is prepared to fumigate thoroughly with sulphur all the infested rooms. It is also made a condition that after fumigation all broken plaster should be properly repaired, the woodwork washed with a disinfectant solution which is supplied gratuitously, and the walls distempered in place of being repapered. The occupier is also informed that if he is prepared to treat all the furniture and furnishings in a similar manner, the Department would supply the necessary disinfectant, and would also remove for steam disinfection all articles of clothing and bedding which could not be boiled.

No difficulty has been experienced in getting either owner or occupier to comply with these directions. This method of dealing with bug-infested houses continues to give very satisfactory results.

Filthy Houses.

During the year, the floors of 105 dwelling apartments, the articles of furniture in 113 apartments, and 116 sets of bed and body clothing were cleaned by the occupants after notices had been served upon them.

There is a considerable number of houses which require to be re-visited frequently in order to ensure that a satisfactory standard of cleanliness is being maintained. Legal proceedings had to be instituted against one householder who, despite repeated warnings, failed to keep his house in a cleanly condition. He was accordingly charged with failing to keep clean the floors of two of the apartments and the lobby connected therewith. He was further charged with permitting a pailful of human filth to remain in one of the dwelling apartments. Accused, who is a widower, with three of a family, pled guilty and was fined fifteen shillings. Immediately after the conviction he vacated the house and obtained furnished lodgings.

I have again to record the great assistance received from the Parish Council who are ready at all times to admit into their hospital those of the aged and infirm poor who are no longer able to look after themselves or their Homes. Immediately after the removal of such cases to hospital, the houses, bedding and clothing are disinfected by this Department.

Cleansing of Walls and Ceilings of Dwelling Apartments, Lobbies, Staircases, W.C.'s, Wash houses, &c.

During the year, the walls and ceilings of 134 dwelling apartments were distempered or repapered. In the previous year the number was 158.

The walls and ceilings of 1,374 lobbies and staircases, 348 passages or pends, 3,215 water-closets, 1,702 wash-houses, and 31 drying lofts were whitewashed or otherwise cleaned. In the previous year, 2,043 lobbies and staircases, 438 passages or pends, 3,601 water-closets, 1,655 wash-houses, and 31 drying lofts were similarly cleansed.

As in the previous year, it was not found necessary to take proceedings against any proprietor for failure to comply with these requirements.

Want of Cleanliness of W.C.'s, Lobbies, Staircases, Back Courts, and other Parts of Premises used in Common.

During the year, notices were served upon 225 sets of tenants, embracing 1,281 individual tenants, regarding their failure to clean the parts of the premises used in common by them. Legal proceedings were instituted in two cases, and in each case convictions were obtained against one or other of the tenants.

Accumulations of Ashes, Filth, and other Rubbish.

The number of accumulations of ashes, filth, and other rubbish removed was 274, as compared with 281 in the previous year and 287 in 1921.

Letters of warning were sent to 180 householders regarding the throwing of refuse from the windows of dwelling-houses on to back courts or on to ground or out-houses connected with adjoining properties.

Accumulations, of ashes, filth, and other rubbish removed,	274
Accumulations of stagnant water removed,	43
Cesspools cleaned out,	3
Cesspool closed up,	1
Privies provided with pails,	2
Privies repaired or renewed,	4
Accumulations of manure removed,	18
Manure pit provided,	1
Courts paved,	30
Passages paved,	146
Bleachgreens re-surfaced,	12
Courts repaired,	87
Passages repaired,	84
Lanes repaired,	10
Unsuitable apartments disused as sleeping apartments,	6
Overcrowding abated,	41
Enclosed beds opened up,	6
Improved window ventilation for dwelling apartments,	26
Broken sashcords renewed,	126
Broken quadrants renewed or repaired,	34
Sash fasteners repaired or renewed,	16
Windows of dwelling apartments reglazed or repaired,	229
Roof-lights of dwelling apartments reglazed or repaired,	14
Windows or roof-lights of lobbies or staircases reglazed or repaired,	163
Windows or roof-lights of drying lofts reglazed or repaired,	2
Windows or roof-lights of water-closets reglazed,	182
Windows or roof-lights of wash-houses reglazed,	211

Additional ventilation provided for staircases,	59
Additional ventilation provided for water-closets,	9
Additional ventilation provided for wash-houses,	5
Walls of dwelling-houses repaired,	14
Walls of dwelling-houses reharled or repointed,	16
Window rybats repointed,	56
Damp dwelling-houses remedied,	58
Roof coverings of dwelling-houses repaired,	107
Plaster on walls and ceilings of dwelling-houses repaired,	201
Plaster on walls and ceilings of lobbies and staircases repaired,	639
Plaster on walls and ceilings of pends and passages repaired,	44
Plaster on walls and ceilings of water-closets repaired,	282
Plaster on walls and ceiling of bathroom repaired,	1
Plaster on walls and ceiling of drying-loft repaired,	1
Plaster on walls and ceilings of wash-houses repaired,	170
Walls and ceilings of dwelling apartments whitewashed or repapered,	134
Walls and ceilings of lobbies and staircases whitewashed or other-wise cleaned,	1,374
Walls and ceilings of passages whitewashed,	300
Walls and ceilings of private pends limewashed,	48
Walls and ceilings of bathrooms whitewashed, repapered, or other-wise cleaned,	7
Walls and ceilings of water-closets whitewashed,	3,215
Walls and ceilings of privies cleaned,	7
Walls and ceilings of urinals cleaned,	2
Walls and ceilings of wash-houses whitewashed,	1,702
Walls and ceilings of drying lofts whitewashed,	31
Floors of dwelling apartments repaired,	63
Floors of lobbies, landings, and stairsteps repaired,	300
Floor of drying loft repaired,	1

Wash-houses repaired—

Roofs,	93
Walls,	17
Floors,	88
Doors,	43
Tubs,	55
Gantries for tubs repaired or renewed,	8
Brickwork of boilers,	110
Furnaces,	42
Boilers repaired or renewed,	29
Boiler lids repaired or renewed,	20
Flues,	29
Windows,	49

Water-closet apartments repaired—

Roofs,	95
Walls,	47
Floors,	22
Doors,	91
Seats,	155
Windows,	37

Cellars repaired—

Roofs,	128
Walls,	59
Floor,	1
Doors,	80
Locks,	14
Windows,	3

Locks for water-closet apartments provided or repaired,	80
Water-closet apartment opened up,	1
Woodwork around sinks renewed or repaired,	146
Defective chimneys repaired,	45
Grates and fire-places repaired,	60
Doors of dwelling-houses repaired or provided,	83
Door furniture renewed or repaired,	108
Mantel shelves repaired,	8
Woodwork of cupboards repaired,	4
Window blinds repaired or renewed,	3
Stair handrails or balustrades repaired,	54
Linoleum coverings of lobbies, stairsteps, &c., repaired or renewed,	52
Grating over window area repaired,	1
Clothes poles renewed or repaired,	2
Boundary walls repaired,	16
Palings repaired,	83
Lanes cleaned,	3
Back courts and areas cleaned,	69
Passages cleaned,	44
Entrance lobbies, stairsteps, and landings cleaned,	97
Floors, seats, and basins of water-closets cleaned,	195
Floor of bathroom cleaned,	1
Floors of wash-houses cleaned,	22
Floors of drying lofts cleaned,	28
Sinks cleaned,	3
Wash-tub cleaned,	1
Bath cleaned,	1
Floors of dwelling apartments cleaned,	105
Dwelling apartments in which articles of furniture were cleaned,	113
Sets of bed and body clothing cleaned,	116

Nuisances caused by domestic animals abated,	73
Offensive smells in dwelling apartments abated,	47
Houses cleared of bugs,	45
Prevention of smoke—	
(a) Factories, &c.—	
No. of observations made,	613
No. of cases where notices were served or warnings given, . .	35
(b) Steam Wagons—	
No. of observations made,	1,583
No. of cases where warnings were given,	53

INCREASE OF RENT AND MORTGAGE INTEREST (RESTRICTION) ACTS, 1920 AND 1923.

The Rent and Mortgage Interest (Restriction) Act, 1923, which came into operation on 31st July, enacts that the Act shall continue in force until the twenty-fourth day of June, 1925. The procedure regarding the issue of certificates by the Sanitary Authority has been amended, and Section 5 (1) of the 1923 Act provides that "where the tenant of a dwelling-house to which the Principal Act applies, has obtained from the Sanitary Authority a certificate that the house is not in a reasonable state of repair, and has served a copy of the certificate upon the landlord, it shall be a good defence to any claim against the tenant for the payment of any increase of rent permitted under paragraph (c) or paragraph (d) of Sub-section 1 of Section 2 of the Principal Act in respect of any subsequent rental period that the house was not in a reasonable state of repair during that period and in any proceedings against the tenant for the enforcement of such claim, the production of the said certificate shall be sufficient evidence that the house was and continues to be in the condition therein mentioned unless the contrary is proved."

Under Section 13 (1) the County Court may, on the application of a sitting tenant, and if satisfied by the production of a certificate of the Sanitary Authority, order that the rent shall be reduced until the Court is satisfied that the necessary repairs have been executed, and subject to the terms of the order the rent shall be payable at such reduced rate as may be specified therein until the Court is so satisfied.

The Amending Act also provides that the certificate which may be granted by the Sanitary Authority must specify what works (if any) require to be executed in order to put the dwelling-house into a reasonable state of repair.

During the year, only two applications for certificates were received, and, in one case, a certificate was granted. In the remaining case, the necessary work was carried out prior to the application being reported on to the Committee.

In addition to the two formal applications, 33 complaints were received from tenants regarding the condition of their houses, and in lodging the complaints, specific reference was made to the provisions of the above-mentioned Acts.

All these complaints were found to be justified. Notices were accordingly served upon the owners calling upon them to execute the necessary repairs, and, along with the notice was sent a letter pointing out the provisions of the Rent Restrictions Acts. These notices

were complied with without undue delay, and this accounts for the small number of formal applications received.

As stated in a previous report, these Acts have been the means of getting a considerable amount of repairs carried out in properties.

SMOKE ABATEMENT.

A considerable amount of work was done during the year in connection with the prevention of smoke. Practically all the factory chimneys in the City were kept under observation, and altogether 351 observations were made. Of these observations 211 were of an hour's duration, and in the remaining cases the period ranged from fifteen to fifty-five minutes. In 16 cases "Intimations of Nuisance" under the Public Health (Scotland) Act, 1897, were served upon the proprietors, and in 19 cases where "Intimations" had previously been served, letters were sent pointing out that the amount of smoke being discharged from the chimneys was still excessive.

During the year 1922, "Johnson's Patent Smoke Consumer" had been fitted to two ranges of boilers, and during the past year, this apparatus has been fitted to five ranges of boilers. Within recent years this "Consumer" has been fitted to a large number of boilers in various parts of the country, and appears to have given general satisfaction. Our experience in Aberdeen has been that if the apparatus is properly used the amount of smoke emitted is reduced to a minimum.

In several of the other factories dealt with, alterations have been made in the furnace bars with the result that an improvement has been effected. In other cases considerable attention has been devoted by members of firms and their staffs to the methods of firing and the nature of fuel. In order to assist in this, 262 observations each of five minutes' duration—were made, and the results communicated to the firms concerned. There is no doubt that careful methods tend to reduce the emission of smoke, as does also the quality of the coal used. The difficulty about the latter, however, is that even although the coal is obtained from the same merchant, the quality varies so much from time to time that, unless some means of consuming the smoke is adopted, it is impossible to prevent the excessive emission of smoke.

During the year, the Electricity Department coupled up five new consumers whose plant has been changed over from steam driving. I am informed by the Electrical Engineer that these consumers would have burned approximately 3,000 tons of coal in the course of a year, whereas the coal burned at the electricity works to supply them would be at least 25 per cent. less, and it would be burned under better conditions for smokelessness.

The Electricity Department has assisted smoke prevention on the domestic side by encouraging the use of electric heaters and cookers. Altogether there are now on hire 4,250 of these articles, of which 2,050 are electric fires. The units sold last year for heating and cooking represent, probably, 4,000 tons of coal burned in ordinary house grates.

Steam wagons travelling within the City are frequently the cause of excessive emissions of smoke. The number of such wagons kept under observation during the year was 1,583, and in 53 cases it was necessary to communicate with the owners of the wagons pointing out to them that the amount of smoke was excessive, and that it was essential that steps should be taken to have the amount of smoke reduced to reasonable limits. In the majority of cases considerable improvement has been effected, and, so far, it has not been found necessary to institute legal proceedings against offenders. It ought, however, to be clearly understood by the drivers of all steam wagons that, if the offence recurs, legal proceedings will require to be instituted.

The railway stations were visited from time to time and the Managers of the Companies concerned communicated with regarding excessive emissions of smoke from certain engines. The Managers issued instructions to all their drivers, and it is hoped that the improvement effected thereby will be permanent.

OFFENSIVE TRADES.

Slaughter-houses.

At the end of 1923, there were five slaughter-houses in the City, containing 33 slaughter-booths, being the same numbers as in the preceding year.

The premises are kept in good repair and in a cleanly condition.

It was not found necessary to institute legal proceedings against any person for a contravention of the Bye-laws.

Other Offensive Trades.

At the end of the year there were 26 firms in the City who carry on one or more of the businesses set forth in the Public Health Act as coming within the definition of offensive trades.

The following is a list of the offensive businesses carried on :—

Bone Boilers	6	Fish Meal Manufacturer	1
Tallow Melters	13	Tripe Boilers	3
Skinner or Hide Factors	5	Gut or Tripe Cleaners	4
Knackers	2	Blood Boilers	3
Tanner	1	Soap Boiler	1
Fish Oil Manufacturers	3	Manufacturer of Albuminoid	
Manure Manufacturers	5	Substances from Fish	1

Total, 48.

During the year, six applications were received for sanction to establish one or other of the offensive businesses enumerated in the Act.

Undernoted are particulars as to these applications :—

- (1) To enlarge the premises in which the business of superphosphate manure manufacturing is carried on.
- (2) To remove the business of tripe cleaning from one part of a slaughter-house to another part of the same premises.

- (3) To establish the business of the manufacture of fish oils (including cod liver oil) in premises to be erected in North Esplanade East. The applicants had for a number of years manufactured cod liver oil in other premises which they proposed to vacate.

These three applications were granted subject to the usual condition that the applicants undertook to cease carrying on the business in the event of its being so conducted as, in the opinion of the Town Council, to cause a nuisance.

- (4) To establish the business of the manufacture of fish meal in premises to be erected at Point Law.
- (5) To establish the business of the manufacture of fish meal in premises to be erected at Crombie Place.
- (6) To establish the business of the manufacture of fish meal in existing premises at Poynerook Road.

None of the three applications relating to the establishment of fish meal factories was granted by the Town Council. One of the applicants has appealed to the Board of Health, and the appeal is at present under the consideration of the Board.

All the premises in which offensive trades are carried on are visited frequently, some of them daily, and the total number of inspections, exclusive of slaughterhouse, was 2475.

As in the previous year, several complaints were received regarding offensive smells from premises situated in the centre of the City, where the businesses of hide factoring, gut cleaning, tallow melting, and bone boiling are carried on. These premises were visited at least once daily throughout the year, and on two occasions the firm was communicated with regarding the nuisance. Following upon an interview with the Medical Officer of Health and myself, the firm undertook to endeavour to secure premises in a more suitable site at the earliest opportunity. Quite recently, the firm obtained the sanction of the Aberdeen District Committee to establish the business on a site remote from dwelling-houses, and it is expected that possession of the new premises will be obtained in the near future.

Complaints were also received regarding smells from a fish guano manufactory, from premises where the manufacture of fish oil is carried on, and from a knackery. On investigation it was found that there were good grounds for these complaints, and the proprietors of the businesses were immediately communicated with. As the result of these communications, there was no further cause for complaint in connection with any of the aforementioned works during the year under review.

The offensive smells from none of these works travelled very far, the distances ranging from 100 to about 1,000 yards. The smells are, however, very disagreeable to those residing or working in the immediate vicinity.

It has again to be recorded that, during the month of July, distinctly offensive smells emanating from the Cove Manure Factory were noticeable in various parts of the City. As this factory is situated at a distance of about four miles from the City, it is obvious that the best practicable means are not being adopted to prevent the escape of offensive effluvia. As there has been a frequent recurrence of these smells during the current year, the matter will be more fully dealt with in a subsequent report.

The fish meal factory in Palmerston Road was visited daily. In addition, several visits were made daily to various places in the immediate vicinity in order to ascertain whether any offensive smell was noticeable.

As stated in a previous report, this factory was started without the consent of the Town Council, and prior to the Offensive Trades Section of the Public Health Act, as applicable in Aberdeen, being amended in 1918 so as to include the manufacture of fish meal. For a number of years after its inauguration, the factory was the subject of frequent and justifiable complaints regarding offensive effluvia emanating from it. As the result of the warnings given that prosecution would follow unless the nuisance was abated, several improvements were made both in connection with the apparatus and in the general conduct of the business, the use of *fresh* offal only being especially insisted upon. The Department continued to urge that only fresh offal should be used, and the number of complaints rapidly diminished. This reduction of nuisance has been especially noticeable since 1919.

On only one occasion during the past three years has evidence been obtained that a smell of fish, attributable to this factory, has been detected at a distance of 300 yards from the factory. On no single occasion has any smell been detected beyond this distance.

PIG-STYES.

At the end of 1923, there were 75 pig-styes on the register, 16 of these having been licensed under the "Additional Bye-laws" made by the Town Council in 1916. To these, 401 visits were made in the course of the year in order to ensure that they were being kept in conformity with the Bye-laws.

Within recent years the use of wooden beds had become very common, with the result that it was found impossible to have the floors of the styes kept properly clean. Letters were accordingly sent to the occupiers of all styes where wooden beds were in use, calling upon them to cease using wooden beds. An exception was, however, made as regards the use of such beds for farrowing sows and for very young pigs.

The undernoted requirements were given effect to:—

Walls and ceilings of pig-styes limewashed,	342
Walls and ceilings of boiling-house limewashed,	27
Additional ventilation provided for pigstyes,	5
Walls of pig-styes repaired,	11
Roofs of pig-styes repaired,	22
Floors of pig-styes repaired,	70
Doors of pig-styes repaired,	4
Floors of boiling-houses repaired,	2
Partition walls repaired,	44
Fence repaired,	1
Boiling-houses repaired,	7
Courtyards repaired,	4
Passages repaired,	3
Manure pits repaired,	4

Feeding troughs repaired or renewed,	200
Wooden beds removed,	99
Floors of pigstyes cleaned,	33
Floors of boiling-houses cleaned,	5
Feeding troughs cleaned,	10
Courtyards cleaned,	22
Passages cleaned,	5
Improved means of drainage provided,	2
Cesspool cover renewed,	1
Cesspools emptied,	18
Accumulations of manure removed,	17
Windows and roof-lights reglazed,	10
Additional bedding provided,	2
Choked drains cleared out,	2
Ditches cleaned,	2

WORKSHOPS (excluding BAKEHOUSES).

The number of workshops (excluding bakehouses) on the register at the end of 1922 was 775. During the year, there were 42 added, 44 closed and 10 converted into factories by the introduction of motive power. The number, therefore, at the end of 1923 was 763.

There were 3,065 visits made to factories, workshops, and outworker's dwelling-houses, and 265 notices were issued with reference to sanitary requirements in connection with these premises. The notices dealt chiefly with the limewashing or cleaning of the walls and ceilings of workshops and w.c. apartments, the cleaning of floors, seats and basins of w.c.'s, the removal of accumulations of rubbish or manure, and the clearing out of choked drains and pipes.

One notice was received under Section 5 of the Factory and Workshops Act, 1901, which provides that the Factory Inspector should give intimation to the Local Authority of any sanitary defect in a factory or workshop remediable under the Public Health Act. The notice dealt with the need of having the premises limewashed.

One notice was also received under Section 9 of the Act and the Sanitary Accommodation Order, 1903. This notice dealt with the want of sufficient w.c. accommodation. The duty of enforcing notices under this Section of the Act rests with the Factory Department, but the Local Authority are notified in order that they may have the opportunity of enforcing, at the same time, any additional conditions under the Public Health Act which they think desirable.

Fourteen notices of Occupation were also received from the Factory Inspector.

As required by Section 107 of the Act, the occupiers of all factories or workshops employing outworkers sent lists of these to the Department twice during the year. Altogether 26 lists were received, embracing 168 outworkers. The homes of all the local outworkers were visited, and the names and addresses of all those resident outwith the City were sent to the officials of the districts in which they reside.

Inspection of Plans.

The plans of 22 premises were, at the request of the Plans Committee, reported on by the Medical Officer of Health and myself, and recommendations made and agreed to.

Ten of these plans were in connection with fishcuring premises. Of the remaining plans, two were confectionery factories, two auction marts, a rag flock factory, a slaughterhouse, a fruit warehouse, a bakehouse, a tea-room, a dairy, a picture house and a milliner's workshop.

The recommendations chiefly referred to the lighting and ventilation of the premises, drainage and the provision of adequate lavatory accommodation, and the size and situation of dung pits.

A plan of proposed new kilns was not approved of on account of the proximity to dwelling-houses.

The accompanying table gives a detailed account of the work done during the year, and in Appendix III is given a list of the workshops as at 31st December 1923.

On register at beginning of year,	775
Added during year,	42
Closed during year,	44
Converted into factories,	10
On register at end of year,	763
Number of visits paid,	3,065
Walls and ceilings of workshops limewashed or otherwise cleaned,	48
Walls and ceilings of water-closets limewashed or otherwise cleaned,	19
Staircase or passage limewashed,	1
Basins of water-closets cleaned,	48
Floors of water-closets cleaned,	34
Seats of water-closets cleaned,	17
Floors of workshops cleaned,	4
Floors of staircases or passages cleaned,	3
Plaster on walls and ceilings of workshops repaired,	6
Plaster on walls and ceilings of water-closets repaired,	2
Seats of water-closets repaired or renewed,	7
Doors of water-closets repaired,	2
Defective water-closets repaired,	4
Sink repaired,	1
Courtyards repaired,	4
Choked drains or pipes cleared out,	19
Additional water-closet accommodation provided,	5
Windows cleaned,	3
Additional privy provided,	1
Sashcords renewed,	3
Additional means of ventilation provided,	2
Means provided for conveying gas fumes into chimneys	5
Floors of workshops repaired,	2

Windows reglazed or repaired,	8
Courtyards cleaned,	13
Accumulations of rubbish removed,	8
Accumulations of manure removed,	11
Accumulations of fish offal removed,	4
Stances provided for fish offal receptacles,	2
Other complaints removed,	26

BAKEHOUSES.

There were at the end of the year 80 bakehouses in the City, 41 of these being classed as factories and 39 as workshops. This is an increase of 3 as compared with the previous year.

In connection with these, 446 visits were paid and 388 notices were issued. These notices, as usual, referred chiefly to the limewashing or cleaning of the walls and ceilings of bakehouses, stores, passages, and w.c.'s; the cleaning of the floors, baking tables, machines, and utensils; and the cleaning of the floors, seats, and basins of water-closets.

Particular attention is paid to the conditions under which such articles as liquid eggs, milk, butter, margarine, &c., are stored, and proper covers are insisted on for all receptacles. Within recent years a number of such fittings as dough troughs, tray racks, fuel receptacles, &c., have been provided with wheels, and this greatly facilitates the cleaning of the bakehouse floors and reduces the labour entailed. When such articles require to be replaced, bakers would find it to their advantage to procure the movable types.

During the year, cloakroom accommodation was provided in three of the bakehouses. There are still, however, bakehouses in the City where such accommodation has not been provided, and the Department would welcome the provision of such accommodation in connection with each bakehouse.

Baths for the use of the male and female employees were provided in one of the bakeries, and it is gratifying to be able to report that the employees are taking full advantage of the facilities provided for them. Baths have been provided in another bakery for a number of years, but for a long time it was disappointing to find that comparatively little use was being made of them. The value of the baths, however, is now being appreciated by the employees.

Undernoted will be found particulars of the work done:—

On register at the beginning of the year,	77
Added during the year,	7
Closed during the year,	4
On register at end of year,	80
Number of visits paid,	446
Bakehouses limewashed,	58
Glazed walls cleaned,	16
Pastry-rooms limewashed,	14

Stores or cellars limewashed,	29
Water-closets limewashed,	27
Passages limewashed,	7
Cloakrooms limewashed,	4
Floors of bakehouses cleaned,	27
Floors of stores cleaned	11
Floors of pastry-rooms cleaned,	5
Stairsteps and passages, &c., cleaned,	5
Floors of water-closets cleaned,	10
Basins of water-closets cleaned,	7
Seats of water-closets cleaned,	7
Windows cleaned,	34
Sinks or wash-hand basins cleaned,	8
Ovens and hot plates cleaned,	19
Baking machines cleaned,	10
Steam presses cleaned,	20
Bakehouse tables cleaned,	20
Dough troughs cleaned,	16
Baking utensils cleaned,	14
Shelves cleaned,	15
Woodwork of doors cleaned,	41
Spittoons cleaned,	8
Additional water-closets provided,	2
Defective water-closet repaired,	1
Roof covering of bakehouse repaired,	1
Floors of bakehouses repaired,	10
Woodwork of doors repaired,	4
Additional ventilation provided for bakehouse,	1
Cords provided for windows and roof-lights,	3
Seats of water-closets repaired,	3
Water-closet doors provided with suitable fastenings,	3
Plaster on walls and ceilings of bakehouses repaired,	12
Plaster on walls and ceilings of flour stores repaired,	3
Windows reglazed,	20
Accumulations of rubbish and manure removed,	7
Cloakroom accommodation provided,	3
Covers provided for food receptacles,	8
Suitable accommodation provided for storing refuse,	1
Nuisance caused by flies abated,	1
Nuisance caused by domestic animals abated,	1

DAIRIES, COWSHEDS, AND MILKSHOPS.

At the end of the year there were 652 persons registered to purvey milk (including ice cream) within the City. This number includes farmers who, although they have not premises within the City, retail milk from carts. The number shows an increase of 18 as compared with the previous year.

The number of cowsheds at the end of the year was 20, being one more than in the previous year.

All the dairies and milkshops are regularly visited by one of the assistant Inspectors. Every effort is made to increase the standard of cleanliness and tidiness in these premises, and thus protect the milk as far as possible from any contamination. I personally visited all the dairies and milkshops in the course of the year and impressed upon the occupiers the powers contained in the Milk and Dairies (Amendment) Act, 1922, whereby a Local Authority may, if they are satisfied that the public health is, or is likely to be, endangered by any act or default of any person who is registered as a retail purveyor of milk, in relation to the quality, storage, or distribution of the milk, remove the retailer of milk from the register. This power is valuable.

The number of visits was 3,195, as compared with 2,488 in the previous year.

The herds in all the byres are regularly examined by Mr. James M'Allan, Veterinary Inspector, who also looks after the sanitary condition of these premises.

Undernoted are particulars of the work done:—

Walls of milkshops cleaned,	114
Ceilings of milkshops cleaned,	73
Walls of back rooms cleaned,	48
Ceilings of back rooms cleaned,	53
Walls of staircases to basement whitewashed,	4
Walls and ceilings of water-closets cleaned,	2
Windows cleaned,	4
Door painted,	1
Shelves, counters, and other fittings cleaned,	41
Sinks cleaned,	6
Gas stoves cleaned,	2
Woodwork of sinks cleaned,	5
Milk vessels cleaned,	44
Stairsteps cleaned,	10
Floors cleaned,	44
Floors, seats, and basins of water-closets cleaned,	2
Doors communicating with common lobbies closed up,	34
General cleanliness improved,	85
Doors provided for potato bins,	2

Floor coverings renewed or repaired,	58
Counter coverings renewed or repaired,	3
Floors repaired,	14
Doors repaired,	4
Plaster repaired,	5
Shelves repaired or provided,	5
Roof coverings repaired,	2
Partitions erected,	2
Milk vessels renewed,	10
Covers for milk vessels renewed or provided,	63
Covers for milk vessels repaired,	5
Warnings given regarding covers not being used,	56
Wash-tub provided,	1
Sinks provided,	2
Additional water supplies provided from main,	2
Woodwork of sink repaired,	4
Means of heating water provided,	1
Windows reglazed,	7
Improved ventilation provided,	54
Sashcords renewed,	1
Improved lighting provided,	2
Offensive smells abated,	6
Manure pits emptied,	4
Accumulations of rubbish removed,	29
Courtyards cleaned,	2
Milk carts cleaned,	3
Other complaints removed,	14

INSPECTION OF SHOPS WHERE FOODSTUFFS ARE SOLD.

(Section 59 of the Aberdeen Police and Waterworks Amendment Act, 1867.)

Under the above Section 1,203 shops were inspected during the year, and in 413 cases notices were served on the occupants regarding the condition of their shops. These notices referred chiefly to the dirty condition of the walls and ceilings of the shops and of the cellars where foodstuffs are stored, and to the dirty condition and want of repair of the floors and fittings.

It is of the utmost importance that all shops where foodstuffs are sold should be kept in a thoroughly clean condition, and the majority of shopkeepers realise that the attractive shop commands a better chance of getting a full share of the public patronage.

The accompanying table gives a detailed account of the work done in this connection :—

Walls and ceilings of shops cleaned,	128
Walls and ceilings of backrooms cleaned,	126
Walls and ceiling of office cleaned,	1
Walls and ceilings of staircases cleaned,	4
Walls and ceilings of cellars cleaned,	77
Walls and ceilings of water-closets cleaned,	36
Floors of shops cleaned,	11
Floor of back room cleaned,	1
Floors of cellars cleaned,	7
Stairsteps cleaned,	1
Floors, seats, and basins of water-closets cleaned,	21
Sinks cleaned,	3
Ice chest cleaned,	1
Fittings cleaned,	17
Windows cleaned,	2
Additional ventilation provided,	4
Plaster on walls and ceilings repaired,	31
Fittings repaired,	3
Floors repaired,	17
Stair steps repaired,	3
Floor coverings repaired or renewed,	82
Wash-hand basins replaced	2
Defective sink repaired,	1
Woodwork around sinks renewed or repaired,	10
Water-closet basin renewed,	1
Water-closet cistern repaired,	1
Water-closet seats repaired,	5
Windows or roof-lights repaired or reglazed,	8
Sashcords renewed,	3
Sash fastener renewed or repaired,	1
Waste and rainwater pipes repaired or renewed,	2
Water tap repaired,	1
Defective grid trap repaired,	1
Defective tubs repaired,	4
Brickwork of boiler repaired,	1
Accumulations of rubbish removed,	33
Offensive smells abated,	1
Other complaints removed,	3

The following table gives particulars as to the shops visited :—

CLASS OF SHOP.	Number Inspected.	Found Satisfactory.	Found Unsatisfactory.	Number of Defects dealt with.
Bakers,	126	73	53	96
Butchers,	131	94	37	63
Confectioners,	36	27	9	17
Fishmongers,	37	26	11	26
Fried Fish Shops,	48	37	11	15
Fruiterers,	85	46	39	72
Greengrocers,	14	12	2	2
Grain Merchants,	5	5	...	...
Grocers,	244	132	112	221
Restaurants,	191	146	45	62
Mixed Shops,	286	192	94	148
TOTALS,	1,203	790	413	722

PLACES OF PUBLIC REFRESHMENT.

The following table shows the various classes of shops on the register at the end of 1923 :—

Description of Shop.	Number
Ice cream,	81
Fried Fish,	17
Restaurants,	95
Bakers,	10
Temperance Hotels,	5
Dairies,	2
Total,	<u>210</u>

This is a decrease of 12 as compared with the previous year.

All these premises were visited from time to time in order to see that the Bye-laws for regulating the internal construction, lighting, and arrangement of the premises, with a view to the orderly conduct and control thereof, are being complied with.

Prosecutions for contraventions of the Bye-laws for regulating the hours of opening and closing are instituted by the Police.

MEAT INSPECTION.

The total quantity of food seized or destroyed during the year was less than in 1922, as, while in that year the total weight was 156 tons, the quantity for 1923 was 132 $\frac{3}{4}$ tons. The Public Health (Meat Inspection) Regulations (Scotland) came into operation on 1st June, and under these Regulations the Town Council appointed the Medical Officer of Health and Veterinary Inspector as "Meat Inspectors" and the Sanitary Inspector and two of his assistants as "Detention Officers."

The total number of visits made by the Sanitary Inspector's staff to the various places where foodstuffs are sold was 8,123. Of these, 2,290 were made to slaughterhouses, 1,702 to meat marts, 708 to fishcuring premises, 336 to Fish Market, 244 to retail shops, 216 to wholesale warehouses, 200 to provision curing works, 244 to New Market Hall, 153 to street markets, 90 to shipping sheds and 1,940 to other premises including all the offal and tallow marts.

The quantity of beef destroyed last year was less than in 1922, being 257,829 lbs., as compared with 280,515 lbs. The quantity of mutton destroyed was also less, being 3,958 lbs., as compared with 5,112 lbs. The amount of pork destroyed was considerably greater, being 7,653 lbs., as compared with 3,293 lbs.; while 837 lbs. of veal were destroyed, as compared with 2,041 lbs. There were also destroyed 9,720 lbs., of tinned foods, 62 lbs. of game and poultry and 18 lbs. of fruit.

The quantity of fish landed during the year was 1,900,025 cwts. as compared with 2,159,762 cwts. in the previous year. The quantity destroyed as unfit for human food was 9,588 lbs., as compared with 29,694 lbs. in the previous year.

There were altogether 1,398 seizures, as compared with 1,328. The majority of the seizures (836) were made in the slaughter-houses, while 337 were made in the meat marts, 123 in warehouses and shops, 79 in offal markets, 11 in the Fish Market, 2 in cold stores and 10 in other premises.

Tinned Foods

Considerable attention continues to be paid to the inspection of tinned foods. All factories where such articles are prepared are regularly visited.

Wholesale warehouses and shops are also visited, and in these, 124 lots of tinned foods, comprising beef, mutton, tongue, fruit, milk and tomato puree, were dealt with as being unfit for human food.

The Public Health (Unsound Food) Regulations (Scotland), 1908.

In no case was it found necessary to take action as prescribed in the Regulations. The bulk of the foodstuffs arriving by sea are consigned to local warehouses, and as already stated, these are regularly visited.

The Public Health (Foreign Meat) Regulations (Scotland) 1908.

No foreign meat, within the meaning of the above Regulations, was received during the year.

Prosecutions.

In no case was it found necessary to institute legal proceedings against any one for having in his possession or having sold or exposed for sale, food which was unfit for human consumption.

A detailed statement of the meat seized during each month of the year, as also a comparative statement with past years, will be found in Appendix II.

Meat Stores.

In accordance with the provisions of Section 10 of the Meat Inspection Regulations, the Local Authority determined that no person other than a person keeping open shop for the sale of meat or meat food products shall, by himself or other person employed by him, sell from any cart or other vehicle, or from any basket, barrow or booth, any meat or meat food products except under and in accordance with an authorisation in writing from the Local Authority. Six applications were received, and after the premises had been put into a proper sanitary condition, the necessary authorisation was granted in each case.

THE SALE OF FOOD AND DRUGS ACTS.

Undernoted are particulars as to the samples procured in accordance with the Acts:—

	NUMBER OF SAMPLES PROCURED.			NUMBER NOT GENUINE.			Number of Prosecutions.	Number Successful.	Amount of Fines Imposed.
	Formal	In-formal.	TOTAL.	Formal	In-formal.	TOTAL.			
Sweet Milk,	463	107	570	22	9	31	9	8	£36 5 0
Skimmed Milk,	48	1	49	0	0	0	0	0	.....
Condensed Milk,	0	5	5	0	0	0	0	0	.....
Cream,	8	0	8	0	0	0	0	0	.....
Cheese,	9	0	9	0	0	0	0	0	.....
Butter,	34	17	51	0	2	2	0	0	.....
Margarine,	16	0	16	0	0	0	0	0	.....
Dripping,	4	0	4	0	0	0	0	0	.....
Lard,	5	0	5	0	0	0	0	0	.....
Tea,	0	1	1	0	0	0	0	0	.....
Coffee,	7	0	7	0	0	0	0	0	.....
Honey,	0	1	1	0	0	0	0	0	.....
Oatmeal,	8	0	8	0	0	0	0	0	.....
Canned Tomatoes,	9	0	9	0	0	0	0	0	.....
Whisky,	14	0	14	3	0	3	3	2	10 10 0
Rum,	7	0	7	2	0	2	1	0	.....
Brandy,	1	0	1	0	0	0	0	0	.....
Gin,	1	0	1	0	0	0	0	0	.....
Red Wine,	1	1	2	0	0	0	0	0	.....
Drugs,	6	22	28	1	2	3	1	1	3 0 0
TOTALS,	641	155	796	28	13	41	14	11	£49 15 0

In addition to the above, 29 unofficial samples of milk were taken at byres.

Sweet Milk.

It will be observed that the total number of official samples of sweet milk procured was 463, and of these, 22, or 4·8 per cent., were found to be under the standard.

The following tables give particulars as to the number of official samples of sweet milk procured in each of the past ten years, with particulars as to the numbers found under the standard:—

TABLE I.,

Giving number of Samples procured and showing the number deficient in Fat; Solids other than Fat; and in both Fat and Other Solids.

YEAR.	Number of Samples.	Number deficient in Fat.	Number deficient in Solids other than Fat.	Number deficient in both Fat and other Solids.	Total Number deficient.	Percentage deficient.	Number of Prosecutions.
1914, . . .	123	21	2	1	24	19·5	21
1915, . . .	207	21	6	5	32	15·6	25
1916, . . .	266	35	4	6	45	17·8	36
1917, . . .	252	36	12	3	51	20·2	37
1918, . . .	240	15	3	1	19	7·9	9
1919 . . .	262	25	3	3	31	11·8	22
1920, . . .	272	10	1	2	13	4·8	6
1921, . . .	431	18	7	2	27	6·3	15
1922, . . .	445	22	3	0	25	5·6	14
1923, . . .	463	15	3	4	22	4·8	9
TOTALS, .	2,961	218	44	27	289	9·8	194

TABLE II.,

Giving number of Samples procured from Producers, as compared with the number procured from Retailers or Wholesalers. In each case, the Samples found deficient at the byre, or in course of delivery to the Retailer or Wholesaler, are excluded.

YEAR.	Number of Samples procured from Producers.	Number deficient.	Percentage deficient.	Number of Samples procured from Retailers or Wholesalers.	Number deficient.	Percentage deficient.
1914, . .	60	13	21·7	63	8	12·7
1915, . .	115	15	13·0	92	12	13·0
1916, . .	122	22	18·0	144	15	10·4
1917, . .	143	32	22·4	109	9	8·3
1918, . .	104	5	4·8	136	9	6·6
1919, . .	143	13	9·1	119	9	7·6
1920, . .	132	4	3·0	140	5	3·6
1921, . .	240	11	4·6	191	9	4·7
1922, . .	222	8	3·6	223	8	3·6
1923, . .	246	9	3·7	217	6	2·8
TOTALS, .	1,527	132	8·6	1,434	90	6·3

TABLE III.,

Giving information as to the sources from which the Samples were procured.

YEAR	RETAIL SAMPLES FROM SHOPS.			RETAIL SAMPLES FROM CARTS.			WHOLESALE SAMPLES IN COURSE OF DELIVERY.			SAMPLES TAKEN ON DELIVERY AT INSTITUTIONS.		
	Samples taken.	Found adulterated.	Per-centage adulterated.	Samples taken.	Found adulterated.	Per-centage adulterated.	Samples taken.	Found adulterated.	Per-centage adulterated.	Samples taken.	Found adulterated.	Per-centage adulterated.
1914, . .	50	8	16.0	35	7	20.0	24	8	33.3	14	1	7.1
1915, . .	82	14	17.1	64	4	6.2	38	11	29.0	23	3	13.0
1916, . .	118	19	16.1	82	9	11.0	47	16	34.0	19	1	5.3
1917, . .	83	11	13.3	54	6	11.1	92	34	37.0	23	0	0.0
1918, . .	123	8	6.5	66	7	10.6	49	4	8.2	2	0	0.0
1919, . .	101	14	13.7	36	2	5.5	123	15	12.2	2	0	0.0
1920, . .	129	6	4.7	32	2	6.3	111	5	4.5	0	0	0.0
1921, . .	166	10	6.0	87	3	3.4	176	14	8.0	2	0	0.0
1922, . .	188	10	5.3	86	5	5.8	169	10	5.9	2	0	0.0
1923, . .	198	6	3.0	86	3	3.5	176	13	7.4	3	0	0.0
TOTALS, .	1,238	106	8.6	628	48	7.6	1,005	130	12.9	90	5	5.5

As it is now ten years since the Department commenced their present practice of "following up" all deficient samples of milk—*i.e.*, in the case of a retailer selling deficient milk, of taking a sample in the course of delivery from the consigner to the consignee; and in the case of a producer, of visiting the byre at the earliest possible date and procuring a sample of the corresponding milk from the cows—the information contained in Tables I., II., and III. is of interest.

It will be seen from Table I. that 2,961 samples were procured, and, of these, 289 were under the standard—218 being deficient in fat, 44 deficient in solids other than fat, and 27 deficient in both fat and other solids. The average percentage of deficient samples is 9.8. The striking decrease in the percentage of deficient samples is noteworthy. During the period 1914-17, the percentage was 17.9, while for the years 1918-23, it was 6.5. During last year the percentage was 4.8, which is exactly the same as in 1920, and is the lowest during the decade.

In Table II. will be found information regarding the number of samples procured from producers as compared with retailers or wholesalers. The number of samples found deficient at the byre or in course of delivery to the retailer or wholesaler is excluded. It will be observed that 132 out of the 222 deficient samples were procured from producers. The average percentage of deficient samples procured from producers was 8·6, while the corresponding percentage from retailers or wholesalers was 6·3. During the period 1914-17, the percentage of deficient samples procured from producers was 18·6, as compared with a percentage of 10·8 for the samples procured from retailers or wholesalers. For the years 1918-23, the corresponding percentages were, respectively, 4·6 and 4·5. During last year the percentage of producers' samples found deficient was 3·7, as compared with a percentage of 2·8 for the samples procured from retailers or wholesalers.

It is worthy of mention that, during the decade, 184 samples were procured at byres, and, of these, 36, or 19·6 per cent., were found to be under the standard in either fat or solids other than fat. In the large majority of cases, the samples consisted of the mixed milk of the whole herd, but in a few cases the sample consisted of the mixed milk of the cows which were stated to have yielded the quantity of milk from which the complained of sample was taken. As stated in a previous report, I have only been at one byre at which deficient milk was obtained on more than one occasion. In the case referred to, it was twice found that the mixed "morning" milk of the whole herd (10 cows) was under the standard for fat. The last occasion was five years ago. Since that date four samples have been procured from this producer, and the amount of fat contained in each of the samples was 3·36, 3·71, 4·41, and 3·15, respectively.

In Table III. will be found information regarding the different sources from which the samples were procured.

It will be seen that for the past ten years the largest percentage (12·9) of deficient samples related to consignments sampled in course of delivery. In only a few cases were these consignments supplied by wholesale dairymen—the large majority being supplied by producers. The average percentage of deficient samples purchased in retail shops was 8·6, and from retail carts 7·6.

During the past year the largest percentage (7·4) of deficient samples was also found amongst those procured in course of delivery. The percentage of deficient samples purchased in retail shops was 3·0, and from retail carts, 3·5. Two of the retail carts belonged to producers.

So far as experience in Aberdeen indicates, it is apparent that, generally speaking, the person who deliberately tampers with milk is the producer. It will be seen from Table III. that, during the years 1914 to 1917, 201 samples were procured in course of delivery, and, of these, 69, or 34·3 per cent., were found to be under the standard. During the period 1918 to 1923, the number of such samples

was 804, and, of these, 61, or 7·6 per cent., were found to be deficient. It is gratifying to be able to report that the percentage of deficient samples procured in course of delivery has been so greatly reduced in recent years, because it is obvious that if the producer supplies the retailer or wholesaler with deficient milk the consumer is bound to receive milk which is under the standard. It is the practice of the Department to procure as many, if not more, samples from producers as from retailers and wholesalers. In this way only can the public be adequately protected.

As proof of the necessity of protecting also the retailer or wholesaler, it ought to be stated that during the decade the number of deficient samples procured from retailers or wholesalers was 128, and in 38 cases it was subsequently found that the milk as supplied by the producer was under the standard.

No proceedings were, of course, instituted in any of these 38 cases, nor in the 36 cases where deficient samples were obtained as the result of the "appeal to the cow." It will accordingly be seen that unless the Department had taken steps to satisfy themselves that the milk in these cases had not been tampered with, prosecutions would have been instituted against a large number of innocent persons.

Undernoted are particulars regarding all the deficient samples of sweet milk which were officially procured during the year 1923:—

A. Retailers' Samples.

No.	Complained of Sample.		Sample taken on delivery.		Remarks.
	Fat.	Other Solids.	Fat.	Other Solids.	
1	2·82	8·77	2·97	8·79	No proceedings taken.
2	2·82	9·09	{ 3·32 3·48 }	{ 8·87 9·21 }	Penalty £1.
3	2·92	8·46	{ 3·30 3·50 }	{ 8·66 8·91 }	Letter of warning sent.
4	8·59	8·09	4·02	8·70	Do.
5	2·92	8·66	2·94	8·49	No proceedings taken.
6	2·51	8·84	{ 3·58 3·23 }	{ 8·72 8·76 }	Penalty 25s.
7	2·97	8·91	{ 3·41 3·12 }	{ 8·83 9·09 }	Letter of warning sent.
8	2·91	9·13	3·95	8·93	Do.

It will be observed that in two cases the consignments in course of delivery to the retailer were found to be under the standard.

In all the other cases I was of opinion that the deficiency was due to failure to mix the milk properly, and was not caused by wilful tampering. Despite the warnings that are continually being given to milk sellers regarding the necessity of their taking steps to prevent the cream settling on the top, it is astonishing to find that many milk sellers do not appreciate the risk they run if this precaution is neglected. In Aberdeen, the majority of the covers fitted to retail receptacles are provided with plungers, with the result that every time the cover is opened and closed the milk is mixed to a certain extent. I find, however, that the greatest danger exists in the failure of the retailer to mix the milk before it is poured from the can in which it is delivered into the retail receptacle. Frequently, milk is consigned in 10-gallon cans, and, as the retail vessel does not usually contain more than three or four gallons, it stands to reason that if the cream rises to the top in the wholesale vessel, as it is bound to do if the milk has been deposited therein for some time, and the milk is not thoroughly plunged or mixed before being poured into the retail vessel, the first filling of the retail vessel will contain the larger portion of the fat.

Sample No. 4, which contained 8.59 per cent. fat and 8.09 per cent. solids other than fat, was taken by the seller from the top of a 5-gallon drum—the retail vessel being empty at the time of the purchase. The seller was warned that it was her duty to see that all milk was properly mixed before being retailed.

Sample No. 8, which contained 2.91 per cent. fat and 9.13 per cent. solids other than fat, was stated to be part of a consignment of 12 gallons, which on being sampled was found to contain 3.95 per cent. fat and 8.93 per cent. solids other than fat. The consignment was said to consist of "morning" and "evening" milk, but these milks were not separately labelled, and there was no arrangement between consigner and consignee to this effect, so there was no alternative but to take the sample from the total consignment. It was quite possible, however, that the milk in one of the cans might have been under the standard. Arrangements have been made by the retailer that in future the "morning" and "evening" milk will be separately labelled. Seven samples have been purchased since 1916, and all of these were found genuine. It was, under the circumstances, considered sufficient to send a letter of warning.

In deciding not to prosecute in this and other cases, the following recommendation of the Inter-Departmental Committee was borne in mind, viz.:—"The first time that an official sample is found below the minimum limit, there should

"be a warning, unless the Local Authority are satisfied that it is a case of "adulteration."

B. Producers' Samples.

No.	Complained of Sample.		Sample taken on delivery.		Remarks.
	Fat.	Other Solids.	Fat.	Other Solids.	
9	2.06	9.13	3.70	9.17	Penalty £5.
10	2.63	8.73	Morning 2.70	8.73	The complained of sample was "morning" milk. No proceedings taken.
			Mid-day 3.20	8.84	
			Evening 3.76	8.95	
11	2.77	9.12	3.50	9.02	Penalty £5.
12	2.85	8.79	3.75	8.98	Penalty £4.
13	2.62	8.99	Byre not visited. Sample was procured from same producer as Sample No. 10, and within a month of the date of that sample.		
14	2.97	8.79	2.99	8.81	No proceedings taken.
15	2.94	8.49	3.64	8.60	No proceedings taken.
16	2.47	6.21	3.83	8.44	Obtained from same producer. Penalty £15.
17	3.31	7.25	4.19	8.24	
18	2.99	8.47	3.74	8.75	Charge found "Not Proven."
19	3.41	8.30	Morning 3.52	8.72	Penalty £5.
			Evening 4.09	8.74	
20	2.80	8.92	Morning 2.92	8.99	The complained of sample was "morning" milk. No proceedings taken.
			Mid-day 3.75	8.99	
			Evening 3.50	8.92	
21	2.88	8.83	2.80	8.38	No proceedings taken.
22	2.93	8.86	3.32	9.01	Letter of warning sent.

It will be observed that in connection with Nos. 10, 14, 20, and 21, a mixed sample of the "morning" milk of the whole herd was deficient in fat, and that in the case of No. 21 there was also a deficiency in solids other than fat. The number of cows in each of the herds was, respectively, 7, 9, 18, and 12. The milking hours were as follows:—

No. 10—6 a.m., 12 noon, and 6 p.m.

No. 14—6 a.m., 12 noon, and 6 p.m.

No. 20—6 a.m., 12 noon, and 7.30 p.m.

No. 21—6 a.m., 12 noon, and 6 p.m.

In every case the interval between the "evening" and "morning" milkings has been shortened. Samples of the "morning" milk were procured shortly after

the intervals were shortened, and the amount of fat contained in the samples was 3.20, 3.05, 3.10, and 3.45 per cent. respectively. The amount of solids other than fat in the last-mentioned sample was 8.91 per cent.

It will further be observed that, in connection with Nos. 16 and 17, both the "morning" and "evening" milk at the byre was found to be under the standard for solids other than fat, although in each case the fat was considerably above the standard. Further particulars of this case are given on pp. 45 and 46.

With reference to Nos. 15 and 22, it will be noted that legal proceedings were not instituted, although the milk at the byre was in each case considerably above the standard. The circumstances were as follows:—

In the case of No. 15, a consignment of $17\frac{1}{2}$ gallons "evening" milk sampled in course of delivery contained 3.90 per cent. fat and 8.50 per cent. solids other than fat; while a consignment of $15\frac{1}{2}$ gallons "morning" milk contained 2.94 per cent. fat and 8.49 per cent. solids other than fat. A mixed sample of the "morning" milk of the whole herd (16 cows) contained 3.64 per cent. fat and 8.60 per cent. solids other than fat.

When the samples were procured in the City, it was observed that the lids of two of the cans had been so much damaged that they did not fit the cans properly. When the farmer was informed that the "morning" milk was under standard, he stated that, although he had recently purchased four new cans for conveying his milk, the consignee was not in the habit of returning to each of his suppliers the proper cans. The farmer thereupon pointed out to me two cans which had been sent to him on the previous evening. The lids of each of these cans did not fit properly, with the result that it was possible that milk could have been spilled during transit between the farm and the railway station, and during the process of putting the cans on to the train. The case was fully considered by the Procurator-Fiscal and myself, and we were of opinion that it would be sufficient to send the farmer a letter warning him that it was his duty to take whatever steps might be necessary to ensure that the milk supplied by him complied with the requirements of the Sale of Milk Regulations.

In the case of No. 22, a consignment of 3 gallons "morning" milk sampled in course of delivery contained 4.04 per cent. fat and 8.86 per cent. solids other than fat; while a consignment of 2 gallons "evening" milk contained 2.93 per cent. fat and 8.86 per cent. solids other than fat. The byre was visited in the evening. The herd consists of 4 cows. We were informed that the 2 gallons of milk complained of were yielded by 3 of the cows. It was, therefore, arranged that a sample should be taken of the milk of these cows, but it was found that on the occasion of our visit the quantity yielded by the 3 cows was short of 2 gallons by $1\frac{1}{2}$ pints. This quantity—taken from the milk of the remaining cow—was, therefore, added to the milk of the 3 cows before the sample was taken. The composite sample was certified to contain 3.32 per cent. fat and 9.01 per cent. solids other than fat; while the milk of the remaining cow contained 4.61 per cent. fat and 10.21 per cent. solids other than fat. It had been the practice of the farmer to retain the milk of

this cow for domestic use, but it was arranged that in future this cow's milk should be sent to the City.

The results of further investigation into the production and distribution of the milk supplied providing such deficiencies are of sufficient interest to be recorded. The particulars are as follows:—

Producer's Sample No. 9.—About 6.30 a.m. on 19th January a sample of milk was purchased from a farmer's retail cart and certified to contain 2.06 per cent. fat and 9.13 per cent. solids other than fat. At the time of the purchase the farmer stated that the milk was "evening" milk.

The byre was visited on the following evening, when the farmer informed me that he was of opinion that the poor quality of the complained of sample was due to the fact that, owing to the 6-gallon drum from which the sample was supplied being filled to the top, the movement of the cart had not been sufficient to keep the milk mixed, so that, as the sample referred to was the first quantity of milk supplied from this drum, these facts would, in his opinion, account for the poor quality of the milk.

The farmer was reminded that some months previously I had sent a letter to him and other dairymen retailing milk from carts, warning them of the change which might take place in milk during transit if means were not taken to prevent the fat settling on the top.

I procured a mixed sample of the "evening" milk of the 9 cows which yielded the 6 gallons from which the complained of sample was taken, and this sample was certified to contain 3.70 per cent. fat and 9.17 per cent. solids other than fat.

On the farmer's suggestion I agreed to re-visit the byre on the following morning and procure a sample of the milk immediately after the retail drum was filled, and to accompany the cart to the point where the complained of sample was purchased and procure a corresponding sample. Before leaving the byre the 6 gallons of milk which had just been sampled were put into five shallow basins in the milkhouse.

The byre was re-visited about 5 a.m. on the following morning. About 5.15 a.m. the contents of the five basins referred to were poured into the 6-gallon drum, which was thereby completely filled. The milk was not mixed in any way, beyond any mixing which would have taken place as the result of the milk being poured into the drum. Immediately after the drum was filled, a sample was drawn from the tap of the drum and this sample was certified to contain 3.74 per cent. fat and 9.34 per cent. solids other than fat.

Shortly before 6 a.m. the cart left the farm and reached the point where the complained of sample was purchased about 6.40 a.m. From the time the sample was taken at 5.15 a.m. until the cart reached this point, the drum was never out of the sight of either my assistant or myself. Whenever the cart stopped at the point the complained of sample had been purchased a sample corresponding to the complained of sample was taken. This sample was certified to contain 2.43 per cent. fat and 9.20 per cent. solids other than fat. The complained of sample, it

will be recollected, contained 2·06 per cent. fat and 9·13 per cent. solids other than fat.

It will be observed that the sample taken at the milkhouse immediately before the cart left for the City, was almost exactly the same as the sample taken on the previous evening, thus proving that the milk had not been tampered with overnight. Despite the fact that we were satisfied that the unofficial test sample procured at the point of purchase of the complained of sample had not been tampered with and yet was under the standard, the Procurator-Fiscal and myself, in view of a recent High Court decision, and particularly in view of the fact that the farmer had received a warning regarding the necessity of mixing or plunging his milk, decided that a prosecution should be instituted.

The farmer pled guilty and was fined £5.

On 28th March, another sample was purchased from this cart and was found to contain 3·45 per cent. fat and 8·97 per cent. solids other than fat.

Producer's Sample No. 10.—On the morning of 26th January I procured at the Joint Station samples from two consignments then in course of delivery to a dairyman.

A sample from a consignment of 8 gallons "hot" or "morning" milk was found to contain 2·63 per cent. fat and 8·73 per cent. solids other than fat; while a sample from a consignment of "cold" milk, which consisted partly of "mid-day" and partly of "evening" milk, contained 3·43 per cent. fat and 8·90 per cent. solids other than fat.

The byre was visited on the following day and samples procured from each of the milkings. The herd consisted of 7 cows. Undernoted are the results of the analyses:—

	Fat.	Other Solids.
"Morning" milk (about 10 gallons), . . .	2·70	8·73
"Mid-day" milk (about 5 gallons), . . .	3·20	8·84
"Evening" milk (about 5 gallons), . . .	3·78	8·95

The cows were milked three times a day, viz., 6 a.m., 12 noon, and 6 p.m.

As the samples procured at the byre approximated in quality the samples obtained in the City, no proceedings were taken against the producer, but he was informed that it was very desirable in his own interests that he should take whatever steps might be necessary to ensure that the "morning" milk complied with the requirements of the Sale of Milk Regulations.

On 28th February two further samples were procured at the Joint Station. A consignment of 7 gallons "hot" milk contained 2·62 per cent. fat and 8·99 per cent. solids other than fat; while a consignment of 8 gallons "cold" milk contained 3·55 per cent. fat and 9·03 per cent. solids other than fat.

It was not considered necessary to re-visit the byre, but the farmer was interviewed, and it was arranged that he would, on 14th March, commence to milk his cows only twice a day, viz., 6 a.m. and 6 p.m. Before doing so, the farmer sent me a sample of the "morning" milk of each of his cows, and these samples were tested

for fat by means of the "Gerber" in the Public Health Laboratory with the undernoted results:—

	Fat.
Cow No. 1,	3.3
Cow No. 2,	2.3
Cow No. 3,	4.3
Cow No. 4,	2.4
Cow No. 5,	2.9
Cow No. 6,	3.3
Cow No. 7,	3.2

No information was obtained as to the quantity of milk yielded by each cow.

On 30th March samples of the "hot" and "cold" milks were procured. The "hot" milk contained 3 per cent. fat, while the "cold" milk contained 4 per cent. fat.

On 27th September a consignment of 9 gallons "morning" milk was found to contain 3.20 per cent. fat and 8.92 per cent. solids other than fat; while the consignment of 7 gallons "evening" milk contained 4.40 per cent. fat and 9.17 per cent. solids other than fat.

Producer's Sample No. 14.—A few days prior to visiting the byre in question, a sample of milk, purchased in a retail dairy shop, was found to contain 2.82 per cent. fat and 8.77 per cent. solids other than fat. This sample was stated to be "morning" milk.

On the following day, two samples were taken in course of delivery. A consignment of 10 gallons "hot" or "morning" milk contained 2.97 per cent. fat and 8.79 per cent. solids other than fat; while a consignment of 10 gallons "cold" milk, consisting of a mixture of the "mid-day" and "evening" milk, contained 3.98 per cent. fat and 8.98 per cent. solids other than fat.

A mixed sample of the "morning" milk of the whole herd (9 cows) contained 2.99 per cent. fat and 8.81 per cent. solids other than fat. The cows were milked three times daily, viz., 6 a.m., 12 noon, and 6 p.m.

As the milk at the byre was found to be under the standard, and to approximate in quality the sample procured in course of delivery, no proceedings were taken against the farmer, but it was suggested that the intervals between the milkings should be altered. This was done on the day following the visit to the byre, the times of milking being changed to 5.30 a.m., 12.30 p.m., and 7.30 p.m.

A consignment of 10 gallons "hot" milk sampled some time later contained 3.05 per cent. fat and 8.99 per cent. solids other than fat; while the consignment of 10 gallons "cold" milk contained 3.80 per cent. fat and 8.59 per cent. solids other than fat.

Producer's Samples Nos. 16 and 17.—On the day preceding the visit to the byre, samples were procured from two consignments in course of delivery. A consignment of 10 gallons "morning" milk contained 2.47 per cent. fat and 6.21 per cent. solids other than fat; while a consignment of 9 gallons "evening" milk contained 3.31 per cent. fat and 7.25 per cent. solids other than fat.

Three days prior to the complained of samples being procured, the consignee called at the Public Health Office and left a bottle which he stated contained a fair sample of a consignment which he had received on the previous day (Sunday) from one of his suppliers. This sample contained 3.08 per cent. fat and 6.87 per cent. solids other than fat. The consignee stated that on each week day he received from this producer, per rail, two 10-gallon consignments—one consisting of "morning" and the other of "evening" milk. On Sundays, however, only one consignment was received, and this milk was collected for him by another City dairyman.

As it was desirable to ascertain whether the supply of deficient milk was confined to Sundays, arrangements were made with the consignee that he should send me, on two consecutive days, samples from each of the consignments. This was done with the undernoted results:—

	Fat.	Other Solids.
"Morning" milk, . . .	2.58	6.12
"Evening" milk, . . .	2.64	6.49
"Morning" milk, . . .	2.81	6.25
"Evening" milk, . . .	2.77	6.80

The byre was first visited in the evening, when a mixed sample of the milk of the whole herd (10 cows) was found to contain 4.19 per cent. fat and 8.24 per cent. solids other than fat. A sample was at the same time taken from a consignment of 10 gallons "morning" milk which was deposited in a can awaiting transit to the City. This sample contained 2.17 per cent. fat and 5.72 per cent. solids other than fat.

The byre was re-visited on the following morning, when a mixed sample of the whole herd was found to contain 3.83 per cent. fat and 8.44 per cent. solids other than fat.

The accused, who pled guilty and was fined £15—being £7 10s. for each offence—has now given up dairying.

Producer's Sample No. 18.—On 14th November a complaint was received from a City dairyman to the effect that as the results of analyses which he had obtained he had reason to believe that the consignments of "morning" and "evening" milk supplied to him by a certain farmer were under the standard for solids other than fat, although above the standard for fat.

Accordingly, on 16th November, samples were procured of both the "morning" and "evening" milk. A consignment of 10 gallons "morning" milk was found to contain 2.99 per cent. fat and 8.47 per cent. solids other than fat; while a consignment of 10 gallons "evening" milk contained 3.54 per cent. fat and 8.59 per cent. solids other than fat.

It was not found possible to visit the byre until the morning of 20th November. On arrival the farmer was asked if he could point out the cows which had yielded the 10 gallons of milk complained of, and was informed that if he could do so a sample of the milk of these cows would also be taken. The farmer stated that he knew the 10 cows which had yielded the milk referred to, but further stated that

on the 18th November one of these cows had aborted and its milk was, therefore, not available.

A mixed sample of the milk of the 9 cows contained 3.84 per cent. fat and 8.74 per cent. solids other than fat; while a mixed sample of the milk of the whole herd (18 cows) contained 3.74 per cent. fat and 8.75 per cent. solids other than fat.

As the sample of "evening" milk procured in the City was beyond suspicion, it was not necessary to re-visit the byre in the evening.

I arranged, however, that on the day following my visit to the byre samples should be taken from all the consignments supplied by this farmer to his various customers.

Undernoted are particulars as to these samples:—

	Fat.	Solids not Fat.
Mixed sample of 10 gallons "evening" milk, .	3.15	8.81
Mixed sample of 10 gallons "morning" milk, .	3.75	8.66
Mixed sample of 5 gallons "evening" milk, .	3.00	8.81
Mixed sample of 15 gallons "evening" milk, .	3.16	8.78
Mixed sample of 10 gallons "morning" milk, .	3.76	9.01

It will be observed that all these samples are high in solids other than fat. This was also found to be the case in the two samples procured at the byre.

It will further be observed that the amount of fat contained in the samples of "morning" milk approximated the amount of fat contained in the byre samples. It will also be observed, however, that the amount of fat contained in each of the three samples of "evening" milk was considerably lower than in any of the samples of "morning" milk procured at the same time, and also considerably lower than the sample of "morning" milk procured at the byre. This is exceptional, when one takes into account that the intervals between the two milkings, viz., 4.30 a.m. and 4.30 p.m., are equal.

After the summons was served on the accused, his Agent called on the Procurator-Fiscal and myself and stated that on 24th November, *i.e.*, 8 days after the complained of sample was procured, the farmer sent a sample of the aborted cow's milk to a dairyman, who tested the sample for fat. The sample was reported to contain 0.8 per cent. fat. Samples of this cow's milk tested by the dairyman on 28th November and 1st December were stated to contain 2.0 and 3.9 per cent. fat, respectively.

The defence, therefore, contended that on the day the complained of sample was procured, the milk of the cow referred to would not have contained more than 0.8 per cent. fat, and as the quantity of milk yielded by this cow on the day in question was $1\frac{1}{2}$ gallons, this was sufficient to account for the 10-gallon consignment not containing more than 2.99 per cent. fat.

Evidence was led for the prosecution to the effect that even although it were admitted that one and a half gallons of the consignment contained no fat at all, yet if it were taken that the remaining $8\frac{1}{2}$ gallons contained the amount of fat—viz., 3.74—yielded by the whole herd, the complained of sample would have been

appreciably above the standard. The Veterinary Inspector gave evidence to the effect that if the aborted cow yielded, as was stated by the defence, $1\frac{1}{2}$ gallons on the morning the complained of sample was procured, this, in his opinion, was conclusive evidence that the health of the animal, and consequently the milk, would not have been affected by the abortion which took place two days later.

The Sheriff found the charge "Not proven."

As part of my evidence I gave information regarding the samples procured at the byre and also regarding the five official samples procured on the day after the byre visit. No exception was, at the time, taken to this evidence by the Agent for the Respondent. We have never been in the habit of citing the Public Analyst as a witness, and he did not give evidence on this occasion. When the Procurator-Fiscal proceeded to put some questions to the Respondent regarding these aforementioned samples, his Agent objected, on the ground that Section 21 of the principal Act, which provides that the Analyst's certificate will be conclusive if not challenged previous to the trial, only applies to the complained of sample. On the suggestion of the Procurator-Fiscal, the Sheriff recalled me, and I produced the Analyst's certificates regarding all the samples referred to.

The Agent, however, contended that this did not meet his objection, and he asked that his objection be noted. This objection has never previously been taken in Aberdeen, and we do not know whether it weighed with the Sheriff, but in future milk cases, it has been decided to call the Public Analyst to give evidence regarding samples submitted to him for analysis, which may have any bearing on the case.

Producer's Sample No. 20.—On 27th November, samples were procured from consignments of "morning," "mid-day," and "evening" milk then in course of delivery by the same farmer.

The consignment of 15 gallons "morning" milk contained 2.80 per cent. fat and 8.92 per cent. solids other than fat; while a mixed sample of the "morning" milk of the whole herd (18 cows) contained 2.92 per cent. fat and 8.99 per cent. solids other than fat.

When at the byre the farmer stated that he was of opinion that the poor quality of the "morning" milk was due to the fact that at that time five of his cows were "running," and requested that a sample should be taken of the milk of these cows. This was done and the sample was certified to contain 3.65 per cent. fat and 8.84 per cent. solids other than fat. The milk of these five cows was, of course, included in the sample taken of the milk of the whole herd.

I find that the opinion is general on the part of some farmers that when cows are "running" their milk is bound to be deficient in fat. I have on several occasions taken samples of milk of cows in this condition, but have not found a single sample deficient in fat.

The consignment of 10 gallons "mid-day" milk contained 3.46 per cent. fat and 9.07 per cent. solids other than fat; while a mixed sample of the milk of the eleven cows milked at mid-day contained 3.75 per cent. fat and 8.99 per cent. solids other than fat.

The consignment of 15 gallons "evening" milk contained 3·34 per cent. fat and 9·00 per cent. solids other than fat; while the mixed sample of the evening milk procured at the byre contained 3·50 per cent. fat and 8·92 per cent. solids other than fat.

The hours of milking were 6 a.m., 12 noon, and 7·30 p.m.

Since the complained of sample was procured the interval between the "evening" and "morning" milkings has been shortened. About a week after this was done, the farmer handed me a sample which he stated was a mixed sample of the "morning" milk of the whole herd. This sample contained 3·10 per cent. fat and 9·15 per cent. solids other than fat.

It ought to be mentioned that since this farmer commenced sending milk to the City in 1919, 8 samples had previously been procured and all were found to be genuine.

Producer's Sample No. 21.—On 14th December, a sample from a consignment of 2 gallons "morning" milk was certified to contain 2·88 per cent. fat and 8·83 per cent. solids other than fat; while a sample from a consignment of 9 gallons "evening" milk contained 3·48 per cent. fat and 9·16 per cent. solids other than fat.

The byre was visited in the morning, and a sample procured of the mixed milk of the herd (12 cows) and this sample contained 2·80 per cent. fat and 8·38 per cent. solids other than fat.

At the request of the farmer, samples were taken from each of two pairs of cows which he thought might have yielded the two gallons of milk referred to. One of these samples contained 3·40 per cent. fat and 8·62 per cent. solids other than fat; while the other sample contained 3·30 per cent. fat and 8·55 per cent. solids other than fat.

Fifteen samples have been procured from this farmer in past years and all have been found to be genuine.

In view of the fact that one of the points to which the special attention of the Inter-Departmental Committee appointed by the Scottish Board of Health was directed was the "presumptive or legal standard" for milk, it is of interest to observe that the average quantities of fat and solids other than fat in all the samples analysed was as follows:—

Year.	No. of Samples.	Fat.	Solids not Fat.
1919	262	3·38	8·95
1920,	272	3·48	8·96
1921,	429	3·50	8·89
1922,	445	3·53	8·91
1923,	462	3·58	8·88

No similar information is available for the earlier years.

In calculating the averages for the year 1921, no account has been taken of two abnormal samples which contained, respectively, 17·24 per cent. fat and 7·76 per cent. solids other than fat, and 8·23 per cent. fat and 8·69 per cent. solids other than fat. Similarly in calculating the averages for the past year, no account has been

taken of a sample which contained 8·59 per cent. fat and 8·09 per cent. solids other than fat.

It will be observed that the percentage of fat is steadily increasing.

Unofficial Samples of Sweet Milk.

In August, Mr. A. B. Weir was appointed full-time Public Analyst for the City. Prior to that time 259 unofficial samples were procured and examined for fat in the Public Health Laboratory. Of these samples, 205 were taken on delivery at City dairies from consignments which were collected by the dairymen outside the City. None of these consignments was definitely under the standard. The remaining 54 samples were mainly taken from suspicious supplies which are kept under close observation.

Since the date of Mr. Weir's appointment, all informal samples have been analysed by him. The number so analysed was 107, of which 9 were found to be under the standard. Five of these samples were procured in connection with the case referred to on p. 46, while the remaining four were taken from consignments which had been taken delivery of outside the City. Two of these samples were from the same farmer, and this case was reported to the County Authorities, who procured samples on two occasions. On each occasion the milk was certified to be above the standard, although there is a suspicion that this milk is being "toned down" from time to time.

I have to record my indebtedness to the County Authorities of Aberdeen and Kincardine for their willingness at all times to procure samples from consignments taken delivery of within their districts, which consignments have been found on their arrival within the City to be under the standard.

Skimmed Milk.

Forty-eight official samples of skimmed milk were procured in the course of the year, and all were found genuine.

The following table gives particulars as to the number of samples of skimmed milk taken since 1914:—

Year.	No. of Samples.	No. under Standard.	Percentage under Standard.
1914,	7	0	0·0
1915,	25	0	0·0
1916,	58	11	19·0
1917,	50	2	4·0
1918,	18	1	5·6
1919,	17	2	11·8
1920,	24	1	4·2
1921,	34	0	0·0
1922,	40	0	0·0
1923,	48	0	0·0
Totals,	321	17	5·3

It will be observed that since 1st January, 1921, 122 samples have been procured, and all of these have been certified to be genuine.

The average percentages of fat and solids other than fat contained in the samples of skimmed milk procured during the last five years was as under:—

Year.	No. of Samples.	Fat.	Solids not Fat.
1919,	17	1.71	8.86
1920,	24	1.17	8.91
1921,	34	1.39	8.89
1922,	40	1.21	8.87
1923,	48	1.13	8.92

A considerable portion of the skimmed milk sold in Aberdeen is hand-skimmed. The percentages of fat in this class of milk ranged from 1.08 to 2.30. As regards "separated" milk, the percentages ranged from 0.15 to 1.00.

Condensed Milk.

Twelve samples of condensed milk were purchased in order to see whether the requirements of the Public Health (Condensed Milk) Regulations (Scotland), 1923, were being complied with. Prior to these Regulations coming into operation, a circular was sent to all wholesale and retail merchants giving details of the Regulations.

Of the 12 samples purchased, two were found not to be properly labelled. These cases were reported to the Procurator-Fiscal and summonses were issued. As the respondents satisfied the Procurator-Fiscal and myself that the contraventions were due to accidental causes, the cases were settled out of Court on each respondent paying the expenses incurred, viz., twenty-five shillings.

Five of the samples were analysed by the Public Analyst, and were all certified to comply with the requirements of the Regulations. Undernoted are particulars:—

Description of Condensed Milk.	RESULT OF ANALYSIS.		PRESCRIBED STANDARD.	
	Milk Fat.	All Milk Solids.	Milk Fat.	All Milk Solids.
Full Cream, Unsweetened, . . .	9.12	31.19	9.0	31.0
Full Cream, Sweetened, . . .	9.13	41.80	9.0	31.0
Skimmed, Sweetened,	0.20	39.68	..	26.0
Full Cream, Sweetened, . . .	9.23	34.46	9.0	31.0
Full Cream, Unsweetened, . . .	9.00	31.00	9.0	31.0

Cream.

Eight samples of cream were purchased.

In view of the recommendations of the Inter-Departmental Committee, viz., that ordinary cream should contain 10 per cent. butter fat, the undernoted par-

particulars as to prices and quality are of interest. Half a pint was purchased in each case:—

No.	Price.	Fat.	Solids not Fat.
* 1,	3d.	7.77	7.92
* 2,	8d.	24.53	4.27
* 3,	6d.	14.71	6.89
† 4,	6d.	26.48	6.22
† 5,	6d.	18.24	5.06
* 6,	8d.	17.24	5.16
* 7,	5d.	10.46	6.64
* 8,	8d.	15.79	4.91

* Purchased from retailers.

† Purchased from producers.

Cheese.

Nine samples were purchased, and all found genuine.

Butter.

Thirty-four official and 17 informal samples were procured. Two of the informal samples were found to be under the standard, containing, respectively, 16.8 and 17.4 per cent. water. Official samples were subsequently purchased and certified to be genuine.

Margarine.

Sixteen samples were purchased, and all were genuine.

In five cases it was found that the requirements of the Acts as regards labelling were not being fully complied with. Letters of warning, accompanied by a circular containing particulars of the requirements, were sent to all offenders.

Dripping and Lard.

Four samples of dripping and five of lard were purchased. All were genuine.

Tea and Coffee.

One informal sample of tea was procured, as the householder was of opinion that the tea contained some injurious substance. No such substance was, however, found by the Analyst.

Seven samples of coffee were certified to be genuine.

Honey.

At the request of a grocer, one informal sample was procured, as the seller was of opinion that the honey contained some foreign matter. The sample was, however, certified to be genuine.

Oatmeal.

Eight official samples were procured, and all found genuine.

Canned Tomatoes.

In view of the fact that an excess quantity of tin had been found in canned tomatoes, nine samples of tomatoes were purchased, but in none of the samples was anything of an injurious nature found.

As a similar excess of tin had been found in tomato pulp, inquiry was made at all the shipping sheds with the view of having samples taken under the powers contained in the Public Health (Unsound Food) Regulations. It was found, however, that no tomato pulp had been landed at the port for a considerable time.

Spirits.

Fourteen samples of whisky, 7 of rum, 1 of brandy, and 1 of gin were purchased. Three samples of whisky and 2 samples of rum were found to be weaker than 35 degrees under proof. Undernoted are particulars:—

One sample of whisky was certified to be 48·31 degrees under proof. The seller pled guilty, and was fined £7.

A sample of whisky was certified by the Public Analyst to be 37·78 degrees under proof, but, on the third part being sent to the Government Chemist, it was certified to be only 35·9 degrees under proof.

A sample of rum was certified to be 35·79 degrees under proof, but, on the third part being sent to the Government Chemist, it was certified to be only 34·7 degrees under proof.

In view of the different results obtained in the case of the two last-mentioned samples, and particularly in view of the fact that in each case the deficiency was slight, it was decided to withdraw these two complaints.

Of the two remaining deficient samples, one was whisky, which was certified to be 49·40 degrees under proof. A notice was exhibited in the bar to the effect that the whisky was 48 degrees under proof. The case was reported for prosecution, and the seller was fined £3 3s.

A sample of rum was certified to be 48·95 degrees under proof, but in this case a notice was exhibited to the effect that the rum was 49 degrees under proof.

Of the 23 samples, 9 were purchased in public-houses and 14 in grocers' shops. Three of the deficient samples were purchased from grocers and 2 from publicans.

Two samples of red wine were analysed, and found to be genuine.

Drugs.

Twenty-eight samples of drugs were purchased—22 being informal samples and the remaining 6 official samples. Two of the informal and one of the official samples were found to be deficient.

One of the informal samples found deficient consisted of sweet spirits of nitre, which was certified to contain 0·74 per cent. ethyl nitrite, being a deficiency of 51 per cent. below the minimum of 1·52 per cent. ethyl nitrite. The quantity supplied was all that remained in the bottle at the time of purchase, and it was possible that the drug might have deteriorated through storage. Another sample was purchased some time later, and this was certified genuine.

The other deficient informal sample was of camphorated oil, which was certified not to be camphorated oil. An official sample was subsequently purchased, and it was certified to contain not more than 2 per cent. camphor, being a deficiency of 18 per cent. under the quantity of 20 per cent. camphor in camphorated oil, as defined in the British Pharmacopœia.

Prior to procuring the official sample, I had purchased, by the hands of a messenger, threepence worth of camphorated oil. On entering the shop immediately thereafter and asking to be supplied with a quantity for the purpose of having the same analysed by the Public Analyst, the chemist proceeded to the back shop and took therefrom a bottle from which he was going to supply the camphorated oil. I refused to take this oil, and pointed out that my assistant had already been supplied with camphorated oil out of a bottle which was deposited on a shelf underneath the counter opposite which I was then standing. The chemist was very reluctant to supply me out of this bottle, although when the bottle was produced it was found to have affixed to it a label bearing the words "Camphorated Oil. For external use." The assistant, who sold the threepence worth of oil, admitted that "camphorated oil" was asked for, and further admitted that he made no remark whatever at the time of the purchase to indicate that the oil was not "camphorated oil." It ought to be mentioned that when the informal sample was purchased a fortnight previously, the oil was sold by the chemist himself as "camphorated oil."

Eventually the chemist supplied me, under protest, with the desired quantity out of the bottle referred to, and volunteered the statement that the oil contained the following ingredients:—Lin. Camph., 10 per cent.; Turpentine, 5 per cent.; Oil Sassafras, 5 per cent.; and Oil Petroleum Flav., 80 per cent.

When the case came before the Court, the chemist pled guilty, but contended that the oil he supplied was quite as good as—and, indeed, for some purposes better than—camphorated oil. He was fined £3.

In order to satisfy myself as to whether other chemists were selling a similar compound as camphorated oil, I purchased 7 samples from shops in various parts of the City. All these samples were certified to be genuine.

The remaining samples of drugs—all of which were certified as genuine—consisted of olive oil, Easton's syrup, blue pills, tartaric acid, cream of tartar, Gregory's powders, and zinc ointment.

The Sale of Food Order, 1921—Labelling of Imported Produce.—Only two contraventions—each dealing with the insufficient labelling of Imported Meat—of the above Order came under the notice of the Department. Letters of warning were sent to the shopkeepers, and on subsequent inspections it was found that the requirements of the Order were being strictly complied with.

RAG FLOCK ACT, 1911.

Thirteen samples were procured under the above Act and duly analysed.

Eight of the samples were procured from upholsterers, 3 from bedding manufacturers, and 2 from rag flock manufacturers.

All the samples were reported as conforming with the standard prescribed by the Regulations, the individual results being as follows:—

No. of Sample.	Chlorine (of Chlorides) per 100,000 parts of Flock.
1	4.0
2	8.0
3	2.6
4	3.5
5	6.1
6	2.6
7	5.2
8	2.6
9	2.6
10	19.25
11	2.6
12	2.6
13	4.4

POISONS AND PHARMACY ACT, 1908.

No fresh applications were received for permission to sell substances to be used exclusively in agriculture or horticulture. Applications for the renewal of existing licences were made and granted. The premises were visited from time to time, and the arrangements for keeping poisonous substances found to be satisfactory.

FERTILISERS AND FEEDING STUFFS ACT, 1906.

During the year, four informal samples were procured from manufacturers or wholesale merchants in order to see that the requirements of the above Act were being complied with.

Undernoted are particulars as to the samples procured:—

FEEDING STUFFS.

DESCRIPTION OF SAMPLE.	ANALYSIS AS GUARANTEED.		ANALYSIS AS FOUND.	
	Oil per cent.	Albuminoids per cent.	Oil per cent.	Albuminoids per cent.
Poultry Food	6	10	7.6	10.3
Maizeko (Cooked Maize)	1.34	12.12	5.52	10.61

It will be observed that the amount of oil present in each of the above samples, even when allowance is made for the "Limits of Error" provided by the Act, was greater than what was stated in the invoice.

FERTILISERS.

DESCRIPTION OF SAMPLE.	ANALYSIS AS GUARANTEED.		ANALYSIS AS FOUND.	
	Nitrogen.	Insoluble Phosphate.	Nitrogen.	Insoluble Phosphate.
Bone Meal	4	50	3.99	53.3
Ground Phosphate . . . . .	...	57	...	55.23

The percentage of insoluble phosphates found in the sample of bone meal was greater than stated in the invoice.

The Public Analyst communicated with the Secretary of the Board of Agriculture and was informed that all samples which show an excessive allowance for error must be regarded as technically unsatisfactory. This information was sent to the merchants.

SHOPS ACT, 1912, AND THE SHOPS (EARLY CLOSING) ACTS, 1920 AND 1921.

The provisions of these Acts, and the Half-Holiday Orders and Closing Orders made under the principal Act, have been regularly enforced. In all, 7,598 inspections were made, and legal proceedings were instituted in 29 cases.

Half-Holiday Orders.

No additional Order was made in the course of the year. It was not found necessary to institute legal proceedings against anyone for failure to comply with the provisions of any of the Half-Holiday Orders. In two cases it was found that the shopkeepers had failed to close their shops at the prescribed hours. No evidence was obtained, however, that customers had been served after the closing hours, and it was accordingly deemed sufficient to send each of the shopkeepers a letter of warning.

It was observed from an advertisement in the press that a firm of auctioneers contemplated conducting a sale of drapery on the afternoon of the drapers' half-holiday, as also on the Saturday afternoon of that week. After the firm were warned that prosecution would follow if they persisted selling on each of these afternoons, the sale on the Saturday afternoon was cancelled.

Closing Orders under Section 5 (for fixing the closing hour for the several days of the week).

No additional Order was made during the year. As the result of inspections made it was found that 8 shopkeepers had failed to close their shops at the prescribed hours, but as there was no evidence that customers had been served, it was not considered necessary to prosecute. The shopkeepers were, however, warned that they must close the doors of their shops at the proper hours.

Section 1 (1) and (2)—Shop Assistants' Half-Holiday.

Two cases were discovered where the assistants did not receive a weekly half-holiday. In each of these cases the assistants were "young persons" and were being employed for more than 74 hours per week. Prosecutions were instituted in each case and the shopkeepers were fined, respectively, 5s. with 25s. of expenses, and 30s. with 27s. 8d. of expenses. In five cases it was found that the assistants were being employed for short periods after 1.30 p.m. on the afternoon of their weekly half-holiday. It was considered sufficient to send letters of warning to the offenders.

In 26 shops it was found that the assistants' half-holiday notice was either awaiting or was not properly filled up. Letters of warning were sent in every case, and, on subsequent inspection, it was found that proper notices were exhibited.

Section 1 (3)—Intervals for Meals.

Proceedings were instituted against a shopkeeper for failing to give his assistants the prescribed tea interval. A fine of 25s. was imposed.

A shopkeeper was also prosecuted for failing to give his assistants the prescribed dinner interval. He was fined 10s. with 25s. of expenses.

In three other cases it was found that the requirements of this Section were not being strictly complied with, and in one case it was found that an assistant was being employed for a period of six hours without receiving an interval of 20 minutes within that period. After the attention of the shopkeepers had been drawn to the contraventions, matters were rectified.

Section 2 (1) and (3)—Hours of Employment of Young Persons under 18 years of age.

Four contraventions of this Section—which requires that young persons must not be employed more than 74 hours, including meal times, in one week—were discovered. The offenders were two ice cream dealers, a fish and chip restaurant keeper, and a fancy goods dealer. As already stated, the assistants, in two of the cases, also failed to receive the weekly half-holiday. Convictions were obtained in each case. The hours worked by the assistants were, respectively, 79½, 87, 90, and 93. In view of the shortened hours which have been worked by all classes of employees, it is difficult to realise that any shopkeeper would employ a person under 18 years of age for a longer period than 74 hours per week. A sharp lookout is being kept for contraventions of a similar nature. Unfortunately, from a public health point of view, the Act does not limit the number of hours during which a person over the age of 18 years may be employed.

Letters were sent in 20 cases regarding the non-exhibition of the requisite notices and the notices were duly procured.

Section 3—Seats for Female Shop Assistants.

No contravention of this Section—which requires that in all rooms of a shop where female assistants are employed in the serving of customers the occupier of the shop shall provide seats behind the counter in the proportion of not less than one seat to every three female shop assistants—was discovered.

Section 4 (1) and (3)—Half-Holiday Closing of Shops.

Several complaints were received regarding the occupiers of "mixed" shops selling non-exempted articles on the afternoon of the half-holiday, but, on an attempt being made to purchase the articles complained of, the complaints were not substantiated.

There is no doubt, however, that, as stated in previous reports, a number of the occupiers of the smaller class of shop are guilty of this practice, but such sales are only effected to regular customers, or to persons well known to the shopkeeper. It is consequently difficult to discover offences. In fairness to the shopkeepers who strictly conform with the requirements, a circular was issued to the occupiers of 133 mixed shops warning them that, if a contravention was discovered, prosecution would follow.

Section 9—Provisions as to trading elsewhere than in shops.

A complaint was served on a travelling herbalist for selling "Herbal Mixture" in a market place on the afternoon of the Chemists' weekly half-holiday. Before the case was called, the accused had left the town and a warrant was granted to apprehend. On his return, a considerable time afterwards, the accused was arrested. He pled guilty, and was fined 10s., with 32s. 6d. of expenses.

Section 10 (1)—Conditions for "Mixed" Shops remaining open on the Weekly Half-Holiday.

The attention of 22 shopkeepers was drawn to the fact that the notices required under this Section were not being exhibited, and in every case the omission was remedied.

Shops (Early Closing) Act, 1920, as amended by the Act of 1921.

By these Acts the Order made in 1917 under the Defence of the Realm Regulations is continued in force, and has effect in the area of any Local Authority as if it were a Closing Order made and confirmed under the Shops Act, 1912.

Numerous complaints have been received from shopkeepers regarding their neighbours or competitors selling non-exempted articles after the closing hours prescribed in the Act. In 22 cases proceedings were instituted, and convictions obtained in 21 cases. The penalties, including expenses, aggregated £40. In the preceding year, the number of prosecutions was 18, and in 1921, 29.

As stated in previous reports, considerable vexation and irritation exist among certain shopkeepers and members of the public regarding the restrictions that are still being kept in force as to trading. Everybody is agreed as to the desirability of having all shops closed at as early an hour as possible, but these Acts permit the sale of certain articles beyond the prescribed closing hour, so that the shop can be kept open for the sale of these articles. It might be desirable for the legislature to consider whether the time has not now come when these restrictions, which were instituted as a war measure, should either be relaxed or abolished.

It will be recalled that in my Annual Report for 1920, an account was given of a prosecution which was instituted against a local auctioneer for selling goods

after the prescribed closing hour. The door of the saleroom was closed at 8 p.m. and no one was allowed to enter after that hour. The agent for the auctioneer contended that as all the sales complained of were made to customers who were in the saleroom before the closing hour, there was no contravention of the Act. The Sheriff, in finding the accused "not guilty," said that the auctioneer was entitled to finish the sale, and the circumstances were such as to bring him completely under the exemption provided by the Act.

It is of interest to report that in the course of the past year, a decision of the stipendiary magistrate for the county burgh of Salford was the subject of an appeal before the Queen's bench. The particulars of the complaint, which were almost identical with the local case referred to, were as follows:—Informations were laid against the appellants—the occupiers of an auction saleroom—for not closing at the appointed hour a shop where retail sales by auction were carried on. It was proved that after 8 p.m. on the days complained of, about 200 persons who had entered the premises before 8 p.m. remained on the premises. No new customers were admitted after 8 p.m., but a number of lots of furniture were put up for sale among those who had remained, and some of the said lots were sold. The stipendiary convicted, and fined the appellants on each of the complaints.

It was held that the conviction was right. Paragraph 2 of Part I. of the Schedule to the Shops (Early Closing) Act, 1920—which provides: "This Order shall not prevent the serving of a customer where it is proved that the customer was in the shop before the closing hour"—was meant to apply to the case of a purchaser who had accidentally failed to complete an intended purchase by 8 p.m. It did not allow a shopkeeper to collect a large number of persons on his premises before 8 o'clock in order that he might carry on his business to a much later hour by inviting them to bid for articles which they had not set out to purchase, and which were not in process of being sold before 8 p.m.

The appellants based their appeal on the following grounds:—

- (a) The convictions were erroneous in point of law;
- (b) There was no evidence to support them;
- (c) On the facts proved no offence had been committed;
- (d) The facts proved did not support the convictions; and
- (e) The convictions were contrary to law.

The leading judge, in giving his opinion, stated, *inter alia*:—"It is not necessary to attempt to lay down an exhaustive definition of what is permitted by Paragraph 2, but upon the materials before the learned stipendiary, it is quite clear that he had ample grounds for coming to the conclusion that that which was complained of was not protected by the exceptions in Paragraph 2. There is obviously a clear difference between offering after the closing hour as against invitation to buy—urging the general public in large numbers to be present before 8 o'clock in order that articles may be offered for sale, particular persons among whom may be persuaded to become customers—and, on the other hand, serving in an emergency, a customer who happens to be in the shop before the closing hour. In other words, it has been

suggested that there is a contrast between a general keeping open of a shop in order to invite persons to become customers, and, on the other hand, a serving in an emergency of a particular existing customer who happens to be caught in the shop, so to say, by the coming of the closing hour. I am not attempting to imagine, much less to lay down, an exhaustive description of what is permitted by Paragraph 2, but I have no doubt whatever that there were ample materials upon which the learned stipendiary could conclude that Paragraph 2 did not permit what was complained of. I think, therefore, that this appeal must be dismissed." The other two judges concurred in this opinion.

I thought it right to communicate with all the local auctioneers regarding this decision, and it is gratifying to be able to report that all the auctioneers who were in the habit of shutting the doors of their salerooms at the prescribed closing hour and continuing to sell to persons who were within the premises before the closing hour have now discontinued this practice.

EXTERMINATION OF RATS.

The agreement entered into in 1917 between a number of citizens—mainly the proprietors of food warehouses and similar premises—under which the services of the two Corporation ratcatchers were made available to the contributors to the scheme, is still in operation. The number of contributors at the end of 1923 was 56. This is a decrease of 1 as compared with the previous year. The number of visits paid to their premises during the year was 2,445.

The services of the ratcatchers were also made available, on request, for 109 citizens' premises which were found to be infested with rats, on payment of the charges fixed by the Sub-Committee in charge of the scheme. The number of similar premises dealt with in the previous year was 123.

The ratcatchers periodically visit all open places such as rubbish tips, railway embankments, burns, &c., and also all premises belonging to the Town Council which are known to be infested with rats.

Undernoted are particulars regarding the number of poisoned baits laid during the year:—

	Contributors' Premises.	Non-Contributors' Premises.	Town Council Premises.	Total.
Number of pieces of Poison Feed laid,	44,895	16,757	14,901	76,553
Number of pieces of Poison Feed eaten.	13,567	3,934	7,919	25,420
Liquid Poison laid, . . .	11½ pints.	...	...	11½ pints.
Do. consumed, . . .	2¼ do.	...	...	2¼ do.
Dry Poison Feed (Mice) laid,	17½ ounces.	5½ ounces.	6¼ ounces.	1 lb. 13½ oz.
Dry Poison Feed (Mice) eaten,	2½ do.	1¼ do.	¾ ounce.	4½ ounces.

Following upon a suggestion made by the Board of Agriculture, a "Rat Week" was held during the last week of March. In the previous year, the Board suggested two "Rat Weeks"—the first in March and the second in November.

As was done in former "Rat Weeks," temporary premises were rented by the Department for the sale of rat poison. The only poison sold was red squill, which is non-injurious to human beings and domestic animals. Each purchaser was supplied with a set of instructions giving full information as to how the poison was used, and was also supplied with a stamped post card on which he was asked to give particulars as to the results obtained. It was recommended that baits should be laid at least three times. Between 2,000 and 3,000 leaflets, inviting the occupiers of all rat-infested premises to take part in the campaign were distributed. Advertisements were also inserted in the local press. During "Rat Week" the Department's ratcatchers were solely employed in laying poisoned baits in rubbish tips, burns, sewers, and other public places.

As a supplement to the work done by the Department in connection with the extermination of rats, the sale of red squill in the Public Health Office was commenced in June last. Scarcely a day passes without some poison being sold.

Undernoted are particulars as to the quantities of poison sold during "Rat Week" and during the period from 1st June to 31st December:—

	RAT WEEK.			FROM 1st JUNE TO 31st DECEMBER.		
	City Purchasers.	Country Purchasers.	Total.	City Purchasers.	Country Purchasers.	Total.
5-oz. bottles . . .	174	65	239	113	29	142
10-oz. do. . . .	75	69	144	65	23	88
25-oz. do. . . .	17	33	50	14	19	33
TOTALS,	266	167	433	192	71	263

It is disappointing again to have to report that a very large proportion of the purchasers failed to return the post cards, although every purchaser is urged to do so.

Undernoted is a summary of the information contained in the post cards:—

Rat Week—26th to 31st March.

CITY PURCHASERS.							
Number of Post Cards.		First Occasion.		Second Occasion.		Third Occasion.	
Issued.	Returned.	Laid.	Missing.	Laid.	Missing.	Laid.	Missing.
256	67	1,834	773	1,380	406	778	115
Percentage of Baits missing . . .		42 per cent.		29 per cent.		15 per cent.	

Number of baits laid by ratcatchers in public places, . . . 7,589
 Number of such baits taken away, . . . 3,723
 Percentage taken away, . . . 49 per cent.

COUNTRY PURCHASERS.							
Number of Post Cards.		First Occasion.		Second Occasion.		Third Occasion.	
Issued.	Returned.	Laid.	Missing.	Laid.	Missing.	Laid.	Missing.
167	39	1,176	783	961	326	656	159
Percentage of Baits missing . . .		67 per cent.		34 per cent.		24 per cent.	

Office Sales from 1st June to 31st December.

CITY PURCHASERS.							
Number of Post Cards.		First Occasion.		Second Occasion.		Third Occasion.	
Issued.	Returned.	Laid.	Missing.	Laid.	Missing.	Laid.	Missing.
192	18	382	259	244	76	191	32
Percentage of Baits missing . . .		68 per cent.		31 per cent.		17 per cent.	

COUNTRY PURCHASERS.							
Number of Post Cards.		First Occasion.		Second Occasion.		Third Occasion.	
Issued.	Returned.	Laid.	Missing.	Laid.	Missing.	Laid.	Missing.
71	14	546	450	481	302	209	104
Percentage of Baits missing . . .		82 per cent.		63 per cent.		50 per cent.	

As part of their routine duty, all the District Inspectors keep a lookout for rat-infested premises and when such are found, and sufficient steps are not being taken to exterminate the rats, a notice is served under the Rats and Mice Destruction Act, 1920, upon either the occupier or owner. The number of such notices served during the past year was 54. The corresponding number in each of the three preceding years was, respectively, 108 in 1922, 176 in 1921, and 79 in 1920. It would appear, therefore, as if the constant and steady work which is being done in connection with rat extermination is assisting materially in keeping down the vermin.

When dealing with rat-infested premises, every effort is made to prevent re-infestation. Generally speaking, we find that owners of properties are quite willing to co-operate both in exterminating the rats and also in taking steps to prevent re-infestation of the premises. The fact remains, however, that under the Rats and Mice Destruction Act, the onus of doing so is placed solely upon the occupier. As stated in previous reports, it would be a great advantage if power were given, as in the Public Health Act, in connection with nuisances to serve the notices on either the occupier or the owner, and, if necessary, on both these parties.

Valuable assistance continues to be rendered by the Burgh Surveyor's Department in raising the pavements and closing up the rat runs.

COMMON LODGING-HOUSES AND HOUSES LET IN LODGINGS.

At the end of 1923, there were only two common lodging-houses in the City, viz., the Sailors' Home and the Home for Deep Sea Fishermen.

The number of houses let in lodgings on the register was 38. This number includes four houses which were formerly registered as common lodging-houses, but which, on account of the charge per night having been in 1920 increased beyond the sum of 6d., were transferred to the register of houses let in lodgings.

Forty day visits and 21 night visits were made to the common lodging-houses—while 486 day and 180 night visits were paid to the houses let in lodgings. The houses were all kept in good repair and in a cleanly condition, and no serious contravention of the bye-laws was discovered. Particular attention is paid to the cleanliness of the bedding.

SANITARY CONDITION OF THEATRES, MUSIC HALLS, CINEMAS, &c.

Following upon the circular letter from the Scottish Board of Health, dated 6th December, 1920, all the places of public entertainment were periodically visited during the year. The number of licensed places of amusement is 36, and the number of visits paid was 175.

Undernoted are particulars as to the work carried out at the instance of the Department:—

Number of inspections,	175
Improved ventilation provided for dressing-room,	1

Sashcords for windows renewed,	8
Cords for ventilators provided,	5
Premises in which seats were cleaned,	14
Premises in which seats were repaired,	4
Floors of halls cleaned,	3
Floors of dressing-rooms cleaned,	2
Floors of passages cleaned,	5
Stairs cleaned,	2
Walls of halls cleaned,	15
Walls and ceilings of dressing-rooms cleaned,	4
Walls and ceiling of kitchen cleaned,	1
Walls and ceilings of staircases and passages cleaned,	12
Walls and ceilings of water-closets cleaned,	41
Walls and ceilings of urinals cleaned,	5
Walls and ceiling of store cleaned,	1
Basins of water-closets cleaned,	7
Urinal stalls cleaned,	5
Floor coverings renewed or repaired,	2
Stair coverings renewed or repaired,	2
Urinals repaired,	4
Water-closet cistern repaired,	1
Windows of halls repaired or reglazed,	8
Windows of water-closets repaired or reglazed,	6
Windows cleaned,	6
Plaster on walls and ceilings repaired,	9
Grating provided for fresh-air inlet,	1
Choked drains or pipes cleared,	3
Accumulations of rubbish removed,	5

PORT SANITARY INSPECTION.

In accordance with the scheme of Port Sanitary Administration prepared by the Local Authority and approved by the Scottish Board of Health, 367 vessels—280 British and 87 Foreign—were inspected during the year. Of these, 92 were found to be unsatisfactory. The Department receive daily a list of all the arrivals and departures and all vessels from foreign ports are inspected as soon as possible after arrival. Altogether, 535 visits to ships were made during the year.

Careful inquiry is made regarding the presence of rats, but in comparatively few cases have we found any evidence of, or has it been admitted that there was, rat infestation. There is no doubt, however, that there are very few vessels in which there are not, at times, rats in some parts of the vessel, such as the galleys or sleeping quarters. In the majority of vessels, however, dogs and cats are carried, and by means of these, as also by the use of traps and poison, the number of rats is kept down.

The services of the Department's ratcatchers were employed in connection with four vessels in the course of the year.

Undernoted are particulars as to the sanitary defects or nuisances found :—

Forecastles, Rooms, &c.

Floors dirty	11	Ports defective	3
Walls dirty	16	Ship sides leaking	3
Tables and benches dirty	9	Deck leaking	5
Bunks and bedding dirty	12	Heating stoves defective	4
Food lockers dirty	2	Flue pipes defective	2
Pantry dirty	1	Stairways out of repair	5
Galleys dirty	2	Seats out of repair	2
Storeroom dirty	1	Inadequate ventilation	3
Utensils dirty	4	Inadequate lighting	1
Drinking water tanks dirty	3	Drinking water tank in unsuitable position	1
Gear stored in bunks	8	Water pumps defective	2

Water-closets, Wash-houses, &c.

Floors of w.c.'s dirty	8	Gear stored in w.c. apartments	5
Basins of w.c.'s dirty	7	Basins of w.c.'s defective	2
Ablution benches dirty	2		

Prevention of Smoke.

Nuisance abated	1
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INFECTIOUS DISEASE.

There were, in all, 1,012 cases of infectious disease removed to, or treated in, the various hospitals, and 101 cases were removed to the Reception House. In addition, 153 cases of marasmus were treated in the City Hospital. The number of cases of infectious disease supervised at home was 1,556. The most prevalent infectious disease was measles, of which disease there were 594 cases. There were 335 cases of primary pneumonia, 271 of scarlet fever, 263 of pulmonary tuberculosis, 255 of chicken-pox, 189 of diphtheria and membranous croup, 137 of non-pulmonary tuberculosis, 110 of erysipelas, 87 of whooping cough, 63 of ophthalmia neonatorum, 20 of typhoid fever, 17 of acute influenzal pneumonia, 15 of puerperal fever, 5 of epidemic cerebro-spinal meningitis, 3 of malaria, 2 of German measles, 1 of small-pox, and 1 of para-typhoid A.

The usual notices were in every case served under Section 50 (2) and Section 53 (2) of the Public Health (Scotland) Act, 1897.

There were 1,998 intimations made to school teachers, 2,206 houses and 2,559 sets of clothing and bedding disinfected, and 344 chaff beds destroyed.

INTERMENTS.

Applications were received in 21 cases under Section 69 of the Public Health (Scotland) Act, 1897, to bury unclaimed bodies or the bodies of persons whose

relatives were unable to do so, as compared with 47 applications in 1922, 25 in 1921, and 18 in 1920.

Nineteen of the applications were granted, at a cost to the Department of £47 2s., of which £15 13s. 6d. was refunded by relatives and paid over to the City Chamberlain.

The ages of the interred were—11 under 1 year of age, 2 between 1 and 12 years, and 6 from 12 years of age and upwards.

All the interments were carried out in Trinity Cemetery.

PROSECUTIONS.

Particulars as to the prosecutions instituted by the Department in the course of the year will be found in Appendix IV.

I am, Gentlemen,

Your obedient servant,

JAMES CUMMING,
Sanitary Inspector.

APPENDIX I.

STATEMENT OF PROCEEDINGS UNDER THE PUBLIC HEALTH AND OTHER ACTS
DURING 1923.

	Number.
Subordinate Sanitary Inspectors employed,	12

I.—NUISANCES.

Complaints received,	3,236
Intimations under Section 19,	8,571
Notices served under Section 20,	596
Cases in which Legal Proceedings were taken,	8

II.—WORKSHOPS.

Inspections,	3,511
Notices served under Section 2 (3) of Factory and Workshop Act, 1901,	653
Cases in which Legal Proceedings were taken,	0

III.—TENTS AND VANS.

Inspections,	42
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IV.—UNDERGROUND DWELLINGS.

Reported to Local Authority,	0
Notices to Owners (Section 74),	0

V.—COMMON LODGING-HOUSES.

On Register at 1st January, 1923,	2
Registered during year (not to include Renewals),	0
Renewals of Registration,	2
Removed from Register,	0
On Register at 31st December, 1923,	2
*Common Lodging-Houses belonging to the Local Authority,	1
Inspections between 8 a.m. and 10 p.m.,	40
Inspections between 10 p.m. and 8 a.m.,	21
Intimations of Irregularities sent to Keepers,	0
Cases of Infectious Disease reported to Medical Officer (Section 97),	0
Unregistered Premises dealt with,	0
Cases in which Legal Proceedings were taken (Breaches of Bye-laws, &c.),	0

* Meantime registered as a "House Let in Lodgings."

VI.—HOUSES LET IN LODGINGS.

On Register at 1st January, 1923,	34
Registered during year,	5
Removed from Register,	1
On Register at 31st December, 1923,	38
Inspections,	666
Cases in which Legal Proceedings were taken,	0

VII.—INFECTIOUS DISEASES.

Visits of Inquiry, &c.,	7,695
Patients removed to Hospital,	1,165
Persons removed to House of Reception,	101
Notices served under Section 50 (2),	3,008
Notices served under Section 53 (2),	
Intimations to Education Authorities, Teachers, &c.,	1,998
Houses and Premises disinfected,	2,206
Sets of Clothing, Bedding, &c., disinfected or destroyed,	2,559
Cases in which Legal Proceedings were taken,	0

VIII.—BURIALS.

Burials undertaken in terms of Section 69,	20
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IX.—DAIRIES, COWSHEDS, AND MILKSHOPS.

On Register at 1st January, 1923,	652
Registered during year,	201
Removed from Register,	163
On Register at 31st December, 1923,	690
Inspections,	3,195
Contraventions of Orders or Regulations dealt with,	57
Cases in which Legal Proceedings were taken,	2

X.—SLAUGHTER-HOUSES AND OFFENSIVE TRADES.

Applications under Section 32 for sanction to establish,	6
Applications granted,	*3
Applications under Section 33 for Licence or Renewal of Licence,	7
Applications granted,	7
Public Slaughter-Houses (if any) belonging to Local Authority,	0
Private Slaughter-Houses,	5
Unlicensed Slaughter-Houses dealt with,	0
Inspections of Slaughter-Houses,	2,290
Inspections of other Offensive Businesses,	2,475
Number of such other Offensive Businesses at 31st December, 1923,	48
Cases in which Legal Proceedings were taken (Breaches of Bye-laws, &c.),	0

* Three applications not yet disposed of.

XI.—UN SOUND FOOD.

Inspections under Section 43,	6,846
Seizures of Unsound Food,	668
Animals or Carcases or Articles of Food destroyed with Owner's Consent by or at the instance of the Sanitary Inspector,	668
Cases in which Owners of Unsound Food were prosecuted,	0

XII.—SALE OF FOOD AND DRUGS ACTS.

Samples procured for Analysis,	796
Certified to be Genuine,	755
Certified to be Adulterated,	41
Cases in which Legal Proceedings were taken,	14
Cases in which Legal Proceedings were successful,	11

XIII.—RAG FLOCK ACT, 1911.

Samples procured for Analysis,	13
Certified to conform to Board's standard,	13
Certified not to conform to Board's standard,	0
Cases in which Legal Proceedings were taken,	0

XIV.—BYE-LAWS.

Inspections in carrying out Bye-laws relating to—

(a) Pig-styes,	401
(b) Other sanitary matters,	0

APPENDIX II.

INSPECTIONS OF FOOD.

NUMBER AND PLACE OF INSPECTIONS OF FOOD DURING YEAR 1923.

Fish Market,	336	Fleshers' Shops,	159
Shipping Sheds,	90	Fruiterers' Shops,	—
Fish-curing Premises,	708	Restaurants,	21
Slaughter-houses,	2,290	New Market Hall,	244
Meat Marts,	1,702	Street Markets,	153
Provision Curing Works,	290	Other Premises,	1,940
Wholesale Warehouses,	216		
Grocers' Shops,	33	Total,	<u>8,123</u>
Fishmongers' Shops,	31		

UNSOUND FOOD SEIZED OR DESTROYED DURING YEAR 1923.

	No. of Seizures	WEIGHT IN LBS.									
		Beef.*	Veal.*	Mutton*	Pork.*	Offal.	Game.	Poultry.	Fruit.	Tinned Food.	Fish.
January,	92	20,147	...	932	686	182	...	26	...	337	42
February,	65	13,560	...	37	56	83	...	...	...	993	238
March,	110	28,389	59	442	62	490	...	...	...	351	448
April,	133	25,795	70	668	774	470	...	...	...	1,030	4,592
May,	178	41,204	131	214	519	856	...	...	...	966	...
June,	120	20,011	22	428	760	320	...	...	...	963	1,346
July,	94	14,774	...	66	916	624	...	...	...	1,372	720
August,	100	12,318	188	146	145	754	...	...	...	1,004	1,628
September,	110	17,773	177	241	897	575	...	...	18	616	126
October,	144	21,600	...	554	1,092	679	36	...	...	1,181	...
November,	125	18,409	190	163	998	495	...	...	...	617	448
December,	127	23,858	...	67	748	1,070	...	...	...	290	...
	1,398	257,829	837	3,958	7,653	6,598	36	26	18	9,720	9,588

* Including offal where forming only part of seizure.

FOOD INSPECTIONS.—SUMMARY FOR YEARS 1914 to 1923.

	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.
Number of Inspections,	10,245	11,009	11,100	11,370	10,433	10,416	9,828	10,080	8,507	8,123
Number of Seizures,	908	1,099	1,157	1,052	1,680	2,464	2,504	1,350	1,328	1,398
Weight of Food Seized (Tons),	142	125	399	96	173	270	272	133	156	132
Number of Cases dealt with by Magistrates,	2	5	...	...	1	...	...	2	...	...
Legal Proceedings instituted,	1	3	...	...	1	...	...	2	...	...
Fines Imposed,	£5	£22 7s.	...	...	£5 18s. 6d.	...	...	£10 10s.	...	...

APPENDIX III.

LIST OF REGISTERED WORKSHOPS IN ABERDEEN AT 31st DECEMBER, 1923,
WITH NUMBER OF EMPLOYEES.

Description of Workshop.	Number.	No. of Male Employees.	No. of Female Employees.
Agricultural Implement Maker,	1	—	—
Bakers,	39	45	43
Basketmakers,	3	11	—
Blacksmiths,	20	33	—
Bootmakers,	22	23	1
Bottlers,	11	28	26
Brushmaker,	1	2	—
Cartwrights,	2	3	—
Carvers (including Gilders),	4	3	—
Confectioners,	11	9	3
Coopers,	10	27	—
Corkcutter,	1	—	—
Corset Makers,	2	—	1
Cycle Repairers,	18	23	—
Dentists (Mechanical),	4	11	—
Embroiderer,	1	—	2
Engravers,	5	7	—
Furriers,	2	—	8
Fishcurers,	92	261	613
Fishdriers,	5	87	—
Fishing Net Makers,	7	14	56
Fish Packers,	77	139	43
Fish Box Washers,	12	23	—
Fishing Tackle Makers,	2	2	48
Furniture, Makers of,	36	57	57
Gold Paint Manufacturer,	1	1	2
Golf Club Repairer,	1	1	—
Gut or Tripe Cleaner,	1	7	11
Health Salt Manufacturer,	1	—	3
Ham Curers,	2	2	1
Indiarubber Merchants,	2	1	2
Joiners,	15	18	—
Japanner,	1	3	—
Laundries,	7	—	39
Mattress Makers,	2	2	2
Milliners,	33	—	70
Motor Repairers,	4	8	—
Oil Manufacturers,	2	5	—
Optician,	1	1	—
Painters (including Glass Stainers),	28	194	2
Paper Bag Makers,	2	—	50
Photographers,	14	6	29
Piano Repairers,	5	10	5
Picture Frame Makers,	7	15	1

Description of Workshops.	Number.	No. of Male Employees.	No. of Female Employees.
Plaster Casters and Tile Fixers,	6	7	—
Plumbers,	28	64	—
Rag and Metal Merchants,	10	9	24
Riggers,	5	14	—
Ropemakers,	2	4	—
Sackmaker,	1	4	—
Saddlers,	9	9	3
Sailmakers, . . . . .	..	..	—
Saw Trimmers,	3	2	—
Scale Repairers,	2	4	—
Shirt Maker,	1	—	5
Stonecutters,	6	13	—
Sewing Machine Repairer,	1	2	—
Tailors,	101	154	193
Taxidermist,	1	—	1
Tinsmiths,	9	28	—
Umbrella Repairer,	1	1	—
Undertakers,	5	16	6
Venetian Blind Maker,	1	2	—
Watchmakers and Jewellers,	17	29	—
Wearing Apparel, Makers of	70	—	223
Wigmakers,	3	2	1
Wireworker,	1	4	—
Totals,	802	1454	1574

APPENDIX IV.—PROCEEDINGS FOR CONTRAVENTIONS OF STATUTES IN YEAR 1923.

Date.	Court.	Act.	Offence.	Penalty or Decision.
Feb. 1	Sheriff	Shops (Early Closing) Act, 1920	Shopkeeper and assistant selling boiled ham beyond prescribed closing hour	Shopkeeper and assistant each found "not guilty."
" 2	Do.	Sale of Food and Drugs Acts	Supplying milk containing not more than 2.63 p.c. fat	Case withdrawn, as milk from cows found to be under the standard.
" 6	Police	Public Health (Scotland) Act, 1897	Two tenants failing to keep the floor and seat of the W.C. in a cleanly condition	One tenant fined 5s.; other tenant found "not guilty."
" 6	Do.	Aberdeen Corporation Act, 1881	Tenant failed to vacate a dwelling-house which had been closed by an Order of the Town Council as being unfit for human habitation	Penalty £2 or 20 days' imprisonment.
" 8	Sheriff	Shops (Early Closing) Act, 1920	Selling cigarettes beyond prescribed closing hour	Penalty, £5, with 25s. expenses (4th offence).
" 15	Do.	Sale of Food and Drugs Acts	Selling whisky which was 13.31 degrees under the statutory standard of 35 degrees under proof	Penalty, £7 7s.
" 15	Do	Shops (Early Closing) Act, 1920	Shopkeeper and assistant selling biscuits and fire-lighters beyond prescribed closing hour	Each pled "guilty," and were fined the amount of the expenses, viz., 27s. 6d.
" 15	Do.	Do.	Selling cocoa beyond prescribed closing hour	Penalty, 5s., with 25s. of expenses.
" 22	Do.	Sale of Food and Drugs Acts	Selling camphorated oil which contained not more than 2 p.c. camphor	Penalty, £3.
" 22	Do.	Do.	Selling milk containing not more than 2.06 p.c. fat	Penalty, £5.
Mar. 7	Police	Aberdeen Corporation Act, 1881	Tenant failed to vacate a dwelling-house which had been closed by an Order of the Town Council as being unfit for human habitation	Penalty £1, with 23s. 6d. of expenses, or 10 days' imprisonment (2nd offence).
" 7	Sheriff	Sale of Food and Drugs Acts	Selling milk containing not more than 2.77 p.c. fat	Penalty, £5 (2nd offence).
" 7	Do.	Do.	Selling milk containing not more than 2.85 p.c. fat	Penalty, £4.
" 7	Do.	Do.	Selling whisky which was 2.78 degrees under the statutory standard of 35 degrees under proof	Case withdrawn, as sample sent to Government Laboratory was certified to be 35.9 degrees u.p.
" 7	Do.	Do.	Selling rum which was 0.79 degrees under statutory standard of 35 degrees under proof	Case withdrawn, as sample sent to Government Laboratory was certified to be 34.7 degrees u.p.
" 7	Do.	Do.	Supplying milk containing not more than 2.62 p.c. fat	No proceedings, as milk from cows was found under standard.
" 22	Do.	Shops (Early Closing) Act, 1920	Selling biscuits beyond prescribed closing hour	Penalty, 3s. 6d., with 36s. 6d. of expenses.
" 29	Do.	Do.	Selling confectionery beyond prescribed closing hour	Penalty, 5s., with 25s. of expenses.
April 2	Do.	Sale of Food and Drugs Acts	Selling milk containing not more than 2.82 p.c. fat	Case withdrawn, as milk supplied to accused was found under standard.

PROCEEDINGS FOR CONTRAVENTIONS OF STATUTES—continued.

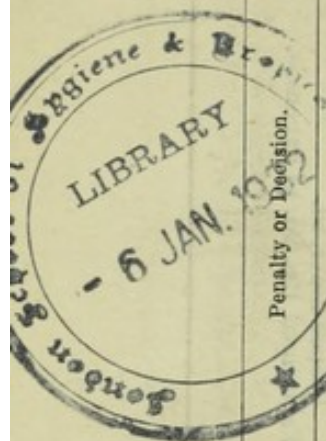
Date.	Court	Act.	Offence.	Penalty or Decision.
1923				
April 2	Sheriff	Sale of Food and Drugs Acts .	Supplying milk containing not more than 2·97 p.c. fat	Case withdrawn, as milk from cows found to be under standard.
" 5	Do.	Do. do.	Selling milk containing not more than 2·82 p.c. fat	Penalty, £1.
" 12	Do.	Shops (Early Closing) Act, 1920	Selling bananas beyond prescribed closing hour	Penalty, 7s. 6d., with 25s. expenses.
" 20	Do.	Shops Act, 1912 . . .	Employing a young person for 87 hours per week ; failing to exhibit notice prescribed by S. 2 (3) of Act	Penalty 5s., with 25s. 6d. of expenses.
May 17	Do.	Do.	Failing to give assistants the prescribed tea interval .	Penalty, 25s.
" 17	Do.	Shops (Early Closing) Act, 1920	Selling biscuits beyond prescribed closing hour . .	Penalty 5s., with 25s. of expenses.
" 31	Do.	Shops (Early Closing) Act, 1920	Selling dumpling beyond prescribed closing hour . .	Penalty, 25s.
June 21	Do.	Do. do.	Shopkeeper and assistant selling icecream beyond prescribed closing hour	Shopkeeper fined 2s. 6d., with 27s. 6d. expenses ; case against assistant deserted.
July 19	Do.	Do. do.	Selling biscuits beyond prescribed closing hour . .	Penalty, 25s.
Aug. 1	Do.	Do. do.	Shopkeeper and assistant selling aerated waters beyond prescribed closing hour	Shopkeeper fined 30s. 5d. of expenses ; case against assistant deserted.
" 8	Do.	Do. do.	Selling icecream beyond prescribed closing hour . .	Penalty 30s. 5d. of expenses.
" 10	Do.	Do. do.	Shopkeeper and assistant selling icecream beyond prescribed closing hour	Shopkeeper fined 15s., with 36s. 2d. expenses ; assistant fined 5s.
" 10	Do.	Shops Act, 1912, and the Aberdeen Shops Weekly Half Holiday Order	Travelling herbalist selling "Herbal Mixture" on afternoon of Chemists' weekly half-holiday	Fined 10s., with 32s. 6d. of expenses.
" 30	Do.	Shops (Early Closing) Act, 1920	Shopkeeper and assistant selling icecream beyond prescribed closing hour	Shopkeeper fined 10s., with 20s. of expenses ; case against assistant deserted.
" 30	Do.	Do. do.	Shopkeeper and assistant selling icecream beyond prescribed closing hour	Shopkeeper fined 10s., with 20s. of expenses ; case against assistant deserted
" 30	Do.	The Milk (Scotland) Order, 1921	Adding colouring matter to cream	Penalty, £2.
Oct. 18	Do.	Sale of Food and Drugs Acts	Selling milk containing not more than 2·92 p.c. fat .	Case withdrawn ; letter of warning sent.
" 18	Do.	Do. do.	Selling milk containing not more than 8·09 p.c. solids not fat	Case withdrawn ; letter of warning sent.
" 18	Do.	Do. do.	Supplying milk containing not more than 2·92 p.c. fat	Case withdrawn, as milk supplied to accused found under standard.
" 25	Do.	Do. do.	Supplying milk containing not more than 2·94 p.c. fat	Case withdrawn ; letter of warning sent.

PROCEEDINGS FOR CONTRAVENTIONS OF STATUTES—continued.

Date.	Court.	Act.	Offence.	Penalty or Decision.
1923				
Oct. 25	Sheriff	Shops (Early Closing) Act, 1920	Selling biscuits and confectionery beyond prescribed closing hour	Penalty, 27s. 8d. of expenses.
" 25	Do.	Shops Act, 1912	Employing a young person 93 hours per week; failing to give two assistants weekly half-holiday; and failing to exhibit prescribed notices	Penalty, 30s., with 27s. 8d. of expenses.
" 31	Do.	Sale of Food and Drugs Acts	Selling milk containing not more than 2.51 p.c. fat	Penalty, 25s.
Nov. 8	Do.	do.	Supplying milk containing not more than 2.47 p.c. fat and 6.21 p.c. solids not fat	Penalty, £7 10s.
" 8	Do.	do.	Supplying milk containing not more than 7.25 p.c. solids not fat	Penalty, £7 10s.
" 8	Do.	Shops Act, 1912	Employing a young person 90 hours per week; and failing to exhibit prescribed notices	Penalty, 20s., with 25s. of expenses.
" 13	Police	Public Health (Scotland) Act, 1897	Tenant improperly using W.C.	Penalty, 5s., with 21s. of expenses.
" 15	Sheriff	Shops (Early Closing) Act, 1920	Shopkeeper and assistant selling biscuits, aerated waters, &c., beyond prescribed closing hour	Shopkeeper fined 12s. 6d., with 25s. expenses; assistant admonished.
" 16	Police	Aberdeen Police and Improvement Act, 1900	Selling icecream without being registered	Penalty, 40s., or 20 days' imprisonment.
" "	Do.	do.	Selling icecream without being registered	Penalty, 40s., or 20 days' imprisonment.
" 26	Do.	Aberdeen Police and Waterworks Act, 1862	Permitting a choked drain to exist	Penalty, 40s., or 20 days' imprisonment.
" 30	Do.	Aberdeen Corporation Act, 1881	Tenant failing to vacate a dwelling-house which had been closed by an Order of the Town Council as being unfit for human habitation	Penalty, 40s., with 31s. 6d. of expenses, or 15 days' imprisonment (third offence).
Dec. 3	Do.	Aberdeen Police and Waterworks Act, 1862	Tenant permitting a painful of human filth to remain in his dwelling-house	Penalty, 15s.
" 10	Do.	Public Health (Scotland) Act, 1897	Three tenants failing to keep the floor, seat, and basin of a W.C. in a cleanly condition	One tenant fined 7s. 6d., or five days' imprisonment; charge against other two tenants deserted.
" 10	Sheriff	Sale of Food and Drugs Acts.	Selling milk containing not more than 2.97 p.c. fat	Case withdrawn; letter of warning sent.
" 13	Do.	Shops Act, 1912	Failing to give two assistants the dinner interval prescribed by the Act	Penalty, 10s., with 25s. of expenses.
" 13	Do.	Shops (Early Closing) Acts, 1920, and 1921	Shopkeeper and assistant selling confectionery beyond prescribed closing hour	Assistant fined 35s.; charge against shopkeeper deserted.
" 13	Do.	Shops (Early Closing) Act, 1920	Two street hawkers selling Christmas cards beyond prescribed closing hour	Each fined 13s. 9d. of expenses.

PROCEEDINGS FOR CONTRAVENTIONS OF STATUTES—continued.

Date.	Court.	Act.	Offence.	Penalty or Decision.
1923				
Dec. 13	Sheriff	Shops (Early Closing) Act, 1920	Shopkeeper selling pocket knives beyond prescribed closing hour	Penalty, 40s., with 25s. of expenses (3rd offence).
" 13	Do.	Do.	Shopkeeper selling cigarettes beyond prescribed closing hour	Penalty, 10s., with 25s. of expenses.
" 20	Do.	Sale of Food and Drugs Acts .	Supplying milk containing not more than 8.30 p.c. fat solids other than fat	Penalty, £5.
" 20	Do.	Do.	Supplying milk containing not more than 2.80 p.c. fat	Case withdrawn, as milk from cows found to be under the standard.
" 27	Do.	Do.	Supplying milk containing not more than 2.88 p.c. fat	Case withdrawn, as milk from cows found to be under the standard.
" 27	Do.	Do.	Supplying milk containing not more than 2.93 p.c. fat	Case withdrawn : letter of warning sent.
" 27	Do.	Do.	Selling milk containing not more than 2.91 p.c. fat	Case withdrawn : letter of warning sent.
" 31	Do.	Public Health (Condensed Milk) Regulations	Selling condensed milk without being properly labelled	Penalty, 25s. of expenses.
" 31	Do.	Do.	Selling condensed milk without being properly labelled	Penalty, 25s. of expenses.
1924.				
Jan. 10	Do.	Shops Act, 1912	Employing an assistant for more than 74 hours in the week ; and failing to give said assistant the weekly half-holiday	Penalty, 5s., with 25s. of expenses.
" 17	Do.	Sale of Food and Drugs Acts .	Supplying milk containing not more than 2.99 p.c. fat and not more than 8.47 p.c. solids other than fat	Case found " not proven."
Feb. 14	Do.	Do.	Selling whisky which was 1.40 degrees under the strength stated in the notice affixed to the receptacle	Penalty, £3 3s.











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