Annual report / Municipality of Singapore, Health Department.

MUNICIPALITY OF SINGAPORE

HEALTH DEPARTMENT

ANNUAL REPORT

FOR

1921

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1922

MUNICIPAL HEALTH OFFICE

SINGAPORE, *26th April, 1922.*

TO

THE PRESIDENT,

MUNICIPAL COMMISSIONERS,

SINGAPORE.

SIR,

I have the honour to report as follows for the year 1921.

I. ZYMOTIC DISEASE

There were 891 cases notified compared with 895 in 1920 and with 1258 in 1919.

The following table shows the comparison between this year and the previous 10 years.

Year	Small-pox	Plague	Enteric Fever	Cholera	Diptheria	Erysipelas	Chicken-pox	Puerperal Fever	Paratyphoid Fever	Cerebro Spinal Fever	Tuberculosis	Total
1911	259	33	152	235	14	3	...	...	...	...	...	696
1912	59	38	126	121	13	2	...	...	...	...	...	359
1913	19	1	111	97	16	3	...	...	...	...	...	247
1914	13	15	109	274	10	1	...	...	...	...	...	422
1915	18	34	89	9	15	4	...	...	...	...	...	169
1916	70	23	103	13	30	4	127	2	13	...	...	385
1917	33	45	120	8	37	4	118	20	4	7	...	396
1918	11	176	287	0	31	4	107	8	2	5	104	735
1919	14	11	174	75	42	3	341	4	3	22	866	1258
1920	4	61	129	33	33	1	681	5	2	29	520	895
Average for 10 years.	50.0	43.7	140.0	86.5	24.1	2.9	...	...	...	...	...	...
1921	150	28	127	1	49	11	119	13	4	70	319	891

The following return shows the number of notifiable diseases for each month of the year:—

——	January	February	March	April	May	June	July	August	September	October	November	December	Total
Enteric Fever ...	18	11	13	12	11	10	5	9	11	10	9	9	128
Diphtheria ...	3	4	2	4	3	4	6	7	2	3	3	8	49
Chicken-pox ...	5	8	32	13	8	3	4	6	11	1	17	10	118
Puerperal Fever ...	2	...	1	...	1	2	...	4	...	1	2	...	13
Erysipelas ...	...	...	3	1	...	3	1	...	1	...	1	1	11
Cerebro-spinal Fever.	9	5	12	11	7	7	9	2	...	3	4	2	70
Tuberculosis ...	34	31	19	26	21	23	35	44	16	34	8	28	319
Paratyphoid Fever ...	...	...	2	...	...	...	...	...	...	1	...	...	3
Small-pox	...	...	...	...	2	2	2	11	18	56	25	34	150
Plague	...	1	5	7	2	4	2	1	2	1	2	1	27
Cholera	...	...	...	...	...	1	...	...	...	...	...	...	1
Total ...	71	60	89	74	55	59	64	84	61	110	71	93	891

The following table shows the incidence by nationalities:—

——	Europeans	Eurasians	Chinese	Malays	Indians	Others	Total
Enteric Fever	3	12	102	1	8	1	127
Diphtheria	12	11	22	...	3	1	49
Chicken-pox	2	5	23	7	82	...	119
Puerperal Fever	...	1	8	1	2	1	13
Erysipelas	2	...	7	1	1	...	11
Cerebro-spinal Fever ...	...	...	45	4	19	2	70
Tuberculosis	4	8	223	18	63	3	319
Paratyphoid Fever ...	...	1	1	1	...	1	4
Small-pox	6	6	31	67	38	2	150
Plague	...	...	23	...	4	1	28
Cholera	...	...	1	...	...	...	1
Total ...	29	44	486	100	220	12	891

Excluding Tuberculosis there was more infectious disease notified than in the last two years and only twice in the previous ten years were more cases reported.

The increase was due to Small-pox, Chicken-pox and Cerebro-spinal Fever.

Chicken-pox was distributed over the year with rather more in the first half than in the second.

Small-pox was prevalent in the latter half of the year the largest number of cases occurring in the last quarter.

Cerebro-Spinal Fever was distributed over the year but most cases occurred in the first half, and more cases were reported than in any previous year.

There were more Chinese attacked than any other nationality and in each individual disease the Chinese headed the list except in Small-pox where Malays had the largest number of cases, and in Chicken-pox where Indians had the most cases.

The outbreak of Smal-pox was noted for the large number of cases that were concealed. This naturally lead to great difficulty in dealing with it.

GENERAL

(1) Medical Inspection of Passengers-Passes were received for 117 passengers of whom 117 reported.

(2) Disinfection of infected articles.

There were 13,074 articles disinfected of an estimated value of $6,578.

Six articles were destroyed of an approximate value of $30. Compensation to the extent of $10 was claimed and paid.

The disinfector was used on 152 occasions and charged 159 times.

(3) Two hundred and five houses were disinfected, 281 patients removed to Hospital, 123 bodies buried under supervision and 26 bodies removed for post-mortem examination. 260 contacts were sent to St. John's Island.

139 houses were quarantined.

(4) There were 21 convictions for failing to report infectious disease the fines amounting to $505.

(5) There were 4190 persons under surveillance on account of infectious disease.

II MIDDLETON HOSPITAL

Five patients remained in hospital at the end of 1920 and 476 were admitted during the year—of these 364 were discharged 98 died and 25 remained at the end of the year.

The new Cholera Ward was completed, the new Plague and observation wards, boys quarters and alterations to Superintendent's bungalow were nearly completed.

III VACCINATION

The following vaccinations were reported.

——	Successful	Modified	Failed	Not seen	Total
Medicalmen ...	973	5	171	13	1,162
Municipal Vaccinators ...	19,814	22	308	151	20,295
Private Vaccinators ...	2,555	5	10	14	2,584
Total ...	23,342	32	489	178	24,041

IV. VITAL STATISTICS

The following statistics are calculated on an estimated mean annual population as ascertained from the census of 1921 made up as follows :—

——	Males	Females	Total
Europeans	3,347	1,720	5,067
Eurasians	2,204	2,362	4,566
Chinese	186,237	88,024	274,261
Malays	19,110	15,267	34,377
Indians	23,287	4,403	27,690
Others	3,352	2,148	5,500
Total ...	237,537	113,924	351,461

The following return gives the population, the number and rates per 1,000 of births, infantile deaths and deaths at all ages for the last 10 years :—

Year	Population	Births		Infantile Deaths		Deaths at all Ages.	
		No.	Rate	No.	Rate	No.	Rate
1911 ...	259,610	5,560	21.41	1,921	345.5	13,217	50.91
1912 ...	268,273	5,853	21.81	1,984	338.9	11,270	42.00
1913 ...	275,043	6,191	22.50	1,968	317.8	9,387	34.12
1914 ...	282,076	7,420	26.30	2,174	292.9	9,623	34.11
1915 ...	289,375	7,343	25.37	1,920	261.4	7,928	27.39
1916 ...	296,951	7,688	25.88	2,001	260.2	8,689	29.26
1917 ...	304,815	8,156	26.75	2,447	300.0	10,900	35.75
1918 ...	312,995	8,065	25.76	2,131	264.2	13,172	41.08
1919 ..	321,480	8,535	26.54	2,234	261.7	10,756	33.45
1920 ...	330,303	8,969	27.15	2,233	248.9	11,731	35.51
Average 10 years	294,092	7,378	24.04	2,101	289.1	10,667	36.35
1921 ...	351,461	10,237	29.12	2,383	232.7	11,947	33.99

The birth rate for 1921 the highest recorded was higher than the average for the previous 10 years by 5.08 per 1,000 while the infantile death rate was lower by 56.4 per 1,000 births and the general death rate lower by 2.36 per 1,000 than the average for the previous 10 years.

I. BIRTHS

The total number of births registered during the year was 10,237 compared with 8.969 in 1920 and 8,535 in 1919. There were 5,421 male and 4,816 female births.

The birth rate was 29.12 per mille as compared with 27.15 in 1920 and 26.54 in 1919.

The following return gives the number of births and the birth rate for each month of the year:—

Month	Births	Birth Rate	Month	Births	Birth Rate
January ...	813	28.74	July ...	796	28.13
February ...	713	25.20	August ...	838	29.62
March ...	877	31.00	September ...	879	31.07
April ..	890	31.46	October ...	959	33.90
May ...	865	30.57	November ...	943	33.33
June ...	798	28.20	December ...	866	30.61

The following return shows the number of births and the birth rate for each nationality:—

	Males	Females	Total	Birth Rate
Europeans	87	86	173	34.14
Eurasians	93	92	185	40.51
Chinese	4,176	3,613	7,789	28.39
Malays	656	614	1,270	36.94
Indians	321	319	640	23.11
Others	88	92	180	32.72
Total ...	5,421	4,816	10,237	29.12

There were 423 still births compared with 308 in 1920.

2. DEATHS

The total number of deaths for the year was 11,947 and the death rate 33.99 per 1,000 compared with 35.51 in 1920 and 33.45 in 1919.

631 persons died who had been less than 3 months resident in Singapore. Deducting these the death rate is reduced to 32.19 per 1,000.

The excess of deaths over births was 1,710 as against 2,762 in 1920.

The following return gives the number of deaths and the death rate for each month of the year :—

Month	Death	Death rate	Month	Death	Death rate
January ...	825	29.16	July ...	999	35.31
February ...	763	26.97	August ...	1,132	40.01
March ...	879	31.07	September ...	1,111	39.27
April ...	934	33.01	October ...	1,158	40.93
May ...	1,071	37.86	November ...	1,079	38.14
June ...	977	34.53	December ...	1,019	36.02

MORTALITY BY NATIONALITIES

The following return gives the number of deaths from each cause among males and females of the different nationalities. The classification followed is that of the International list (1912.)

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL	
I. General Diseases:—									
1. Enteric Fever	M	—	—	84	1	3	1	89	100
	F	—	2	5	2	2	—	11	
4. Malaria	M	4	1	902	153	160	7	1227	1497
	F	—	2	167	73	27	1	270	
5. Small Pox	M	1	—	9	1	9	1	21	33
	F	—	1	2	6	3	—	12	
6. Measles	M	—	—	—	—	—	—	0	2
	F	—	—	2	—	—	—	2	
8. Whooping Cough ...	M	—	—	2	—	—	—	2	4
	F	—	—	1	—	1	—	2	
9-A. Diphtheria	M	1	—	3	—	—	—	4	10
	F	—	—	5	—	1	—	6	
10. Influenza	M	1	1	67	21	25	4	119	203
	F	—	3	50	21	6	4	84	
12. Cholera	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
14. Dysentery	M	1	3	534	20	41	3	602	689
	F	—	4	61	12	10	—	87	
15. Plague	M	—	—	21	—	4	1	26	28
	F	—	—	2	—	—	—	2	
17. Leprosy	M	—	—	10	—	1	—	11	13
	F	—	—	2	—	—	—	2	
18. Erysipelas	M	—	—	2	—	—	—	2	3
	F	1	—	—	—	—	—	1	
20-A. Pyaemia	M	1	—	5	1	1	—	8	9
	F	—	—	1	—	—	—	1	
20-B. Septicaemia	M	—	2	46	1	5	—	54	68
	F	—	—	14	—	—	—	14	
24. Tetanus	M	—	—	52	3	2	—	57	105
	F	—	—	45	1	2	—	48	
26. Pellagra	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
27. Beri beri	M	1	—	728	37	20	5	791	886
	F	—	—	80	9	4	2	95	
28-A. Pulmonary Tuberculosis ...	M	1	8	256	11	40	12	328	421
	F	1	3	72	8	8	1	93	
28-B. Phthisis	M	—	3	801	81	39	2	926	1223
	F	—	1	228	51	16	1	297	
30. Tuberculous Meningitis ...	M	—	—	4	—	2	1	7	16
	F	—	—	8	1	—	—	9	
31-B. Other peritoneal and intestinal tubercle ...	M	—	—	1	1	—	1	3	6
	F	—	—	2	—	1	—	3	
32. Tuberculosis of spinal column	M	—	—	4	—	—	—	4	4
	F	—	—	—	—	—	—	0	
33. Tuberculosis of Joints ...	M	—	—	6	—	—	—	6	6
	F	—	—	—	—	—	—	0	
34-C. Cold Abscess	M	—	—	—	—	—	—	0	1
	F	—	—	1	—	—	—	1	
35. Disseminated tuberculosis ...	M	—	1	10	—	1	1	13	20
	F	—	—	4	3	—	—	7	
36-A. Rickets	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL	
37. Syphilis	M	—	—	114	6	8	1	129	148
	F	—	—	18	—	1	—	19	
38-B. Gonococcus infection ...	M	—	1	1	—	1	—	3	3
	F	—	—	—	—	—	—	0	
39. Cancer of the buccal cavity	M	—	—	—	—	—	—	0	2
	F	—	1	—	—	1	—	2	
40. Cancer of the stomach, liver, etc.	M	—	3	34	1	—	1	39	50
	F	1	—	6	1	—	3	11	
41. Cancer of the peritoneum, intestines and rectum ...	M	1	—	2	—	—	—	3	3
	F	—	—	—	—	—	—	0	
42. Cancer of the female genital organs	F	2	—	9	—	—	—	11	11
43. Cancer of the breast ...	F	—	1	4	1	—	—	6	6
44. Cancer of the skin ...	M	1	—	1	—	1	—	3	4
	F	—	—	—	—	1	—	1	
45. Cancer of other or unspecified organs	M	1	—	8	1	—	—	10	13
	F	—	—	2	1	—	—	3	
46-C. Other tumours	M	—	—	1	—	—	—	1	3
	F	—	—	2	—	—	—	2	
47. Rheumatic fever	M	—	—	3	—	1	—	4	6
	F	—	—	1	—	1	—	2	
48-A. Chronic Rheumatism ...	M	—	—	22	3	—	—	25	39
	F	—	—	11	3	—	—	14	
49. Scurvy	M	—	1	—	—	—	—	1	1
	F	—	—	—	—	—	—	0	
50. Diabetes	M	—	3	1	1	1	—	6	11
	F	—	—	4	1	—	—	5	
53-A. Leucocythaemia ...	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
54. Anaemia	M	1	—	17	1	1	—	20	27
	F	—	—	4	2	1	—	7	
55-C. Haemophilia	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
55-D. Other diseases included under 55	M	—	—	4	1	—	—	5	7
	F	—	—	2	—	—	—	2	
56. Alcoholism (Acute or Chronic)	M	2	—	1	—	—	—	3	3
	F	—	—	—	—	—	—	0	
									5689
II. Diseases of the Nervous System and of the Organs of Special Sense:—									
60. Encephalitis	M	1	—	3	1	1	—	6	6
	F	—	—	—	—	—	—	0	
61-A. Cerebro spinal fever ...	M	—	—	25	4	13	—	42	44
	F	—	—	1	—	1	—	2	
61-C. Meningitis—other forms ...	M	—	—	16	2	4	2	24	27
	F	—	—	3	—	—	—	3	
62. Locomotor Ataxy ...	M	—	—	3	—	—	—	3	4
	F	—	—	1	—	—	—	1	
63-A. Diseases formerly classed to "Other nervous affections"	M	—	1	1	—	—	—	2	2
	F	—	—	—	—	—	—	0	

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL	
63-B. Other disease of the spinal cord	M	—	—	4	—	—	—	4	4
	F	—	—	—	—	—	—	0	
64-A. Apoplexy	M	1	1	5	—	—	2	9	15
	F	—	—	5	1	—	—	6	
64-B. Oedema of Brain ...	M	—	—	3	—	—	—	3	5
	F	—	—	—	—	2	—	2	
64-E. Cerebral haemorrhage ...	M	2	—	25	3	3	—	33	39
	F	—	—	4	1	1	—	6	
65. Softening of brain ...	M	—	—	2	—	—	—	2	2
	F	—	—	—	—	—	—	0	
66-A. Hemiplegia	M	—	—	7	2	4	—	13	24
	F	—	—	9	1	—	1	11	
66-B. Paraplegia	M	—	—	9	4	2	—	15	20
	F	—	—	2	2	1	—	5	
66-C. Other forms of paralysis ...	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
67. General paralysis of the insane	M	1	—	10	2	—	—	13	13
	F	—	—	—	—	—	—	0	
68. Other forms of mental alienation	M	—	—	2	—	—	—	2	3
	F	—	—	1	—	—	—	1	
69. Epilepsy	M	—	—	1	—	—	—	1	2
	F	—	—	1	—	—	—	1	
71-B. Infantile convulsions ...	M	—	6	255	103	26	4	394	708
	F	—	1	205	90	17	1	314	
73-B. Neuritis	M	1	—	2	1	3	1	8	23
	F	1	—	2	10	2	—	15	
74-C. Cerebral tumour ...	M	—	—	1	1	—	—	2	2
	F	—	—	—	—	—	—	0	
74-D. Other diseases of the nervous system	M	—	—	—	—	—	—	0	1
	F	—	—	1	—	—	—	1	
75. Diseases of the eyes and annexa	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
76-A. Mastoid abscess ...	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
76-B. Other diseases of the ears	M	—	—	—	—	—	—	0	2
	F	1	—	1	—	—	—	2	
									949
III. Diseases of the Circulatory System:—									
77. Pericarditis	M	1	—	19	—	1	—	21	22
	F	—	—	1	—	—	—	1	
78-A. Acute Myocarditis ...	M	2	—	—	—	—	2	4	4
	F	—	—	—	—	—	—	0	
78-B. Infective Endocarditis ...	M	—	—	1	—	—	—	1	3
	F	—	1	1	—	—	—	2	
78-C. Other Acute Endocarditis	M	1	—	7	—	—	—	8	9
	F	—	—	1	—	—	—	1	
79. (A.B.C.) Organic disease of heart—									
A. Valvular disease ...	M	—	—	39	3	8	—	50	72
	F	—	2	15	2	2	1	22	
B. Fatty degeneration of heart	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL	
C. Other organic disease of heart	M	2	—	11	1	3	—	17	17
	F	—	—	—	—	—	—	0	
80. Angina Pectoris	M	1	—	—	—	—	—	1	1
	F	—	—	—	—	—	—	0	
81 (A.B C.) Diseases of the arteries, Atheroma, Aneurism, etc.—									
A. Aneurism	M	—	—	12	—	2	—	14	14
	F	—	—	—	—	—	—	0	
B. Arterial Sclerosis ...	M	—	—	5	—	—	—	5	9
	F	1	—	3	—	—	—	4	
C. Other diseases of arteries	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
82. (A.B.) Embolism and Thrombosis—									
A. Cerebral Embolism and Thrombosis ...	M	—	—	4	—	—	—	4	4
	F	—	—	—	—	—	—	0	
B. Other Embolism and Thrombosis ...	M	—	—	—	—	—	—	0	1
	F	—	—	1	—	—	—	1	
83-B. Varix	M	—	—	—	1	—	—	1	1
	F	—	—	—	—	—	—	0	
IV. Diseases of the Respiratory System:—									159
87-B. Laryngitis	M	—	—	3	—	—	—	3	3
	F	—	—	—	—	—	—	0	
89 and 90 (A.B.) Bronchitis—									
A. Bronchiectasis, Bronchial Catarrh, etc. ...	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
B. Other Bronchitis ...	M	—	1	115	24	6	1	147	284
	F	—	2	95	26	12	2	137	
91. Broncho-pneumonia ...	M	—	1	181	24	26	1	233	403
	F	1	6	144	5	11	3	170	
92. (A.B.) Pneumonia, lobar and undefined—									
A. Lobar pneumonia ...	M	3	1	172	29	92	2	299	349
	F	—	—	32	11	7	—	50	
B. Pneumonia (type not stated)	M	2	5	323	28	35	2	395	519
	F	1	1	89	16	14	3	124	
93 (A.B.) Pleurisy—									
A. Empyema	M	—	—	11	2	3	—	16	16
	F	—	—	—	—	—	—	0	
B. Other pleurisy ...	M	—	—	3	—	2	—	5	6
	F	—	—	1	—	—	—	1	
94-B. Pulmonary oedema ...	M	—	—	1	—	1	—	2	2
	F	—	—	—	—	—	—	0	
94-C. Hypostatic pneumonia ...	M	—	—	—	—	—	—	0	1
	F	—	—	1	—	—	—	1	
95. Gangrene of lung ...	M	—	—	7	—	—	—	7	8
	F	—	—	1	—	—	—	1	
96. Asthma	M	—	—	21	3	—	1	25	39
	F	—	—	9	4	—	1	14	

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL	
98-B. Other diseases of the respiratory system ...	M	—	—	1	1	—	—	2	3
	F	—	—	1	—	—	—	1	
									1634
V. Diseases of the Digestive System:—									
99-A. Diseases of the teeth and gums	M	—	—	6	—	—	—	6	10
	F	—	—	4	—	—	—	4	
100-A. Tonsillitis	M	1	—	1	—	—	—	2	3
	F	—	—	1	—	—	—	1	
100-C. Other diseases of pharynx	M	—	—	4	—	—	—	4	4
	F	—	—	—	—	—	—	0	
101. Diseases of oesophagus ...	M	—	—	1	—	1	—	2	2
	F	—	—	—	—	—	—	0	
102. Perforating ulcer of stomach	M	—	—	20	1	—	—	21	22
	F	—	—	1	—	—	—	1	
103-A. Inflammation of the stomach	M	—	—	15	14	3	1	33	70
	F	—	1	16	15	4	1	37	
103-B. Other diseases of stomach	M	—	—	8	—	—	—	8	16
	F	—	—	8	—	—	—	8	
104-A. & 105-A. Infective enteritis	M	—	—	5	1	1	—	7	11
	F	—	—	1	2	1	—	4	
104-B. & 105-B. Diarrhoea (not returned as infective) ...	M	—	3	89	6	4	1	103	174
	F	—	3	64	1	3	—	71	
104-C. & 105-C. Enteritis (not returned as infective) ...	M	—	1	7	—	1	1	10	19
	F	—	2	6	1	—	—	9	
104-D. & 105-D. Gastro-enteritis...	M	1	6	122	13	9	3	154	344
	F	—	4	161	17	8	—	190	
104-G. & 105-G. Ulceration of intestines	M	—	—	2	—	—	—	2	2
	F	—	—	—	—	—	—	0	
104-H. & 105-H. Duodenal ulcer...	M	—	—	4	—	1	—	5	5
	F	—	—	—	—	—	—	0	
106. Ankylostomiasis ...	M	—	—	32	4	19	—	55	61
	F	—	—	1	—	5	—	6	
107. Other intestinal parasites ...	M	—	—	1	—	—	—	1	3
	F	—	—	2	—	—	—	2	
108. Appendicitis	M	—	—	6	—	2	2	10	18
	F	—	—	6	1	—	1	8	
109. (A.B.) Hernia, intestinal obstruction—									
A. Hernia	M	—	—	12	3	—	—	15	16
	F	—	—	—	1	—	—	1	
B. Intestinal obstruction ...	M	2	—	18	1	3	—	24	31
	F	1	—	5	—	—	1	7	
110. Other diseases of the intestines	M	—	—	2	—	1	—	3	6
	F	—	1	1	—	1	—	3	
113-A. Cirrhosis of liver (not returned as alcoholic) ...	M	—	—	47	4	3	—	54	66
	F	—	—	11	1	—	—	12	
115. Other diseases of the liver...	M	2	—	21	—	4	1	28	38
	F	—	—	9	—	1	—	10	
116-B. Other diseases of the spleen	M	—	—	11	—	—	—	11	11
	F	—	—	—	—	—	—	0	

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL	
117. Peritonitis (cause unstated)	M	—	1	19	2	2	—	24	28
	F	—	—	3	—	—	1	4	
VI. Non-Venereal Diseases of the Genito-Urinary System and Annexa:—									960
119. Acute nephritis ...	M	—	—	32	1	4	2	39	49
	F	—	—	8	1	1	—	10	
120-A. Bright's disease ...	M	1	1	154	2	9	—	167	237
	F	—	1	56	8	4	1	70	
120-B. Nephritis (unqualified and uraemia)	M	—	—	50	4	6	—	60	77
	F	—	—	15	2	—	—	17	
122-D. Other diseases of kidney and annexa	M	—	—	2	—	1	—	3	5
	F	—	1	1	—	—	—	2	
124. Diseases of the bladder ...	M	—	—	8	1	—	—	9	10
	F	—	—	—	1	—	—	1	
125-A. Perineal abscess ...	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
125-B. Other diseases of urethra etc.	M	—	1	3	—	1	—	5	5
	F	—	—	—	—	—	—	0	
127. Non-venereal diseases of male genital organs ...	M	—	—	2	—	—	—	2	2
128-B. Other uterine haemorrhage	F	—	—	1	—	—	—	1	1
129. Uterine tumour (non cancerous)	F	—	1	2	—	—	—	3	3
131. Ovarian Cyst, tumour (non cancerous)	F	—	—	—	1	—	—	1	1
132-B. Other diseases of the female genital organs ...	F	—	—	2	—	—	1	3	3
VII. The Puerperal State:—									395
134-A. Abortion	F	—	—	3	—	—	—	3	3
134-B. Haemorrhage of pregnancy	F	—	—	4	—	—	—	4	4
134-C. Uncontrollable vomiting ...	F	—	—	1	—	—	—	1	1
134-D. Ectopic gestation ...	F	1	—	—	—	—	—	1	1
135. Puerperal haemorrhage ...	F	1	1	9	3	3	—	17	17
136. Other accidents of child birth	F	2	1	9	3	2	—	17	17
137. Puerperal fever	F	—	1	7	1	1	—	10	10
138-C. Puerperal convulsions ...	F	—	—	4	1	1	—	6	6
VIII. Diseases of the Skin and of the Cellular Tissue:—									59
142-B. Noma, gangrene of mouth	M	—	—	3	—	—	—	3	6
	F	—	—	2	1	—	—	3	

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL	
142-C. Noma pudendi ...	M	—	—	4	1	—	—	5	5
	F	—	—	—	—	—	—	0	
142-D. Other gangrene ...	M	—	—	19	1	—	—	20	25
	F	—	—	3	2	—	—	5	
143. Carbuncle, boil ...	M	—	—	3	—	1	1	5	6
	F	—	—	1	—	—	—	1	
144-A. Phlegmon	M	1	—	14	1	2	—	18	20
	F	—	—	2	—	—	—	2	
144-B. Acute abscess ...	M	—	—	5	1	—	—	6	12
	F	—	—	5	1	—	—	6	
145-A. Ulcer, bed sore ...	M	—	—	17	—	2	—	19	21
	F	—	—	1	1	—	—	2	
145-C. Pemphigus	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
									96
IX. Diseases of the Bones and of the Organs of Locomotion:—									
146. Diseases of the bones ...	M	—	—	2	—	—	—	2	3
	F	—	—	1	—	—	—	1	
147. Diseases of the joints ...	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
148. Amputations	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
									5
X. Malformations:—									
150-A. Congenital hydrocephalus	M	—	—	3	1	—	—	4	6
	F	—	—	2	—	—	—	2	
150-C. Congenital malformation of heart	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
150-D. Other Congenital malformation	M	—	—	3	—	—	—	3	5
	F	1	—	1	—	—	—	2	
									12
XI. Diseases of Early Infancy:—									
151-A. Premature Birth ...	M	2	—	59	8	9	—	78	147
	F	—	2	58	5	3	1	69	
151-B. Infantile atrophy, debility and marasmus ...	M	—	2	85	20	12	—	119	210
	F	—	—	63	25	2	1	91	
151-C. Icterus neonatorum ...	M	1	—	2	—	—	—	3	3
	F	—	—	—	—	—	—	0	
152-B. Atelectasis	M	—	—	2	1	—	—	3	5
	F	—	—	2	—	—	—	2	
152-C. Injuries at birth ...	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
									366
XII. Old Age:—									
154-B. Senile Decay	M	1	1	122	28	8	—	160	307
	F	—	2	96	38	7	4	147	
									307
XIII. Affections Produced by External Causes:—									
157. Suicide by hanging or strangulation ...	M	—	—	37	1	1	—	39	46
	F	—	—	7	—	—	—	7	
160. Suicide by cutting or piercing instruments ...	M	1	—	2	—	—	—	3	3
	F	—	—	—	—	—	—	0	
164. Poisoning by food ...	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL	
165. Other acute poisonings ...	M	—	—	1	—	1	—	2	3
	F	—	—	1	—	—	—	1	
167. Burns	M	—	—	9	—	—	—	9	13
	F	—	—	3	1	—	—	4	
168. Absorption of deleterious gases	M	—	—	3	—	—	—	3	3
	F	—	—	—	—	—	—	0	
169. Accidental drowning ...	M	—	—	22	1	2	1	26	34
	F	—	—	7	1	—	—	8	
170. Injury by firearms ...	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
171. Injury by cutting or piercing instruments	M	—	—	—	—	1	—	1	2
	F	—	—	—	1	—	—	1	
175. Injury by other crushing ...	M	—	—	1	—	1	—	2	2
	F	—	—	—	—	—	—	0	
179. Effects of heat	M	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	0	
183. Homicide by cutting or piercing instruments ...	M	—	—	30	1	1	—	32	33
	F	—	—	1	—	—	—	1	
185. Fractures	M	—	—	36	3	6	—	45	49
	F	—	—	4	—	—	—	4	
186. Other violence	M	2	—	30	3	6	—	41	44
	F	—	1	—	—	2	—	3	
XIV. Ill-Defined Causes:—									235
187. Dropsy	M	—	—	79	3	—	—	82	109
	F	—	—	25	2	—	—	27	
189-A. Heart failure	M	—	—	1	—	—	—	1	2
	F	—	1	—	—	—	—	1	
189-B. Atrophy, debility, marasmus	M	—	—	35	7	7	—	49	104
	F	—	—	36	14	5	—	55	
189-D. Pyrexia	M	1	3	231	11	4	—	250	484
	F	—	—	223	8	2	1	234	
189-E. Other ill-defined deaths ...	M	—	1	266	19	24	—	310	334
	F	—	—	22	1	1	—	24	
189-F. Cause not specified ...	M	—	1	38	—	2	—	41	48
	F	—	—	6	—	1	—	7	
									1081
Total males ...	—	51	64	6954	752	766	72	8659	11947
Total females ...	—	16	54	2440	526	214	38	3288	
Grand total ...	—	67	118	9394	1278	980	110	—	11947

The death rates for the different nationalities were:—

	1921			1920		
	Males	Females	Total	Males	Females	Total
Europeans	15.23	9.30	13.22	11.82	9.49	11.18
Eurasians	29.03	22.86	25.84	23.90	18.90	21.28
Chinese	37.33	27.71	34.25	40.16	30.42	36.87
Malays	39.35	34.45	37.17	52.17	36.52	40.59
Indians	32.89	48.60	35.39	24.47	33.10	14.64
Others	21.47	17.69	20.00	31.62	25.77	31.87
Total ...	36.45	28.86	33.99	38.00	30.61	35.51

The following return gives the death rates per 1,000 of each nationality from each group of diseases:—

	Europeans	Eurasians	Chinese	Malays	Indians	Others
General Diseases	4.3	9.8	16.3	15.7	12.6	9.6
Diseases of Nervous System ...	1.5	1.9	2.2	6.3	2.8	2.1
,, Circulatory System ...	1.5	0.6	0.4	0.2	0.5	0.5
,, Respiratory System ...	1.3	3.7	4.4	5.0	7.5	2.9
,, Digestive System	1.3	4.8	2.7	2.5	2.7	2.3
,, Genito Urinary System ...	0.1	1.0	1.2	0.6	0.9	0.9
,, Early Infancy	0.5	0.9	0.9	1.7	0.9	0.3
Ill—defined causes	0.1	1.3	3.5	1.8	1.6	0.1

MORTALITY IN RELATION TO AGE AND SEX

The following return shows the number of deaths from each cause in the different age periods for each sex:—

DISEASES	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
I. General Diseases:—															
1. Enteric Fever	M	—	—	—	1	1	4	19	52	10	1	—	1	89	100
	F	—	—	—	1	1	2	2	2	2	1	—	—	11	
4. Malaria	M	1	1	14	18	27	68	169	427	278	165	58	1	1227	1497
	F	2	4	12	17	24	23	34	48	53	35	18	—	270	
5. Small Pox	M	2	1	—	—	—	—	1	9	4	4	—	—	21	33
	F	—	2	—	—	—	—	2	2	4	1	1	—	12	
6. Measles	M	—	—	—	—	—	—	—	—	—	—	—	—	0	2
	F	—	—	2	—	—	—	—	—	—	—	—	—	2	
8. Whooping Cough ...	M	—	1	1	—	—	—	—	—	—	—	—	—	2	4
	F	—	2	—	—	—	—	—	—	—	—	—	—	2	
9-A. Diphtheria	M	—	—	4	—	—	—	—	—	—	—	—	—	4	10
	F	—	—	2	4	—	—	—	—	—	—	—	—	6	
10. Influenza	M	—	7	11	6	4	8	15	22	25	12	9	—	119	203
	F	—	4	8	3	4	4	10	22	9	6	14	—	84	
12. Cholera	M	—	—	—	—	—	—	—	—	—	1	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
14. Dysentery	M	1	5	9	4	2	13	33	168	179	129	60	—	602	689
	F	—	2	6	2	3	6	7	19	17	11	13	—	87	
15. Plague	M	—	—	—	—	2	3	3	11	3	3	1	—	26	28
	F	—	—	—	—	—	—	1	—	—	—	1	—	2	
17. Leprosy	M	—	—	—	—	—	1	1	4	1	2	2	—	11	13
	F	—	—	—	—	—	—	1	1	—	—	—	—	2	
18. Erysipelas	M	—	—	—	—	—	—	—	—	1	—	1	—	2	3
	F	—	—	—	—	—	—	—	—	—	—	1	—	1	
20-A. Pyaemia	M	—	1	1	—	—	—	—	4	1	1	—	—	8	9
	F	—	1	—	—	—	—	—	—	—	—	—	—	1	
20-B. Septicaemia	M	1	3	—	—	—	—	2	16	16	6	10	—	54	68
	F	1	9	1	—	—	—	—	—	1	—	2	—	14	
24. Tetanus	M	50	—	—	—	1	—	3	—	2	1	—	—	57	105
	F	46	—	—	1	—	1	—	—	—	—	—	—	48	
26. Pellagra	M	—	—	—	—	—	—	1	—	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
27. Beri beri	M	—	1	—	—	1	27	111	252	239	131	29	—	791	886
	F	—	2	—	—	3	8	14	32	20	13	3	—	95	
28-A. Pulmonary Tuberculosis ...	M	—	—	2	—	3	8	32	91	88	74	30	—	328	421
	F	—	—	3	—	3	3	7	27	22	22	6	—	93	
28-B. Phthisis	M	—	—	1	3	2	7	59	236	253	248	117	—	926	1223
	F	—	—	2	3	6	4	37	86	78	52	29	—	297	
30. Tuberculous Meningitis ...	M	—	—	3	—	—	—	—	1	3	—	—	—	7	16
	F	—	2	4	2	1	—	—	—	—	—	—	—	9	
31-B. Other peritoneal and intestinal tubercle ...	M	—	—	1	—	—	—	—	1	—	1	—	—	3	6
	F	—	—	—	—	2	1	—	—	—	—	—	—	3	
32. Tuberculosis of spinal column	M	—	—	1	—	—	—	—	2	1	—	—	—	4	4
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
33. Tuberculosis of Joints ...	M	—	—	—	3	—	—	—	2	—	—	1	—	6	6
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
34-C. Cold Abscess	M	—	—	—	—	—	—	—	—	—	—	—	—	0	1
	F	1	—	—	—	—	—	—	—	—	—	—	—	1	
35. Disseminated tuberculosis ...	M	—	1	1	2	—	—	—	5	1	2	1	—	13	20
	F	—	—	4	2	—	—	—	1	—	—	—	—	7	
36-A. Rickets	M	—	1	—	—	—	—	—	—	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	

DISEASES	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
37. Syphilis	M	11	2	1	—	—	1	3	34	40	30	7	—	129	148
	F	13	3	—	—	—	—	2	1	—	—	—	—	19	
38-B. Gonococcus infection ...	M	—	—	—	—	—	—	1	2	—	—	—	—	3	3
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
39. Cancer of the buccal cavity	M	—	—	—	—	—	—	—	—	—	—	—	—	0	2
	F	—	—	—	—	—	—	—	—	—	—	2	—	2	
40. Cancer of the stomach, liver, etc.	M	—	—	—	—	—	—	—	2	11	18	8	—	39	50
	F	—	—	—	—	—	—	—	—	2	5	4	—	11	
41. Cancer of the peritoneum, intestines and rectum ...	M	—	—	—	—	—	—	1	2	—	—	—	—	3	3
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
42. Cancer of the female genital organs	F	—	—	—	—	—	—	—	1	4	5	1	—	11	11
43. Cancer of breast ...	F	—	—	—	—	—	—	—	1	—	4	1	—	6	6
44. Cancer of skin ...	M	—	—	—	—	—	—	—	—	—	1	2	—	3	4
	F	—	—	—	—	—	—	—	—	—	1	—	—	1	
45. Cancer of other or unspecified organs	M	1	—	—	—	—	—	1	2	1	3	2	—	10	13
	F	—	—	—	1	—	—	—	—	1	—	1	—	3	
46-C. Other tumours	M	—	—	—	—	—	—	—	—	—	1	—	—	1	3
	F	—	—	—	—	—	—	—	2	—	—	—	—	2	
47. Rheumatic fever	M	—	—	—	—	—	2	—	1	—	—	1	—	4	6
	F	—	—	—	—	—	—	1	—	—	1	—	—	2	
48-A. Chronic Rheumatism ...	M	—	—	—	—	—	—	—	2	—	—	23	—	25	39
	F	—	—	—	—	—	—	—	—	—	—	14	—	14	
49. Scurvy	M	—	1	—	—	—	—	—	—	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
50. Diabetes	M	—	—	—	—	—	—	—	—	—	4	2	—	6	11
	F	—	—	—	—	—	—	—	—	—	4	1	—	5	
53-A. Leucocythaemia ...	M	—	—	—	—	—	—	—	1	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
54. Anaemia	M	—	1	—	—	1	1	—	7	2	6	2	—	20	27
	F	—	—	1	—	—	—	1	3	1	1	—	—	7	
55-C. Haemophilia	M	—	—	—	—	—	—	—	1	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
55-D. Other disease included under 55	M	1	3	—	—	—	—	—	1	—	—	—	—	5	7
	F	—	1	1	—	—	—	—	—	—	—	—	—	2	
56. Alcoholism (Acute or Chronic)	M	—	—	—	—	—	—	—	1	1	1	—	—	3	3
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
															5689
II. Diseases of the Nervous System and of the Organs of Special Sense:—															
60. Encephalitis	M	—	—	—	—	—	—	2	4	—	—	—	—	6	6
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
61-A. Cerebro spinal fever ...	M	—	—	—	1	—	3	7	18	9	3	1	—	42	44
	F	—	—	—	—	—	1	—	1	—	—	—	—	2	
61-C. Meningitis—other forms ...	M	2	—	—	—	—	—	1	7	9	2	2	1	24	27
	F	—	2	—	—	—	1	—	—	—	—	—	—	3	
62. Locomotor Ataxy ...	M	—	—	—	—	—	—	—	1	—	1	1	—	3	4
	F	—	—	—	—	—	—	—	—	—	—	1	—	1	
63-A. Diseases formerly classed to "Other nervous affections"	M	—	—	—	—	1	—	—	—	—	—	1	—	2	2
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	

DISEASES	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
63-B. Other disease of the spinal cord	M	—	1	—	—	—	—	—	1	—	1	1	—	4	4
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
64-A. Apoplexy	M	—	—	—	—	—	—	—	2	—	2	5	—	9	15
	F	—	—	—	—	—	—	—	—	1	—	5	—	6	
64-B. Oedema of Brain ...	M	—	—	—	—	—	—	—	—	1	1	—	—	3	5
	F	—	—	1	—	—	1	—	—	—	—	—	—	2	
64-E. Cerebral haemorrhage ...	M	—	1	—	—	—	1	—	4	9	7	11	—	33	39
	F	—	—	—	—	—	—	—	1	—	1	4	—	6	
65. Softening of brain ...	M	—	—	—	—	—	—	—	—	2	—	—	—	2	2
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
66-A. Hemiplegia	M	—	—	—	—	—	—	—	1	4	3	5	—	13	24
	F	—	—	—	—	—	—	—	—	1	1	9	—	11	
66-B. Paraplegia	M	—	—	—	—	—	2	1	5	1	3	3	—	15	20
	F	—	—	—	—	—	—	—	—	2	1	2	—	5	
66-C. Other forms of paralysis ...	M	—	—	—	—	—	—	—	—	—	1	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
67. General paralysis of the insane	M	—	—	—	—	—	—	—	2	7	4	—	—	13	13
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
68. Other forms of mental alienation	M	—	—	—	—	—	—	—	1	1	—	—	—	2	3
	F	—	—	—	—	—	—	—	—	1	—	—	—	1	
69. Epilepsy	M	—	—	—	—	—	—	1	—	—	—	—	—	1	2
	F	—	—	—	—	—	—	1	—	—	—	—	—	1	
71-B. Infantile convulsions ...	M	165	154	74	1	—	—	—	—	—	—	—	—	394	708
	F	113	120	77	4	—	—	—	—	—	—	—	—	314	
73-B. Neuritis	M	—	—	—	—	—	—	1	1	3	2	1	—	8	23
	F	—	—	—	—	1	1	5	3	2	2	1	—	15	
74-C. Cerebral tumour ...	M	—	—	—	—	—	—	—	1	1	—	—	—	2	2
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
74-D. Other diseases of the nervous system	M	—	—	—	—	—	—	—	—	—	—	—	—	0	1
	F	—	—	1	—	—	—	—	—	—	—	—	—	1	
75. Diseases of the eyes and annexa	M	—	1	—	—	—	—	—	—	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
76-A. Mastoid abscess ...	M	—	—	—	—	1	—	—	—	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
76-B. Other diseases of the ears	M	—	—	—	—	—	—	—	—	—	—	—	—	0	2
	F	1	—	—	—	—	—	—	1	—	—	—	—	2	
III. Diseases of the Circulatory System:—															949
77. Pericarditis	M	—	—	—	—	—	—	3	12	5	1	—	—	21	22
	F	—	—	—	—	—	—	—	—	1	—	—	—	1	
78-A. Acute Myocarditis ...	M	—	—	—	—	—	—	—	1	1	1	1	—	4	4
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
78-B. Infective Endocarditis ...	M	—	—	—	—	—	—	—	—	1	—	—	—	1	3
	F	—	—	—	—	—	—	—	1	—	—	1	—	2	
78-C. Other Acute Endocarditis	M	—	—	—	—	—	—	—	3	1	3	1	—	8	9
	F	—	—	—	—	—	—	—	—	—	1	—	—	1	
79. (A.B.C.) Organic disease of heart—															
A. Valvular disease ...	M	—	—	—	—	—	—	5	11	12	13	9	—	50	72
	F	—	—	—	—	—	1	2	3	5	7	4	—	22	
B. Fatty degeneration of heart	M	—	—	—	—	—	—	—	1	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	

DISEASES	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
C. Other organic disease of heart	M	—	—	—	—	—	—	1	1	6	7	2	—	17	17
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
80. Angina Pectoris	M	—	—	—	—	—	—	—	—	—	—	1	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
81 (A.B C.) Diseases of the arteries, Atheroma, Aneurism, etc.—															
A. Aneurism	M	—	—	—	—	—	—	—	3	6	4	—	1	14	14
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
B. Arterial Sclerosis ...	M	—	—	—	—	—	—	—	—	—	—	5	—	5	9
	F	—	—	—	—	—	—	—	—	—	1	3	—	4	
C. Other diseases of arteries	M	—	—	—	—	—	—	—	—	—	1	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
82. (A.B.) Embolism and Thrombosis—															
A. Cerebral Embolism and Thrombosis ...	M	—	—	—	—	—	—	—	2	1	—	1	—	4	4
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
B. Other Embolism and Thrombosis ...	M	—	—	—	—	—	—	—	—	—	—	—	—	0	1
	F	—	—	—	—	—	—	—	1	—	—	—	—	1	
83-B. Varix	M	—	—	—	—	—	—	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
IV. Diseases of the Respiratory System:—															159
87-B. Laryngitis	M	—	—	—	—	—	—	—	2	1	—	—	—	3	3
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
89 and 90 (A.B.) Bronchitis—															
A. Bronchiectasis, Bronchial Catarrh, etc. ...	M	—	—	—	—	—	—	1	—	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
B. Other Bronchitis ...	M	15	56	42	5	1	—	—	3	4	5	16	—	147	284
	F	13	53	37	7	1	—	—	5	1	2	18	—	137	
91. Broncho-pneumonia ...	M	25	47	57	23	3	—	10	20	26	14	8	—	233	403
	F	24	55	63	19	1	1	2	2	—	—	3	—	170	
92. (A.B.) Pneumonia, lobar and undefined—															
A. Lobar pneumonia ...	M	3	10	11	3	6	10	30	107	61	41	16	1	299	349
	F	2	13	7	2	4	1	7	4	5	2	3	—	50	
B. Pneumonia (type not stated)	M	7	24	40	22	13	21	33	77	69	59	30	—	395	519
	F	3	12	22	19	9	10	10	16	6	11	6	—	124	
93 (A.B.) Pleurisy—															
A. Empyema	M	—	—	—	—	—	—	2	6	5	2	1	—	16	16
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
B. Other pleurisy ...	M	—	—	—	—	—	—	—	2	—	3	—	—	5	6
	F	—	—	—	—	1	—	—	—	—	—	—	—	1	
94-B. Pulmonary oedema ...	M	—	—	—	—	—	—	—	—	1	1	—	—	2	2
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
94-C. Hypostatic pneumonia ...	M	—	—	—	—	—	—	—	—	—	—	—	—	0	1
	F	—	—	—	—	—	—	—	—	—	—	1	—	1	
95. Gangrene of lung ...	M	—	—	—	—	—	—	—	1	4	2	—	—	7	8
	F	—	—	—	—	—	—	—	1	—	—	—	—	1	
96. Asthma	M	—	—	—	—	—	—	—	—	2	6	17	—	25	39
	F	—	—	—	1	—	—	1	1	3	3	5	—	14	

DISEASES	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
98-B. Other diseases of the respiratory system ...	M	—	—	—	—	—	—	1	—	—	—	1	—	2	3
	F	—	—	—	1	—	—	—	—	—	—	—	—	1	
															1634
V. Diseases of the Digestive System :—															
99-A. Diseases of the teeth and gums	M	3	—	—	—	—	—	1	1	1	—	—	—	6	10
	F	2	1	—	—	—	—	—	—	—	—	1	—	4	
100-A. Tonsillitis	M	—	—	—	—	—	—	—	1	—	1	—	—	2	3
	F	—	—	—	1	—	—	—	—	—	—	—	—	1	
100-C. Other diseases of pharynx	M	—	—	—	—	—	—	—	2	2	—	—	—	4	4
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
101. Diseases of oesophagus ...	M	—	—	—	—	—	—	—	—	1	1	—	—	2	2
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
102. Perforating ulcer of stomach	M	—	—	—	—	—	—	3	3	2	9	4	—	21	22
	F	—	—	—	—	—	—	—	1	—	—	—	—	1	
103-A. Inflammation of the stomach	M	15	15	2	—	—	—	—	—	1	—	—	—	33	70
	F	16	9	5	—	—	1	—	—	1	—	5	—	37	
103-B. Other diseases of stomach	M	—	—	—	—	—	—	—	1	1	2	4	—	8	16
	F	—	—	—	—	—	—	—	1	1	1	5	—	8	
104-A. & 105-A. Infective enteritis	M	1	4	2	—	—	—	—	—	—	—	—	—	7	11
	F	—	3	1	—	—	—	—	—	—	—	—	—	4	
104-B. & 105-B. Diarrhoea (not returned as infective) ...	M	52	37	9	1	—	—	—	—	—	2	2	—	103	174
	F	27	25	11	2	—	—	—	—	—	2	4	—	71	
104-C. & 105-C. Enteritis (not returned as infective) ...	M	5	2	1	2	—	—	—	—	—	—	—	—	10	19
	F	3	3	3	—	—	—	—	—	—	—	—	—	9	
104-D. & 105-D. Gastro-enteritis...	M	42	77	23	4	3	—	1	1	2	—	1	—	154	344
	F	59	85	38	3	—	1	—	2	1	—	1	—	190	
104-G. & 105-G. Ulceration of intestines	M	—	—	—	—	—	—	—	—	—	2	—	—	2	2
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
104-H. & 105-H. Duodenal ulcer...	M	—	—	—	—	—	—	—	—	2	3	—	—	5	5
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
106. Ankylostomiasis ...	M	—	—	—	—	—	2	5	18	15	11	4	—	55	61
	F	—	—	—	—	1	—	—	2	2	—	1	—	6	
107. Other intestinal parasites ...	M	—	—	1	—	—	—	—	—	—	—	—	—	1	3
	F	—	—	1	1	—	—	—	—	—	—	—	—	2	
108. Appendicitis	M	—	—	—	—	—	1	1	3	2	1	2	—	10	18
	F	—	—	—	—	—	1	1	3	—	3	—	—	8	
109. (A.B.) Hernia, intestinal obstruction—															
A. Hernia	M	—	—	—	—	—	—	1	4	4	3	3	—	15	16
	F	—	—	—	—	—	—	—	—	—	1	—	—	1	
B. Intestinal obstruction ...	M	5	3	—	2	—	—	2	3	4	3	2	—	24	31
	F	2	1	1	—	—	—	—	2	1	—	—	—	7	
110. Other diseases of the intestines	M	—	—	—	—	—	—	—	—	1	1	1	—	3	6
	F	—	1	—	—	—	—	1	—	—	—	1	—	3	
113-A. Cirrhosis of liver (not returned as alcoholic) ...	M	—	—	1	—	—	—	2	12	20	13	6	—	54	66
	F	—	1	—	—	—	—	—	4	1	4	2	—	12	
115. Other diseases of the liver...	M	3	—	—	—	—	1	3	9	3	8	1	—	28	38
	F	5	—	3	1	—	—	—	1	—	—	—	—	10	
116-B. Other diseases of the spleen	M	—	—	—	—	—	—	1	5	4	1	—	—	11	11
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	

DISEASES	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
117. Peritonitis (cause unstated)	M	—	—	—	—	1	1	2	11	5	4	—	—	24	28
	F	1	—	—	—	—	1	—	—	2	—	—	—	4	
VI. Non-Venereal Diseases of the Genito-Urinary System and Annexa:—															960
119. Acute nephritis ...	M	—	—	—	—	1	1	3	8	5	15	6	—	39	49
	F	—	—	1	—	—	—	3	2	2	—	2	—	10	
120-A. Bright's disease ...	M	—	1	—	1	—	5	7	29	27	47	50	—	167	237
	F	—	—	1	4	2	2	5	15	15	6	20	—	70	
120-B. Nephritis (unqualified and uraemia)	M	—	—	—	—	—	1	2	22	17	7	11	—	60	77
	F	—	—	1	—	1	2	—	3	1	4	5	—	17	
122-D. Other diseases of kidney and annexa	M	—	—	—	—	—	—	1	—	1	1	—	—	3	5
	F	—	—	—	—	1	—	—	—	1	—	—	—	2	
124. Diseases of the bladder ...	M	—	—	—	1	—	—	1	1	1	3	2	—	9	10
	F	—	—	—	—	—	—	—	1	—	—	—	—	1	
125-A. Perineal abscess ...	M	—	—	—	—	—	—	—	1	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
125-B. Other diseases of urethra etc.	M	—	—	—	—	—	—	—	2	1	2	—	—	5	5
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
127. Non-venereal diseases of male genital organs ...	M	—	—	—	—	—	—	—	1	1	—	—	—	2	2
128-B. Other uterine haemorrhage	F	—	—	—	—	—	—	—	—	—	1	—	—	1	1
129. Uterine tumour (non cancerous)	F	—	—	—	—	—	—	—	1	—	—	2	—	3	3
131. Ovarian Cyst, tumour (non cancerous)	F	—	—	—	—	—	—	—	2	—	—	—	—	2	2
132-B. Other diseases of the female genital organs ...	F	—	—	—	—	—	—	1	1	—	1	—	—	3	3
VII. The Puerperal State:—															395
134-A. Abortion	F	—	—	—	—	—	—	—	2	1	—	—	—	3	3
134-B. Haemorrhage of pregnancy	F	—	—	—	—	—	—	—	2	2	—	—	—	4	4
134-C. Uncontrollable vomiting ...	F	—	—	—	—	—	—	—	1	—	—	—	—	1	1
134-D. Ectopic gestation ...	F	—	—	—	—	—	—	—	—	1	—	—	—	1	1
135. Puerperal haemorrhage ...	F	—	—	—	—	—	4	2	7	4	—	—	—	17	17
136. Other accidents of child birth	F	—	—	—	—	—	—	6	7	4	—	—	—	17	17
137. Puerperal fever	F	—	—	—	—	—	1	4	2	3	—	—	—	10	10
138-C. Puerperal convulsions ...	F	—	—	—	—	—	2	1	3	—	—	—	—	6	6
VIII. Diseases of the Skin and of the Cellular Tissue:—															59
142-B. Noma, gangrene of mouth	M	—	—	—	—	—	—	—	1	—	2	—	—	3	6
	F	—	—	2	—	—	—	—	—	—	—	1	—	3	

DISEASES	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
142-C. Noma pudendi ...	M	—	—	—	—	—	—	—	2	1	1	1	—	5	5
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
142-D. Other gangrene ...	M	—	—	—	—	—	—	2	8	3	5	2	—	20	25
	F	—	1	—	—	—	—	1	—	1	—	2	—	5	
143. Carbuncle, boil ...	M	—	—	—	—	—	—	—	2	1	1	1	—	5	6
	F	—	—	—	—	—	—	—	—	—	1	—	—	1	
144-A. Phlegmon	M	—	1	—	—	—	—	2	3	4	6	2	—	18	20
	F	1	—	—	—	—	1	—	—	—	—	—	—	2	
144-B. Acute abscess ...	M	—	—	—	—	—	—	—	1	3	1	1	—	6	12
	F	3	—	—	—	—	1	—	—	—	—	2	—	6	
145-A. Ulcer, bed sore ...	M	1	—	—	—	—	—	1	3	4	5	5	—	19	21
	F	—	—	—	—	—	—	—	—	—	1	1	—	2	
145-C. Pemphigus	M	—	1	—	—	—	—	—	—	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
IX. Diseases of the Bones and of the Organs of Locomotion:—															96
146. Diseases of the bones ...	M	—	—	—	—	—	—	1	1	—	—	—	—	2	3
	F	—	—	—	—	—	—	—	—	—	—	1	—	1	
147. Diseases of the joints ...	M	—	—	—	—	—	—	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
148. Amputations	M	—	—	—	—	—	—	—	1	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
X. Malformations:—															5
150-A. Congenital hydrocephalus	M	—	2	1	1	—	—	—	—	—	—	—	—	4	6
	F	1	1	—	—	—	—	—	—	—	—	—	—	2	
150-C. Congenital malformation of heart	M	—	1	—	—	—	—	—	—	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
150-D. Other Congenital malformation	M	3	—	—	—	—	—	—	—	—	—	—	—	3	5
	F	1	—	1	—	—	—	—	—	—	—	—	—	2	
XI. Diseases of Early Infancy:—															12
151-A. Premature Birth ...	M	78	—	—	—	—	—	—	—	—	—	—	—	78	147
	F	68	—	—	—	—	—	—	—	—	—	—	1	69	
151-B. Infantile atrophy, debility and marasmus ...	M	104	9	5	1	—	—	—	—	—	—	—	—	119	210
	F	79	8	3	1	—	—	—	—	—	—	—	—	91	
151-C. Icterus neonatorum ...	M	3	—	—	—	—	—	—	—	—	—	—	—	3	3
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
152-B. Atelectasis	M	3	—	—	—	—	—	—	—	—	—	—	—	3	5
	F	2	—	—	—	—	—	—	—	—	—	—	—	2	
152-C. Injuries at birth ...	M	1	—	—	—	—	—	—	—	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
XII. Old Age:—															366
154-B. Senile Decay	M	—	—	—	—	—	—	—	—	—	—	160	—	160	307
	F	—	—	—	—	—	—	—	—	—	—	147	—	147	
XIII. Affections Produced by External Causes:—															307
157. Suicide by hanging or strangulation ...	M	—	—	—	—	—	1	1	11	14	8	3	1	39	46
	F	—	—	—	—	—	3	1	2	1	—	—	—	7	
160. Suicide by cutting or piercing instruments ...	M	—	—	—	—	—	—	—	1	2	—	—	—	3	3
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
164. Poisoning by food ...	M	—	—	—	—	—	—	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	

DISEASES	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
165. Other acute poisonings ...	M	—	—	—	1	—	—	—	1	—	—	—	—	2	3
	F	—	—	—	—	—	—	—	—	1	—	—	—	1	
167. Burns	M	—	—	2	2	—	1	2	2	—	—	—	—	9	13
	F	—	—	2	1	—	—	—	1	—	—	—	—	4	
168. Absorption of deleterious gases	M	—	—	—	—	—	—	1	—	2	—	—	—	3	3
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
169. Accidental drowning ...	M	—	—	1	3	4	2	1	3	8	2	1	1	26	34
	F	—	—	1	3	—	—	—	1	1	1	—	1	8	
170. Injury by firearms ...	M	—	—	—	—	—	—	—	—	—	1	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
171. Injury by cutting or piercing instruments	M	—	—	—	—	—	—	1	—	—	—	—	—	1	2
	F	—	—	—	—	—	—	—	—	—	—	—	1	1	
175. Injury by other crushing ...	M	—	—	—	—	—	—	—	2	—	—	—	—	2	2
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
179. Effects of heat	M	—	—	—	—	—	—	—	—	1	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
183. Homicide by cutting or piercing instruments ...	M	—	—	—	—	—	2	4	15	9	2	—	—	32	33
	F	—	—	—	—	—	—	—	—	—	—	1	—	1	
185. Fractures	M	—	—	—	1	2	1	4	15	10	5	5	2	45	49
	F	1	—	—	1	—	1	—	—	1	—	—	—	4	
186. Other violence	M	1	—	1	—	1	—	4	20	7	5	2	—	41	44
	F	—	—	—	—	—	—	1	—	—	—	2	—	3	
XIV. Ill-Defined Causes:—															235
187. Dropsy	M	—	—	1	—	—	1	2	8	11	31	28	—	82	109
	F	—	—	—	—	—	—	—	3	3	10	11	—	27	
189-A. Heart failure	M	—	—	—	—	—	—	—	—	—	1	—	—	1	2
	F	—	—	—	—	—	—	—	—	—	—	1	—	1	
189-B. Atrophy, debility & marasmus	M	22	9	9	3	—	—	1	2	1	1	1	—	49	104
	F	17	13	14	7	—	—	—	—	1	2	1	—	55	
189-D. Pyrexia	M	53	91	95	3	3	1	—	1	—	1	2	—	250	484
	F	55	83	78	9	2	3	1	2	1	—	—	—	234	
189-E. Other ill-defined deaths ...	M	18	4	4	1	—	3	8	48	122	77	19	6	310	334
	F	12	4	5	—	—	—	—	—	1	2	—	—	24	
189-F. Cause not specified ...	M	1	2	2	—	—	1	3	8	3	1	1	19	41	48
	F	—	2	1	—	—	—	—	1	—	—	—	3	7	
															1081
Total males ...	—	698	582	434	119	84	205	630	1954	1745	1334	840	34	8659	11947
Total females ...	—	574	529	427	123	71	93	175	362	297	234	397	6	3288	
Grand total ...	—	1272	1111	861	242	155	298	805	2316	2042	1568	1237	40	—	11947

Infantile Death Rate

The infantile death rate was 232.7 per 1,000 births compared with 248.9 in 1920 and 261.7 in 1919. The rate for each nationality and sex was as follows:—

	Males	Females	Total
Europeans	91.9	23.2	57.8
Eurasians	258.0	196.7	227.0
Chinese	229.6	263.2	242.2
Malays	306.4	281.7	294.4
Indians	224.2	157.0	192.1
Others	170.4	97.8	133.1
Total ...	236.1	229.0	232.7

As compared with the previous year these rates show increases for Eurasians, Malays and other nationalities and decreases for Europeans, Chinese and Indians.

The infantile death rate is the lowest yet recorded.

Mortality according to nationalities and ages.

The following return shows the number of deaths at different age periods in the different nationalities:—

Nationalities	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	Total	
Europeans	M	3	5	2	...	...	1	11	6	13	10	...	51	67
	F	...	2	1	...	1	1	2	3	4	2	...	16	
Eurasians	M	12	12	5	1	3	4	5	3	9	10	...	64	118
	F	9	9	6	...	3	3	3	5	...	16	...	54	
Chinese	M	522	437	347	99	216	458	1510	1487	1158	690	30	6954	9394
	F	452	399	335	102	121	125	257	215	164	265	5	2440	
Malays	M	110	91	52	11	31	48	151	95	79	81	3	752	1278
	F	87	86	54	12	30	23	59	43	47	84	1	526	
Indians	M	44	29	22	7	35	109	259	146	68	46	1	766	980
	F	21	29	27	8	8	21	35	25	18	22	...	214	
Others	M	7	8	6	1	4	10	18	8	7	3	...	72	110
	F	5	4	4	1	1	2	6	6	1	8	...	38	
Total Males	M	698	582	434	119	289	630	1954	1745	1334	840	34	8659	11,947
Total Females	F	574	529	427	123	164	175	362	297	234	397	6	3288	
Grand Total		1272	1111	861	242	453	805	2316	2042	1568	1237	40	...	11,947

Localities and Mortality

The following return gives the number of deaths in the different Sanitary Districts exclusive of deaths in Hospitals.

(1) From all causes.

District No.	I 239	District No.	X 186
Do.	II 149	Do.	XI 220
Do.	III 137	Do.	XII 600
Do.	IV 327	Do.	XIII 771
Do.	V 1,095	Do.	XIV 518
Do.	VI 456	Do.	XV 601
Do.	VII 439	Do.	XVI 204
Do.	VIII 329	Do.	XVII 231
Do.	IX 289	Do.	XVIII 774

(2) From certain diseases.

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII
Malarial fever ...	31	15	14	41	103	53	49	53	40	38	31	92	128	81	71	37	21	80
Pneumonia ...	21	19	15	29	110	43	59	37	34	32	24	63	96	69	53	19	31	60
Beri Beri ...	22	18	12	23	96	28	14	23	19	13	22	42	40	25	35	7	7	51
Phthisis ...	34	24	15	52	147	67	65	41	58	22	28	82	91	65	84	26	40	81
Enteric Fever ...	...	...	...	...	1	...	...	...	1	1	1	1	...	1	1	...	...	...
Diarrhoea ...	1	1	2	3	67	3	1	9	2	1	2	2	11	2	4	1	2	7
Dysentery ...	6	9	7	18	28	24	15	18	14	8	7	38	19	16	35	8	15	35
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria ...	1	1	...	...	...	...	...	...	1	...	...	..	1	1	...	...	...	...
Rheumatism ...	2	2	2	1	2	5	2	2	...	1	2	2	2	1	4	1	1	6

Certification of Deaths

The following return shows the percentage of deaths the causes of which were certified by Medicalmen, the Coroner and the Inspecting Registrars respectively :—

	Europeans	Eurasians	Chinese	Malays	Indians	Others	Total
Registrars ...	...	8	3,225	801	274	12	4,320
Medicalmen ...	65	106	5,609	443	650	98	6,971
Coroner ...	2	4	560	34	56	...	656
Total ...	67	118	9,394	1,278	980	110	11,947

This gives a percentage of 36.1 certified by the Registrars, as against 36.8 last year, 58.3 by Medicalmen, as against 58.1 last year and 5.4 certified by the Coroner as against 5.0 last year.

The percentages for the last 10 years have been as follows :—

—	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
Registrars ...	51.9	51.0	46.6	48.9	48.6	45.3	38.8	39.9	36.8	36.1
Medicalmen ...	43.3	45.3	48.9	47.3	46.2	49.4	55.8	55.2	58.1	58.3
Coroner ...	4.6	3.6	4.3	3.2	5.0	5.2	5.3	4.8	5.0	5.4

V. Registration of Births and Deaths

The numbers registered at the different offices were as follows :—

	Births	Deaths
Central Office	1,550	2,787
Prinsep Street Office	5,022	5,388
Kreta Ayer Office	3,665	3,772
	10,237	11,947

Twenty-eight births and one death were registered in the Post Registration Books and the sum of $186 was received in late registration fees.

Thirty-one queries were sent to Medical Practitioners for further information where the cause of death had been indefinitely stated.

VI. Analyst

The usual routine examinations of Municipal Water were carried out and showed that the water is free from harmful contamination.

Samples of fresh milk analysed showed adulteration to about the same extent as the previous year.

The analyses of the effluent from the Municipal sewage works showed that it still remains better than the standard laid down by the Royal Commission on Sewage.

It is satisfactory to note that the effluent from private sewage installations have improved and that these installations have been better looked after than in the previous year.

VII. Bacteriologist

The number of specimens sent by private practitioners increased considerably in number showing that they appreciate the work done but there is still room for improvement.

The routine examination of the Municipal Water Supply showed that there was no dangerous contamination.

VIII. Anti Mosquito Work

During this year the whole of the antimosquito work was transferred to the Municipal Health Department.

Previously it had been carried out partly by the Antimosquito Committee and partly by the Health Department.

It is to be hoped that now it is under one control that work will be carried out more systematically.

Work proceeds slowly and necessarily so as there is a large field to cover and it will be some years before one will be able to judge the effect of the work.

IX. Nurses

The nurses paid 12,932 visits compared with 10,546 in the previous year.

Infants seen numbered 6,060 compared with 5,268 in 1920 and equal to 59 per cent. of the total births compared in 58 per cent. in the previous year. Of these 537 were ailing and in only 38 cases was the cord unhealthy.

Of 402 infants not seen 176 had been given out to nurse, 112 had died and 114 were still born.

There were 45 cases of twin births.

4121 children were breastfed the remainder being fed on tinned milk and other foods. In only 44 cases was the food unsuitable.

Of the 1,712 bottles in use, 1.115 were of suitable pattern and only 68 were dirty.

Of the mothers seen 236 were ailing and 25 died.

424 mothers were attended by friends and 745 unattended, the remainder by medicalmen or midwives.

Of the 6,232 mothers seen 5,627 were living in cubicles or single rooms and 605 in houses of more than one room.

The chief infantile ailments were Thrush, Conjunctivitis and Marasmus.

X. Midwives

At the end of the year there were 166 midwives on the register and during the year they attended 6,627 cases.

The following return shows the number and nationality of cases attended by C & D class midwives:—

	1914	1915	1916	1917	1918	1919	1920	1921
Europeans ...	1	...	3	11	9	6	2	4
Eurasians ...	16	21	27	66	144	151	159	164
Chinese ...	411	614	1,140	1,988	3,762	4,017	4,264	4,876
Malays ...	5	15	33	140	916	1,336	1,281	1,293
Indians ...	46	33	55	67	142	146	143	213
Others ...	1	6	9	13	59	70	27	27
Total ..	480	689	1,267	2,285	5,032	5,726	5,876	6,577

A.	Class midwives attended	...	6	cases
B.	Do. do.	...	44	,,
C & D.	Do. do.	...	6,577	,,
In Hospitals there were		...	1,271	,,
	Total	...	7,898	

The number of births registered during the year was 10,237 so that 77 per cent. of mothers received some kind of skilled treatment. (This excludes those attended by Medicalmen).

In 615 cases the whole of the midwives fee ($5) was paid by the Commissioners. This amounted to $3,075. In 847 cases part of the fee was paid ($2,031.50) making a total of $5,106.50.

It was distributed amongst the different nationalities as follows:—

	1916	1917	1918	1919	1920	1921
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Eurasians	9.00	20.00	34.00	46.00	27.00	37.00
Chinese...	1,438 00	2,567.40	2,593.90	2,922 00	2,500.00	3,653.50
Malays ...	86.00	217.00	516.10	805.00	852.00	1,203.00
Indians ...	147.00	100.00	71.10	67.00	122.00	205.00
Others ...	10.00	...	7.00	16.00	5.00	8.00
Total ...	1,690.00	2904.40	3,222.10	3,856.00	3,506.00	5,106.50

In the remaining 5,115 cases the midwives received from the patient fees amounting to $55,689.50.

The following table shows the average fee in paying cases in the different nationalities:—

	1916	1917	1918	1919	1920	1921
Europeans	37.66	20.00	45.00	54.16	87.30	16.25
Eurasians	15.72	14.65	18.91	16.86	18.70	20.52
Chinese	8.56	8.30	9.29	9.62	10.87	10.75
Malays	12.18	8.40	7.26	7.06	8.56	8.82
Indians	10.04	9.86	10.65	10.63	13.70	14.44
Others	13.28	16.15	11.94	12.80	39.65	19.60

26	midwives attended under			...	9	cases
18	do.	10 cases and under		...	20	,,
12	do.	20	do.	...	30	,,
12	do.	30	do.	...	40	,,
4	do.	40	do.	...	50	,,
18	do.	50	do.	...	60	,,

3	midwives attended	60 cases	and under	...	70 cases
4	do.	70	do.	...	80 ,,
1	do.	80	do.	...	90 ,,
3	do.	90	do.	...	100 ,,
5	do.	100	do.	...	150 ,,
11	do.	150	do.	...	200 ,,
6	do.	200	do.	...	250 ,,
1	do.	428 cases			
1	do.	476 ,,			

XI.—Food and Markets

The Markets have been kept in a clean condition and repairs have been carried out at most of them.

The annual cleansing was carried out at Chinese New Year when 1,165 rats were caught and killed.

During the year an alteration was made in the method of letting stalls. Instead of paying a daily rent stallholders have now to take out a monthly licence to which a photograph of the stallholder is attached. Uniform stall rents were introduced for the different varieties of stalls throughout all the Markets.

The quality and quantity of the food passing through the Markets kept up to the average.

There were 361 milksellers licensed.

The details of unsound foodstuffs dealt with will be found in the Market Inspector's Report.

There were 234 convictions for offences against the Ordinance and Bye-laws the fines amounting to $712.50.

XII.—Food Shops, etc.

An endeavour was made to bring Eating Shops and Coffee Shops into a decent condition, and to comply with the bye-laws.

They were divided into three classes (*a*) Fit, (*b*) Possible to be made fit by carrying out alterations (*c*) Quite impossible to be made fit. Notices were served on the occupiers effected in the last two classes.

The Ordinance was amended during the year to give us power to licence shops where fresh food is sold.

A start was made with shops selling mutton, beef and pork. The improvement in the shops licensed is most marked and it is hoped that this year all butchers shops will comply with our requirements.

560	Coffee Shops	were licensed.
234	Eating Houses	do.
19	Lodging Houses	do.
5	Boarding Houses	do.
3	Mutton Shops	do.
2	Pork Shops	do.

XIII. Places of Public Resort

Theatres, Hotels, Public Houses, Opium Shops, Cinematograph Halls and Liquor shops were periodically inspected and were usually found to be in a satisfactory condition.

XIV. Slaughter Houses

160,711 animals were received compared with 162,752 in 1920. Seventy-nine animals were rejected as being in bad condition. The carcases of 944 dead or diseased animals were destroyed and 2,932 portions, injured or diseased, cut off and destroyed.

There were 16,758 Australian Sheep slaughtered.

XV. Offensive Trades

There were 3,567 licenses issued for such trades the fees amounting to $9,798.50.

There were 108 prosecutions for carrying on such trades without a licence. The fines imposed amounting to $602.

XVI. Obstructions

There were 570 prosecutions for obstructing verandahs streets, etc., the fines amounting to $2,165.

The following permits were issued for temporary storage of goods:—

Boat Quay	168	...	...	$3,859.20
North Boat Quay	12	...	...	360.00
Kim Seng Road	3	...	...	60.00
	183			$4,279.20

XVII. Hawkers

Hawkers licenses were as follows:—

			Number	Fees
Day Hawkers	...	...	4,311	$10,348.20
Night Hawkers	...	...	6,448	33,773.60
Itinerant Hawkers	...	...	8,612	8,612.00
			19,371	$52,733.80

XVIII. Burial Grounds

The following return shows the number of burials in the Municipal Burial Grounds:—

				1921	Since opening
Bidadari					
Protestant	...	...	...	146	1,538
French Roman Catholic		...	...	168	1,695
Portuguese Roman Catholic		...	...	70	676
Pauper	...	...	...	531	5,352
Serangoon Road					
Mohammedan	...	...	...	273	1,942
Infectious Disease					
Serangoon Road	...	...	...	95	259
Yeo Chu Kang Road		...	...	28	472
				1,311	11,933

There were 5,276 inspections made to burial grounds within Municipal limits in which 7,077 burials were made.

There were 24 exhumations and 81 cremations.

XIX. Staff

I returned from leave on 26th March.

Dr. Hunter Deputy Health Officer went on leave in December.

Dr. C. C. B. Gilmour was appointed Bacteriologist in December.

Mr. Mason, Divisional Sanitary Inspector, was retired on account of ill health at the end of the year.

Messrs. J. A. S. Jansen, O. N. Eber, W. J. Lingard, G. Armstrong, Leong Yuen Lock and V. I. Bracken were appointed Sanitary Inspectors.

Mrs. R. Smith—Nurse, resigned in October.

Mrs. Toft—Matron, Middleton Hospital returned from leave in May.

Mr. Holley, Superintendent, Slaughter Houses, returned from leave in June and Mr. Neil reverted to his post as Sanitary Inspector.

Several changes took place in the subordinate staff.

Health of Municipal staff. There were 3,266 cases of sickness treated 283 persons were sent to Hospital and 2,740 dressings applied to 1,125 persons.

XX. General

There were 11,180 notices served which with 2,216 from the previous year made a total of 13,396. Of these 11,380 were complied with.

In addition 1,759 intimations were served which with 62 from the previous year made a total of 1821. Of these 1,405 were complied with.

There were 855 convictions for non compliance with notices the fines amounting to $1,007.

There were 137,763 visits of inspection made by the Sanitary Inspectors with 6,788 prosecutions and 6,107 convictions. The fines imposed amounting to $18,248.

XXI. General Remarks

1. The Census was taken in April but only a preliminary report was issued so that returns usually printed have had to be omitted this year.

2. The slaughter houses were transferred to the Health Officer for administrative purposes.

3. The birth rate is the highest recorded.

4. The infantile mortality rate is the lowest recorded.

5. The system of administering the Markets has been altered.

6. A commencement was made with the licensing of foodshops.

7. The whole of the Anti-mosquito Work is now under the control of the Health Officer.

XXII. Appendices

The following reports and returns are appended :—

A. Report of Analyst.

B. Report of Bacteriologist.

C. Report of Superintendent, Middleton Hospital.

D. Anti Mosquito Report.

E. Report of Food and Market Inspector.

F. Return of Inspections Prosecutions, etc.

G. Return of Notices.

H. Summary of Arrest Cases.

I. Return of Licenses for Offensive Trades.

I have the honour to be,

Sir,

Your obedient servant,

J. A. R. GLENNIE, M.B., C.M., D.P.H.,

Municipal Health Officer.

SINGAPORE MUNICIPALITY

FOURTEENTH ANNUAL REPORT

OF THE

MUNICIPAL ANALYST

FOR THE YEAR

1921

BY

A. C. HARRINGTON, F.I.C., F.C.S.

ANALYTICAL LABORATORY,

SINGAPORE, *10th April, 1922.*

TO

THE MUNICIPAL HEALTH OFFICER,

SIR,

I have the honour to submit herewith the Fourteenth Annual Report of the Municipal Laboratory.

During the year 1921 10,327 samples have been submitted to me for analysis and the following table summarises the nature of these samples.

Well Waters	15
Municipal Waters	7270
Miscellaneous Waters	130
Milks from Itinerant Vendors...	728
Sewages and Effluents from Municipal Sewage Works	1943
Sewages and Effluents from private installations ...	76
Tinned Milk	53
Butter	8
Flour	7
Aerated Waters	25
Bread	6
Cocoa	4
Rice	14
Tinned Foods	16
Beer	4
Quinine Sulphate	6
Samples from Engineer's Department	5
Samples from Gas Department	11
Samples from Electrical Department	3
Samples from Health Department	3

Well Waters

Fifteen samples were analysed and all save one were proved to be contaminated with unoxidised sewage matter and consequently were unfit for domestic use.

I have remaked before on wells in the more crowded districts of the town. It is impossible for these to yield a safe supply and as a rule the water is loaded with unoxidised sewage to an excessive degree. As it would appear that the occupants of these houses in the crowded districts are anxious to supplement the pure Municipal supply by well water a strict watch should be kept for reopened wells.

Wells in the less crowded parts of Municipal Singapore e.g. the Tanglin District are also in my opinion practically all liable to intermittent contamination. In the first place the wells are generally constructed badly and if they were originally in good order subsidence of ground has in most cases caused large cracks in the structure. In the second place they are generally situated close to the houses they serve and consequently near to sources of contamination. Lastly if at times (in dry weather) they yield a pure supply, during the heavy rains, water is so quickly washed into the wells that the natural purifying action of the earth has not time to act and the wells previously passed as good contain a contaminated supply. This last contingency has been brought especially to my notice this year and it must be remembered that the quality of a water supply is measured by the worst sample which can at any time be obtained from it.

In my opinion wells should not be tolerated in any district that is served with Municipal Water as in the great majority of cases it will lead to an increase in water borne diseases.

Municipal Waters

During the year 7,270 samples were analysed. The samples were taken regularly from the impounding reservoirs and the streams feeding the same, the filter beds at Woodleigh and Bukit Timah, the clear water tanks, the service reservoirs, and taps.

The examination proved the impounding reservoirs to be free from sewage and other harmful contamination, the filter beds to be working well and the water in the storage reservoirs, as it is supplied direct to the town, to be a water in every way suitable for a public supply except for the fact that it contains a small amount of dissolved and suspended vegetable matter.

Singapore raw water is a typical "Surface Water" Supply and as such contains very perceptible traces of vegetable matter and is more or less discoloured depending on the season of the year. On this account it cannot be considered entirely satisfactory unless it is filtered before distribution. In this case there is no danger of pollution by sewage or manure but low forms of vegetable life may become very prevalent. It is this that causes the complaints (especially during dry weather) of unsightly appearance and disagreeable odours. Organisms which are not visible at the time of delivery may multiply so rapidly afterwards that vessels in which the water is allowed to stand for a day or two become coated with a slimy green deposit. Again in prolonged dry weather when the water in the reservoir gets low, vegetable growths occur and injuriously affect the character of the water.

The examination of the feeders into the reservoirs is of extreme importance and will become more so at Thomson Road Reservoir once the Golf Club starts. These streams are the starting points of our supply and should be carefully watched. I have never up to date found them contaminated with sewage matter but the water is liable to variations according to the state of the weather. During heavy rains it becomes mixed with the surface soil and decayed vegetable matter, washed down from the surrounding slopes or carried away from the banks of the stream itself, and during these periods the albuminoid ammonia figure of the water is raised considerably.

The water from the Seletar extension is not as satisfactory as the supply from Thomson Road and Kallang River Reservoirs as it generally contains more vegetable matter. However during the year under review I never detected sewage contamination in this supply.

As a rule it is difficult to detect traces of sewage contamination in upland surface waters owing to the presence of vegetable matter however in our local supply it is not so difficult as the normal amount of chlorine as chlorides is extremely low, in fact to all intents and purposes it is absent. Sewage always contains chlorides and consequently even a slight increase in the chlorine figure is at once evident in our water. Such an increase is at once a presumption that sewage may be present and then an increase in the ammonia figures is looked upon with suspicion.

The slow sand filters at Bukit Timah Road and Woodleigh worked fairly well during the year. Their efficiency and the length of time for which they deliver a good filtrate without resting is dependant on the character of the raw water. During the time when the raw water is at its best the beds at Bukit Timah can work for as long as twenty days and the Woodleigh beds for seven or eight days. It has, I think, never been satisfactorily explained why Bukit Timah Road Filters work longer than Woodleigh Filters.

During the drier months especially June and July the samples from the reservoirs, especially Thomson Road Reservoir, showed the presence of free ammonia. There was no increase in chlorides or nitrates and nitrites were absent. Consequently the free ammonia must have been produced by vegetable and not animal matter. This appearance of free ammonia has been noted before especially during hot weather and is in my opinion due to the slow decomposition of dead forms of vegetable life. The development of this free ammonia is practically always accompanied by a smell in the water. It is interesting to note that this smell and the free ammonia decrease to a certain extent when the water is exposed to the air and sun in our service reservoirs.

There is always a tendency for sedimentary matter to be deposited from our water in the service pipes and for bacterial and fungoid growths to develop and for rust to form and accumulate. Frequent flushing prevents this to a great measure but this is of course accompanied by a waste of water. This tendency is particularly noticed in "dead ends". The tarry matter with which new pipes are coated communicates a distinct odour and flavour to the water and has given rise to complaints.

I append the results of chemical analysis of an average sample of water from the two impounding reservoirs and an average sample of filtered water:—

	Results expressed in parts per 100,000		
	Thomson Road Reservoir	Kallang River Reservoir	Filtered Water
Total Solids	4.0	4.5	2.7
Total Organic Solids	2.2	2.7	1.1
Total Inorganic Solids	1.8	1.8	1.6
Suspended Organic Solids ...	1.2	1.8	0.3
Suspended Inorganic Solids ...	0.1	0.1	0.0
Dissolved Organic Solids... ...	1.0	0.9	0.8
Dissolved Inorganic Solids ...	1.7	1.7	1.6
Chlorine	0.03	0.03	0.03
Free and Saline Ammonia ...	0,001	0.0015	Absent
Albuminoid Ammonia	0.008	0.008	0.002
Nitrites	Absent	Absent	Absent
Nitrates	Absent	Absent	Absent
Oxygen absorbed in 15 mins at 84° F.	0.021	0.026	0.012
,, ,, 4 hours ,,	0.085	0.092	0.035
Poisonous Metals	Absent	Absent	Absent
Iron	0.09	0.12	Trace
Colour	Brownish	Brownish	None
Appearance in 2 ft. tube	Turbid	Turbid	Clear
Reaction	Neutral	Neutral	Neutral

Miscellaneous Waters

In December I received from the Water Engineer two samples of water from Gunong Pulai in Johore and made a full analysis on the same.

The results of analysis show that organically the water is very pure and that there is no sewage pollution. The amount of vegetable matter dissolved or in suspension is extremely small and the colour taste and smell are all that could be desired a public supply.

A strict search was made for poisonous metals as it had been stated that the water had lead copper and arsenic dissolved in it. No trace of any poisonous metal could be found even on evaporating a large bulk.

The water in the state of purity in which I received it could be put into the public mains without filtration.

Another examination is to be made when the streams are in flood and it is to be expected that the results will not be as good.

I append the results I obtained:—

	Results expressed in parts per 100,000	
	Pulai II Upper	Pulai III Upper
Total Solids	2.89	2.52
Total Organic Solids	0.80	0.62
Total Inorganic Solids	2.09	1.90
Chlorine as Chlorides	0.05	0.03
Free and Saline Ammonia	0.0005	0.0015
Albuminoid Ammonia	0.0025	0.0005
Nitrogen as Nitrites	Absent	Absent
Nitrogen as Nitrates	0.008	0.024
Oxygen absorbed in 4 hours at 80° F. ...	0.073	0.043
Poisonous Metals	Absent	Absent
Total Hardness	0.5°	0.5°
Temporary Hardness	0.0°	0.0°
Permanent Hardness	0.5°	0.5°

Physical Results

Appearance in 2 ft. tube	Clear and Bright	Clear and Bright
Colour in 2 ft. tube Lovibonds and Tintometer	Yellow 1.0 Red 0.05 Blue 0.5	0.8 0.05 0.8
Taste	Palatable	Palatable
Smell	None	None
Reaction	Neutral	Neutral

I examined 46 samples of water from Mandai Quarry. In every instance the water was contaminated with varying amounts of unoxidised sewage matter.

I analysed 82 samples of water from an experimental "Drifting Sand" Filter installed at Woodleigh. The experiment which is only in its initial stages was not an entire success and this is due to the fact that the raw water was not treated in any way. In order to make any rapid sand filter yield a satisfactory effluent with our raw water it is, I think, necessary to give it some preliminary treatment such as coagulation and sedimentation. The experiment is being continued on these lines and the initial results are quite satisfactory.

An extended series of experiments were conducted with the help of the Electrical Engineer on the electrolytic production of chlorine from sea water.

It is intended to add the solution of chlorine (it is really sodium hypochlorite) in a very minute proportion to water so that it can act as a

germicide and then allow the water to be exposed to the air for twenty-four hours in order to get rid of all the excess chlorine. This method of purification has come in largely during the last few years to purify public water supplies.

In my opinion such treatment should only be considered as an additional precaution and should not take the place of our sand filtration as the chlorine in the proportion added would have no effect on the vegetable matter the water contains.

The aim I had in view in these experiments was to produce sufficient chlorine to chlorinate water flowing at the rate of one million gallons per twelve hours, to the extent of a quarter of part per million. This proportion would I think be all that is necessary for our supply but its effectiveness would of course have to be judged by bacterial tests.

It is possible to produce the right amount of chlorine (2½ lbs.) with the plant set up by the Municipal Electrical Engineer, by using a 10% salt solution and running this through at the rate of 100 gallons per twelve hours.

Experiments were then made with sea water and it was found possible to produce about half the amount required by using sea water which contains roughly 3% of salt; so that if it was decided to use sea water two electrolytic plants would be required in place of the one required when using 10% salt solution, but the cost of the salt and the labour involved in dissolving it and filtering the solution would be saved.

Milks from Itinerant Vendors

728 samples were collected by the Sanitary Inspectors and handed to me for examination. The number is rather less than last year owing to the fact that the Inspectors during the earlier part of the year were engaged in census work.

Analysis showed that 132 or 18.1% were adulterated. Of these 132 samples 127 were adulterated by the addition of water and the remaining five were adulterated by reason of the fact that the milk was deficient in fat.

The average adulteration for added water was 9.2%. The average adulteration for deficiency in fat was 26.1%.

The following table classifies the percentage adulterations by the addition of water for the year:—

Between	50	per cent.	and	40	per cent. of added water	...	1
,,	40	,,	,,	30	,, ,,	...	3
,,	30	,,	,,	20	,, ,,	...	13
,,	20	,,	,,	10	,, ,,	...	28
,,	10	,,	,,	4	,, ,,	...	33
Below	4	per cent.			,, ,,	...	49
							127

The following table shows how many samples have been taken during the past ten years, the percentage adulterated and the average adulteration.

	Number	Percentage Adulterated	Average Adulteration
1912	219	33.8	19.8
1913	456	19.7	20.0
1914	547	20.5	20.2
1915	490	24.9	19.1
1916	288	33.0	18.4
1917	118	78.8	21.35
1918	20	85.0	42.6
1919	396	26.8	...
1920	807	18.3	13.1
1921	728	18.1	9.2

The percentage adulterated is practically the same as last year but the average adulteration is considerably lower. In the old days it was not uncommon to get an addition of water of over 50%. This year there was not one as badly adulterated and only one was over 40%. It is far more easy to adulterate with a large percentage of water here than it is at home owing to the fact that the percentage of fat is as a rule higher. The amount of fat determines within limits the opacity of the milk and on this it is judged by the general public.

The number of samples deficient in fat has increased. It is difficult to say whether this adulteration is deliberate that is to say if the milk has been skimmed, or if the milk has come from a sick cow. Cows suffering from foot and mouth disease give a milk deficient in fat. I am inclined towards the latter view as without centrifugal apparatus it would be difficult to separate a proportion of the fat in this hot climate. The milk would have turned before the fat would have risen sufficiently to skim. It is of course just as wrong to sell milk from a sick cow as intentionally adulterated milk.

Sewages Effluents, etc., from Municipal Sewage Works.

1943 samples in all were received for analysis.

These consisted of 237 samples of Crude Sewage from the Detritus Tanks, 250 samples from the Sedimentation Tanks, 1,402 samples of Effluents from the Filter Beds and Fall and 54 samples of Sludge.

The crude sewage, compared with the ordinary sewage dealt with on Great Britain for instance, is a very strong sewage. However, probably owing to the favourable climatic conditions obtained locally, the coral filter beds perform the purification process very satisfactorily so it is not necessary to introduce any more diluting water. The strength of the raw sewage

varies considerably from day to day but on the whole it can be taken as three to four times as strong as home sewage.

The crude sewage from the Detritus Tanks passes direct into the Sedimentation Tanks and purification takes place at this point to a certain extent. As would be expected a good deal of the insoluble matter settles out. Besides this the oxygen absorbed and albuminoid ammonia figures are reduced considerably.

This liquid then passes direct on to the coral filter beds which purify it very satisfactorily. On all occasions on which I analysed the effluent during the year it passed the standards laid down by the Royal Commission on Sewage Disposal viz., that the suspended solids should not be more than 3 parts per 100,000 and that it should not take up more than 2 parts per 100,000 of dissolved oxygen in five days.

The samples taken at the fall were very much better this year than last and it showed that the Humus Tanks were working normally.

I append some typical results taken during the year.

	Results expressed in parts per 100,000		
	Crude Sewage	Sedimentation Tank	Filter Effluent
Free Ammonia	8.15	9.40	0.22
Albuminoid Ammonia	16.20	1.72	0.12
Nitrites	Absent	Present	Present
Nitrates	Absent	Absent	Present
Oxygen absorbed in 3 minutes ...	17.83	3.01	0.29
Do. 4 hours ...	43.45	8.05	0.60
Dissolved oxygen absorbed in 5 days	...	...	1.05
Reaction	Alkaline	Alkaline	Alkaline
Suspended Matter	310.7	6.7	0.4
Organic Suspended Matter ...	283.2	5.8	0.4
Inorganic Suspended Matter ...	27.5	0.9	0.0

The following is a typical analysis of the samples of Sludge analysed.

Free and Saline Ammonia	...	29.0 parts per 100.000
Albuminoid Ammonia	...	30.8 do. do.
Oxygen absorbed in 4 hours	...	527.9 do. do.
Nitrites	...	Present
Nitrates	...	Present
Reaction	...	Alkaline

Water	93.78	per cent.
Total Solids	6.22	,,
Soluble Solids	0.20	,,
Insoluble Solids	6.02	,,
Total Organic Solids ...	3.74	,,
Total Inorganic Solids ...	2.48	,,
Soluble Organic Solids ...	0.09	,,
Soluble Inorganic Solids ...	0.11	,,
Insoluble Organic Solids ...	3.65	,,
Insoluble Inorganic Solids ...	2.37	,,

Sewages and Effluents from Private Installations

76 examinations were made in all. In practically every case, each installation was visited at least once every two months.

The examinations and analyses reveal an entirely different state of affairs to that which prevailed last year. Then in practically every case the effluents delivered into the public drains were putrescible. Now although perfect effluents have by means been reached in every case, matters are very different.

This result has mainly been brought about by the fact that the householder has been made to realize that the installations need constant care and that if the coral beds are allowed to get overgrown with vegetation and the tippers get out of order then the system works badly.

There were however a few cases of bad neglect discovered during the year but these were quickly put into order.

Some of these private plants work very much better than others. For instance those at the Municipal Houses, Chatsworth Road and Keppel House have consistently given a good effluent. Other installations have varied considerably and I think the reasons are faulty construction in the first place and secondly the use of strong disinfectants.

It must be remembered that as a rule these effluents meet with a very small volume of diluting water and in some cases run into drains which are dry for a certain proportion of the year. It is therefore necessary that the installations should be as perfect as possible.

Tinned Milk

Fifty three samples were analysed. They were of the usual three varieties viz natural milk, condensed unsweetened and condensed sweetened.

All the natural milks were up to the minimum standards required by the Ordinance namely 3.25% of fat and 8.5% solids not fat. No preservative was detected in any sample.

The condensed milks on analysis showed a satisfactory state of affairs except for the fact that in a good many cases the dilution clause is not properly stated. This matter is receiving attention this year.

Butter

All samples showed a water content below the maximum limit of 16%.

An examination of the fat by the butyro-refractometer and the Reichert Meissl method showed the absence of foreign fats.

Boric Acid as a preservative was present in three cases. The amount in each case was under the maximum limit of 0.5 per cent.

Flour

Seven samples were analysed. All were shown to be pure flours and unadulterated with foreign grain. In three cases however the cold water extract and acidity of the flour showed that they were of poor quality.

Aerated Waters

All the samples examined were free from lead. All the sweetened samples examined contained Salicylic Acid as a preservative.

Bread

All samples contained below the maximum quantity of water allowable namely 40 per cent.

The acidity of the bread was in every case low showing that the samples were of good quality.

There was no fraudulent addition of inert foreign ingredients.

Cocoa

Four samples were analysed as complaint was made that the consumption of a certain brand made a household feel unwell.

Nothing wrong was discovered.

Rice

Fourteen samples were analysed and all save two contained under the minimum amount of phosphorus pentoxide laid down by Drs. Fraser and Stanton.

Tinned Foods

These foods were analysed in order to detect if any poisonous metals had been absorbed by the foods.

In all cases no metallic impurities had been absorbed and the food was in sound condition.

Beer

All samples were free from arsenic.

All samples save one contained sulphites added as a preservative. In every case the amount present was low.

Quinine Sulphate

All samples save one were up to the British Pharmacopoeial standards. The one sample had an excess of cinchona alkaloids other than quinine.

Samples from Engineer's Department

The calorific value of a sample of dried sludge from the Sewage works was determined and it was found to be 5,020 B. T. U. per lb. about one third of the calorific value of a good coal.

A sample of tin ore from the catchment area of the proposed water supply at Seletar was assayed.

A sample each of Red Lead and Red Oxide of Iron to be used in the manufacture of paints were analysed to see if they came up to specification.

I also analysed a sample of pitch amongst other figures determining the percentage of free carbon.

Samples from Gas Department

I analysed fully nine samples of coal in order to determine if they would yield the normal quantity of coal gas required.

I also analysed a sample of spent oxide to determine the proportion of free sulphur it contained.

A sample of a deposit from a gas pipe was also analysed.

Samples from Electrical Engineers Department

A sample of clay and one of a powder were analysed with special reference to their action on lead and iron.

One sample of cast iron was analysed.

Samples from Health Department

Three samples of urine were analysed.

I have the honour to be
Sir,
Your obedient servant,
A. G. HARRINGTON,
F.I.C., F.C.S.
Municipal Analyst.

ANNUAL REPORT

FOR

1921

OF THE

MUNICIPAL BACTERIOLOGICAL LABORATORY

SINGAPORE

BY

C. C. B. GILMOUR M.A., M.B., Ch. B.

BACTERIOLOGICAL LABORATORY,

January, 1922.

TO

THE MUNICIPAL HEALTH OFFICER.

SIR,

I have the honour to forward the report on the working of this department during the year 1921.

Public Health Examinations

During the year 4689 specimens were sent to the laboratory for examination. They came chiefly from medical practitioners in town and were mostly from cases of communicable disease. They were made up as follows:—

Malaria

A total of 1506 blood films was examined and in 388 or 25.7 per cent. the malarial parasite was found. 199 were Benign Tertian, 175 Subtertian, 11 Quartan, 2 mixed Benign and Subtertian, and 1 mixed Benign and Quartan infections.

Tuberculosis

346 specimens of which 339 were sputa, 4 faeces, 2 Urine and 1 milk were examined. The tubercle bacillus was found in 95 of the sputa and in 1 specimen of faeces. The other specimens were negative. The specimen of milk was inoculated into a guinea-pig.

Typhoid and Paratyphoid Fevers

Under this group 700 examinations were made.

241 specimens of serum were tested against the B. typhosus and 23 showed a positive Widal.

222 specimens were tested against B. paratyphosus A. and 221 against B. paratyphosus B. Of these 13 gave a positive reaction with B. para. A. and 8 with B. para. B. In addition 12 specimens of faeces, 2 specimens of urine, and 2 specimens of blood were examined for members of the Enteric group. The results were in all cases negative.

Dysenteries

In this group 584 examinations were made.

Amoebic.—500 specimens were examined and in 111 E. histolytica or its cystic form was demonstrated.

Bacillary.—84 specimens were examined. From 2 of these B. dysenteriae Shiga was isolated and from 3 B. dysenteriae Flexner was isolated.

Cholera

11 specimens were examined and the specific vibrio was not found in any.

Plague

47 specimens were examined in 22 of which the B. pestis was demonstrated.

Cerebro Spinal Fever

291 specimens were examined and the Meningococcus was demonstrated in 150 of these.

Diphtheria

479 specimens were examined and in 76 the Klebs Loeffler bacillus was demonstrated.

Leprosy

46 specimens were examined 25 of which were positive.

Miscellaneous

Under this heading 679 specimens were examined. These included:—

	Specimens	Positive
Urine for general examination ...	49	...
„ gonococci	52	20
„ causative organisms ...	29	...
Pus for causative organisms	3	...
Prostatic fluid for gonococci... ...	4	...
Pus for gonococci	178	104
Faeces for ova of intestinal worms ...	352	80
Faeces for ova Schistosomum Japonicum	2	...
Faeces for Blood	1	...
Cerebro spinal fluid for Pneumococci ...	6	6
Blood for Filaria	1	...
Serum for Sp. pallida	1	...
Sputum for Pneumococci	1	1
	679	

Water Analysis

During the year 2581 samples of Municipal Water were examined. As in previous years the examinations consisted of:—

(a) An estimation of the total number of organisms growing on Agar in 48 hours at 37° C.

(b) An estimation of the smallest quantity of the sample in which Lactose fermenting organisms were present.

The results of the examinations were satisfactory.

Middleton Hospital

All patients in hospital were, when necessary, examined on admission and the discharge of recovered cases was controlled by repeated examinations.

Mortuary

67 autopsies were performed during the year. These were made up as follows:—

Cerebro-Spinal Fever	16
Pneumococcal Meningitis	5
Septic Meningitis	1
Plague	14
Lobar Pneumonia	5
Broncho-pneumonia	6
Pulmonary Tuberculosis	7
Bacillary Dysentery	3
Small-pox	3
Cardiac Failure	1
Gastro-enteritis	1
Ankylostomiasis	1
Acute Nephritis	1
Syphilitic Cirrhosis of Liver	1
Syphilis	1
Malaria	1
	67

I took over the work of the department from Dr. P. S. Hunter on the 1st of December.

This explain the absence of any comment on the work done under the various headings.

I have the honour to be,

Sir,

Your obedient servant,

COLIN C. B. GILMOUR,

Municipal Bacteriologist.

MIDDLETON HOSPITAL,

SINGAPORE, *6th April, 1922.*

TO

THE MUNICIPAL HEALTH OFFICER.

SIR

I have the honour to forward the following report for the year 1921.

The following table gives a summary of the cases treated at Middleton Hospital during the year:—

Diseases	Remaining at the beginning of the year	Admitted during the year	Total treated	Discharged	Died	Total remaining at the end of the year
Plague	...	16	16	...	16	...
Cholera	...	...	...	...	...	...
Small-Pox	...	139	139	96	24	19
Cerebro-Spinal Fever	3	57	60	28	31	1
Chicken-Pox	...	98	98	96	...	2
Diphtheria	1	20	21	14	4	3
Measles	...	39	39	39	...	...
Erysipelas	...	9	9	9	...	...
Mumps	...	25	25	25	...	...
Whooping Cough	...	1	1	1	...	...
Enteric Fever	...	1	1	1	...	...
Influenza	1	5	6	6	...	...
Pulmonary Tuberculosis ...	...	5	5	1	4	...
Other diseases	...	61	61	48	13	...
Total ...	5	476	481	364	92	25

At the end of 1920 there were 5 patients in Hospital viz:—3 cerebro-spinal fever, 1 diphtheria, and 1 influenza.

During the year there were 476 admissions.

Plague.—There were 16 plague admissions of which all died, 12 of these died within 24 hours of admission to Hospital. All were of the bubonic type.

Cholera.—There were no cholera admissions during the year.

Small-pox.—There were 239 admissions. Of this total 4 were of the haemorrhagic type, 23 of the confluent type and 112 of the discrete type 86 cases showed vaccination marks and 53 were unvaccinated or had doubtful marks. 24 deaths occurred during the year. 15 of these cases were unvaccinated and 9 vaccinated.

Of the fatal cases 4 were of the haemorrhagic type, 15 of the confluent type and 5 of the discrete type.

Cerebro-spinal Fever.—There were 57 admissions during the year which with 3 cases remaining from 1920 made a total of 60. Of these 31 died, 28 were discharged and 1 remained in Hospital at the end of the year. 14 of the deaths occurred within 24 hours of admission to Hospital.

Diphtheria.—20 cases of diphtheria were admitted, making a total of 21 cases (including 1 in Hospital at the end of 1920). Of these 14 were discharged, 4 died and 3 remained at the end of the year.

Of the 21 cases admitted 8 were of a severe laryngeal type necessitating tracheotomy.

5 of the operation cases recovered and 3 died.

Chicken-pox, measles, etc.—The admission for chicken-pox, measles, erysipelas, mumps, whooping cough, enteric fever, influenza and pulmonary tuberculosis are shown in the above table.

Other diseases.—61 cases admitted for observation or said to be suffering from one of the notifiable infectious diseases were found to be suffering from the following diseases:—

Bacillary dysentery 2, tetanus 1, syphilis 10, tonsillitis 7, gastro-enteritis 4, acute pneumonia 3, pneumococcal meningitis 5, debility 4, coryza 4, pleurisy 1, malaria 2, dengue 1, gonorrhoea 1, impetigo 1, adenitis 2, vaccinia 1, scabies 1, concussion 1, septic meningitis 1, urticaria 1, prickly heat 1, amoebic dysentery 1, constipation 1, abscess of jaw 1, herpes 1, and no appreciable disease 3.

In this series there were 13 deaths:—from cerebral syphilis 1, gastro-enteritis 2, acute pneumonia 3, pneumococcal meningitis 5, bacillary dysentery 1, and septic meningitis 1.

The remainder were discharged or transferred to other Hospitals.

The following table shows the admissions since the opening of the Hospital:—

Diseases	1913 6 months	1914	1915	1916	1917	1918	1919	1920	1921
Cholera ...	32	126	4	...	2	...	45	8	...
Small-pox ...	1	13	12	70	30	10	11	3	139
Plague ...	...	5	16	11	26	66	7	30	16
Chicken-pox ...	...	...	...	95	35	28	18	39	98
Diphtheria ...	...	...	...	...	3	1	2	15	20
Cerebro-spinal Fever.	...	...	...	...	5	...	14	27	57
Influenza ...	...	...	...	...	...	70	23	14	5
Measles ...	...	...	...	...	...	...	...	...	39
Erysipelas ...	...	...	...	...	...	...	...	...	9
Mumps ...	...	...	...	...	...	...	...	...	25
Whooping Cough.	...	...	...	...	...	...	...	...	1
Enteric Fever ...	...	...	...	...	...	...	...	...	1
Pulmonary Tuberculosis	...	...	...	...	...	...	...	...	5
Other diseases	9	48	21	28	19	34	55	46	61
Total ...	42	192	53	204	120	209	175	182	476

Staff

W. Faulkner, J. P. Nonis, and C. W. Francis, Hospital assistants, resigned during the year and J. H. B. Law and E. Jacob were appointed as Hospital assistants.

J. T. de Souza, Gatekeeper resigned in November.

Mrs. Toft returned from leave in May and resumed duty as Matron.

Buildings and Compound

The new Cholera Ward was completed, and the new Plague Ward, 2 new observations wards, new Ward-boys quarters, and new kitchen quarters in the medical superintendent's bungalow are nearing completion.

General

The year has been a busy one for the Hospital staff and I am very well satisfied with the manner in which they have carried out their respective duties. A number of the ward attendants were dismissed during the year for disciplinary reasons chiefly owing to the necessity for maintaining strict discipline during the small-pox epidemic.

I have the honour to be,
Sir,
Your obedient servant,

W. DAWSON,
Medical Superintendent,
Middleton Hospital.

20th April, 1922.

THE MUNICIPAL HEALTH OFFICER,
SINGAPORE.

SIR,

I have the honour to submit the following report on Anti-Mosquito measures carried out during the year 1921. The Anti-Malarial work was carried out as in former years by Dr. Hunter and since the dissolution of the Anti-Mosquito Committee in May, 1921, the responsibility for all Anti-Mosquito work has devolved on the Municipal Health Officer. Apart from purely anti-malarial work, Dr. Macdonald carried out the Anti-Mosquito work from January to May, 1921, under the Principal Civil Medical Officer when he was seconded from Government to Municipal service where he carried out the same work from May to December. For the purposes of a short summary of the work done during the year, mosquitos are divided according to Dr. Malcolm Watson's classification into 3 Groups:—

1. Malaria carrying Anophelines which breed in the clear unpolluted water of springs, etc.

2. Mosquitos of artificial containers.

3. Stagnant swamp and pool breeding mosquitos.

Group I.—In the campaign against mosquitos of this group, work has gone on steadily throughout the year, and the works undertaken have in every case been subsequent to the finding of dangerous malaria carrying Anophelines to which in several instances notably Mackenzie Road Pumping Station, Watten Estate and Mandai Quarry cases of malaria had been definitely attributed.

Permanent works have been completed or are nearing completion in the following areas:—

Tyersall Ravine to King's Road.—Extension of open concrete channel.

Holland Park Estate.—Subsoil drainage with concrete swamp and extension of open concrete channel.

Jervois Road Area No. 1.—Extension of open concrete channel with branch drains.

Jervois Road Area No. 2. adjoining Nathan Road.—Subsoil drainage and open concrete channel.

Bukit Timah Road Filters.—Subsoil drainage and open concrete channel

Mandai Quarry.—Subsoil drainage, concrete sumps, open concrete channels and earth works.

A maculatus had been found breeding freely in the ravine adjoining the coolie lines and malaria was causing much inefficiency in the labour force at the Quarry.

Mackenzie Road Pumping Station.—Subsoil piping.

Watten Estate.—Subsoil piping, concrete sumps and open concrete channels.

Tyersall Ponds.—Cutting, levelling, clearing, subsoil piping, concrete sumps, and open concrete channels.

Tanglin Barracks Area No. 1.—Subsoil piping and open concrete channel.

Tanglin Barracks Area No. 2.—Subsoil piping and open concrete channel.

The old drained areas were patrolled regularly throughout the year and many minor repairs were carried out.

Group II.—The campaign against mosquitos of this group and particularly against the ordinary house mosquito the Stegomyia was carried on throughout the year under the supervision of Dr. Macdonald and two European Assistants.

The Town was divided into 52 districts and in each district a Straits-born Chinese supervisor and a gang of 150 coolies carried out the routine house to house inspection. Towards the end of the year it was decided to reorganise this work in order to avoid reduplication of house to house inspection and for reasons of economy.

The original staff was dispensed with and six new Sanitary Inspectors were engaged. The Sanitary Inspector's numbering 25 in all have their special districts and search for mosquito breeding places in houses and compounds is now part of their routine duties.

Group III.—In the campaign against mosquitos of this group, the work done comes under three distinct head:—

1. Clearing.
2. Drainage and filling.
3. Oiling.

1. Extensive clearing of undergrowth and trees was done in the following areas:—

Orange Grove Road, Rochalie Drive, Gallop Road, Fort Katong, Fort Canning, Government House Domain, Chandu Factory, Singapore Harbour Board Property, Scott's Road, Tan Tock Seng's Hospital, Mandalay Road, Nassim Road, Tanglin Road, Evelyn Road, Stevens Road, Anderson Road, Orchard Road, Angullia Park, Chatsworth Road, Keith's Swamp, Kampong Java Road, Bukit Timah Road, Tanglin Club, Mackenzie Road, Mount Rosie, Monk's Hill, Mount Pleasant, Morse Road, River Valley Road, Moulmein Road, Rangoon Road, Ballestier Road, Cuppage Road, Lermit Road, Cluny Road, Bukit Pasoh and Blair Road.

2. Drainage and filling operations were carried out on the following areas:—

Fort Katong, Mandalay Road, Spottiswoode Park, Nassim Road, Ballestier Road, Thomson Road, Geylang Road, Stevens Road, Anderson Road, Mount Rosie, Mount Pleasant and Bukit Pasoh.

3. Oiling operations were carried out in the following areas:—Spottiswoode Park, Cairn Hill Road, Dunlop Street, Victoria Street, Kallang Road, Collyer Quay, Telegraph Street, Geylang Road, Keith Swamp, Jalan Besar, Mount Rosie, Serangoon Road, Syed Alwi Road, Myer Road, Arthur Road, Moulmein Road, Perak Road, General Hospital, Outram Road, Rangoon Road, Ballestier Road, Bukit Pasoh, Blair Road, Orchard Road, Cuppage Road, Tunggal Road, Silat Road, Tanglin Road and Kampong Bahru Road.

I have the honour to be,

Sir,

Your obedient servant,

W. DAWSON,

Acting Deputy Health Officer.

MUNICIPAL HEALTH OFFICE,

SINGAPORE, *12th April, 1922.*

TO

THE HEALTH OFFICER,

SINGAPORE.

SIR,

It is my privilege as well as duty to submit my second Annual Report for the year 1921 dealing with the general condition and upkeep of the Municipal Markets, inspection of foodstuffs exposed for sale in them, and also with the periodical inspection of all shops, etc. in Municipal limits in which foodstuffs are exposed for sale, including auction rooms and Cold Storage Depots.

MUNICIPAL MARKETS

(a) Cleansing

The markets generally speaking have been kept in a wholesome and sanitary condition, the market coolies attending to the general flushing, the whitewashing of fish-slabs monthly, and the painting of salted vegetable stalls, poultry stands and rubbish basket stands as and when required.

On Chinese New Year's day February 8th all the markets were cleared of all goods and subjected to a rigorous cleansing. Rats to the number of 1165 were caught and killed during this time. Platforms have now been placed at my suggestion under all stalls to assist thorough flushing and being limewashed quarterly have reduced considerably the breeding of vermin and added to the orderly appearance of the stalls.

(b) Repairs

CLYDE TERRACE MARKET.

The whole market, including poultry stands was whitewashed and railings painted, new awnings supplied to Fish section, and all stalls painted in January.

Three new beef and five new mutton stalls provided. Gutterings and downspouts in Fish section repaired. All floors and drains repaired where broken.

Two sliding gates in poultry section repaired. All tables, stalls etc., recovered with zinc or mended as required.

ELLENBOROUGH MARKET.

All stalls and stands scraped and painted in February.

All sliding gates taken down, scraped, painted, oiled, and new rollers fitted where necessary. Cement bases to supporting columns broken down and rebuilt.

In November the sliding gates in Eating section were taken down and repaired.

Stalls 164, 171, 173, 169 and 170 repaired and recovered with zinc.

All leaks in roof stopped, and corroded sheets of galvanized iron taken down and replaced by new. Floors filled in and re-cemented where necessary. Three salt water tanks for washing fish erected on bank of river.

TELOK AYER MARKET.

All broken floors in main market and Fish section repaired. Roof and iron framework of stalls repaired and painted.

Concrete of Stalls Nos. 38 & 62 replaced.

This work was all done by Municipal coolies.

KANDANG KERBAU MARKET.

Railings painted. Seven new awnings supplied and four new beef stalls. Fish slab No. 12 repaired and some small leaks in roof attended to.

ORCHARD ROAD MARKET.

One sliding gate repaired. Whole market and all stalls, fountain, railings, etc. painted or colour-washed.

ROCHORE MARKET.

Underside of roof whitewashed and all walls and supporting columns colourwashed.

ALL MARKETS.

Gas and water services attended to as and when required. The respective departments being notified by memo of any irregularity.

GENERAL CONDITION.

There is a visible improvement I am proud to record in the general aspect of the markets, all the repairs detailed in special report at end of last year with the exception of Telok Ayer having been executed. The stalls of this market were painted and the floors repaired by Municipal Coolies, but those were withdrawn for more urgent work in connection with H. R. H. The Prince of Wales' visit.

(c) Unsound foodstuffs

During the period under review over 24,100 catties of unsound foodstuffs were removed and destroyed from the markets, just over 50% being wetfish the remainder consisting chiefly of meat, fruit and vegetables. The stall-holders are now more ready and willing to surrender on demand unsound goods and consequently prosecutions are not so frequently urged. 124 stall-holders were convicted of exposing for sale unsound foodstuffs and fines amounting to $353—were inflicted. Nearly all offenders are petty traders and are gradually being eliminated from the markets under licensing scheme.

(d) Foodstuffs

The quantity of foodstuffs passing through markets would seem to be well gauged, approximately the same amount passing through annually. This year however the value has dropped 23% on last year's figures. This would indicate the cost of living to be just under 60% higher than pre-war

level. I submit a table below showing highest and lowest prices ruling for some of the staple articles of diet.

Articles	1921 Highest price	Lowest price
Rice	$11.00 per picul	$9.00 per picul
Beef	0.40 per lb.	0.30 per lb.
Mutton	0.70 ,,	0.45 ,,
Pork	0.80 per catty	0.65 per catty
Coffee	0.90 ,,	0.80 ,,
Tea	0.60 per pkt.	0.28 per pkt.
Sugar	0.28 per catty	0.11 per catty
Salt	0.06 ,,	0.04 ,,
Potatoes	0.18 ,,	0.12 ,,
Yams	0.08 ,,	0.04 ,,
Onions	0.22 ,,	0.10 ,,
Geese	5.00 each	3.00 each
Ducks	18.60 per dozen	12.00 per dozen
Pigeons	1.60 per pair	0.50 per pair
Eggs (hens)	0.84 per dozen	0.54 per dozen
Capons	1.10 per catty	0.75 per catty
Fowls	2.10 each	1.30 each

(e) Licences

On July 15th after having been postponed for a fortnight, the new licensing scheme whereby every stallholder became a monthly tenent at discretion of the Commissioners, and was required to produce two photographs, one for his licence and one for the Register came into force, and contrary to expectations was inaugurated without any friction. The stall-holders were frequently interviewed and the details explained to them, and several minor difficulties were smoothed out. Considering the short notice given before commencing this reorganization, (about one month) great credit is due to the market staffs for getting particulars together and arranging details so that everything worked to programme. Commencing at Orchard Road on 15th and finishing up with Rochore on Sunday 24th, 1446 licences were issued, photographs attached, initialled by me and monies collected to the total of $9,397.00 for the half month. This process will be repeated annually in January.

This scheme has done away with the various methods of collecting taxes on fish which was in vogue previously and now all market stalls or slabs are rented on a uniform basis. Licences are continually exposed as a condition of issue and by this means stall-holders can always be traced. Heretofore a notice of summons was a signal for the offender to absent himself till he thought matters had blown over.

The effect of this licensing on the revenue derived from the markets is shown by the following tables:—

COMPARATIVE STATEMENT OF REVENUE FROM ALL MARKETS BEFORE (1) AND AFTER (2) LICENSING, 1921

MARKETS	Stall Rent	Hawkers	Poultry	WET FISH				TOTAL
				Slab Rent	Small Prawns	5% Commission	10% Commission	
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
1. Clyde Terrace	28 341 50	6,335 70	Included in Stall Rent	5,367 70	1,293 54	30,286 59	516 31	72,141 34
2. Do.	28,043 00	6,000 73	Do.	4,858 75	Nil	23,679 70	Abolished †	62,582 18
1. Ellenborough	15,218 70	2,216 95	1,485 91*	8,753 70	146 77	49,549 41	606 90	77,978 34
2. Do.	16,432 00	2,694 40	2,700 90	2,755 00	...	36,696 69	Abolished †	61,278 99
1. Teluk Ayer	14,224 40	4,361 75	Included in Stall Rent	1,172 ·54	Nil	4,094 22	4,897 97	23,901 88
2. Do.	12,044 00	3,170 50	Do.	1,020 00	Nil	2,653 83	Abolished †	18,888 33
1. Orchard Road	4,074 40	818 90	Do.	...	Nil	983 60	243 64	6,720 54
2. Do.	5,369 00	1,240 00	Do.	597 50	Nil	Abolished †	Abolished †	7,206 50
1. Kandang Kerbau	3,550 05	365 20	Do.	...	Nil	1,922 11	105 07	5,942 43
2. Do.	6,687 50	125 00	Do.	877 50	Nil	Abolished †	Abolished †	7,690 00
1. Rochore	1,995 28	1,554 15	Nil	...	Nil	335 35	252 84	4,137 62
2. Do.	3,480 00	2,805 00	Nil	330 00	Nil	Abolished †	Abolished †	6,615 00

Total for all markets from 1st January to 15th July } 1921	A.	$190,822 15
Do. do. 16th July to 31st December } 1921	B.	$164,261 00

* Per capita roadside tax abolished and replaced by stall rent of $15.00 p.m.

† 5% and 10% Commission abolished and replaced by slab rent of $5.00 p.m.

Note.—The apparent loss to Revenue on half years working is $26,561.15 but it must be borne in mind that a fortnight's collections have to be deducted from the total A and added to total B for the period 1—15 July. This has not been done as it would detract from the comparison intended to be shewn.

In addition to changes in mode of collecting taxes as shown in above table, all night hawkers adjacent Clyde Terrace Market in Beach Road were given notice that their licenses would expire at end of month and pitches be found for them in abutting streets. $30.00 licences were thus done away with. The barber's shop in Telok Ayer also received notice but was given permission to use his place as an eating shop. The rent was consequently raised from $15.00 to $30.00 per mensem. It will be noticed by the appended summary of licenses at end of year that for the most part the dry goods stalls ($30.00) have been vacated evidently because of the rent. These are gradually being segregated and thus provision made for a different class of stall as demand requires.

The crowded hawker's shed at Telok Ayer was re-arranged, a number of eating stalls being transferred to vacant fish slabs in the Fish section. This allowed of more space being allotted to stall holders and more comfort accrued to the many customers who procure their mid-day meal there.

Another new Tiffin shed is being erected opposite Finlayson Green which will tend to ease the overcrowding at crush hour.

In Ellenborough Market some disused vegetable stalls from Telok Ayer were installed for boiled fish sellers thus releasing 12 wet-fish slabs. Some dry goods stalls which somehow got into the vegetable section were, after some little trouble allotted vacant stalls in their proper section.

(f) Staff

Three jagas at Clyde Terrace who were suspected of being in collusion with thieves were dismissed and substitutes have been found.

Market coolies have reported sick or been attended to for minor injuries by the Assistant Health Officer 38 times during the year.

On the licensing scheme coming into operation it was found that the market staffs could be reduced. The following shows the reduction in each market and the saving in salaries.

Market	Staff dismissed	Combined salaries
Clyde Terrace	6	$339.75
Ellenborough	6	485.00
Telok Ayer	3	180.00
Kandang Kerbau	1	70.00
Rochore	1	70.00
	17	$1,144.75

The Market Keepers have performed their various duties satisfactorily.

(g) Market Bye-laws

169 offences against the Market Bye-laws were the cause of a similar number of prosecutions resulting in total fines of $326.00 being imposed. Although I have tried to abolish petty prosecutions, I find they act as a

deterrent the stall holders not caring much for the tedious wait in court and so a greater tidiness of stalls is procured by threat of summons.

Office Routine

Every afternoon unless a call from outside is made is given to writing up daily report, posting details in report books and tabulating particulars, and receiving and answering letters.

In addition to this routine work the following special reports which called for much time were prepared and sent in to the officers requiring same.

When sent	To whom sent	Particulars
May ...	Ag. P. M. C. ...	Report on re-organization of market together with sketch plans, showing number and position of stalls, class of goods sold, rent paid and clan of stall-holder.
June ...	H. O. ...	Report on poultry trade from N. Indies.
September ...	P. M. C. ...	Traffic return at Clyde Terrace Market from 1st to 7th September inclusive, showing to 2 decimal places for ½ hour periods throughout every kind of vehicle stopping to pick up or set down passengers or goods at any or all of the nine exits. Also standing vehicles at specified hours.
October ...	D. of S. cost of living enquiry department.	Return of all foodstuffs, etc. Daily and monthly price lists, comparative statement of highest and lowest prices and any other information required.

Over 160 letters in connection with the licences were received and for the most part disposed of satisfactorily. Applications for stalls were all tabulated in order received so that first in, first served was as far as possible adhered to.

Town

Much more effective town inspection was carried on this year being more acquainted with the various methods adopted by the various races who sell foodstuffs. A total of 147,794 articles of every description of unsound foodstuffs has been destroyed. Periodical raids on hawkers pitches have been responsible for much unsound stuffs being seized. It is very difficult to institute proceeding against these men who have "look outs" posted to giving warning of Inspector's approach and when one arrives only the "barang" is to be found, the vendors having absconded.

Again I have to thank all officers with whom I have come in contact in the performance of my duties for their kindly and ready assistance.

I attach summary of prosecutions undertaken, tables of unsound foodstuffs destroyed, a return of some of the foodstuffs passing through the markets and a table showing the licenses issued and the number of vacant stalls in all markets as on 31st December.

I have the honour to be,

Sir,

Your obedient servant,

M. N. MACMAHON, CERT: R.S.I.,

Food and Market Inspector.

SUMMARY OF PROSECUTIONS FOR THE YEAR ENDING 31ST DECEMBER, 1921

Month	Municipal Ordinance		Municipal Bye-laws	Total Cases	Total Convictions	Total Postponed	Total Withdrawn	Total Warrant	Total Fines
	Section 180	Section 176							
January	32	...	16	48	33	6	9	...	$123.50
February	15	...	5	20	12	...	8	...	41.00
March	10	...	25	35	33	...	2	...	83.00
April	7	...	...	7	5	...	2	...	18.00
May	9	...	23	32	27	3	2	...	84.00
June	16	...	16	32	20	8	4	...	44.50
July	12	...	17	29	19	...	10	...	61.50
August	4	1	6	11	10	...	1	...	37.00
September	4	1	11	16	13	...	3	...	38.00
October	10	1	19	30	27	1	2	...	86.00
November	3	1	16	20	18	2	...	...	36.00
December	2	...	15	17	17	...	...	...	40.00
	124	4	169	297	234	20	43	...	$712.50

M. N. MACMAHON,

Food and Market Inspector.

LICENSE RETURN (YEAR 1921) SUMMARY OF LICENSES ISSUED

Fee	$30	$15	$15	$12	$15	$10	$6	$15	$10	$5	$15	$30	$5	$5	$5	$10	Total No.	Total
Market	Dry goods	Salted Vegetables	Beef	Mutton	Pork	Curry stuff	Bean cakes	Poultry	Vegetable and fruit	Eggs	Money Changer and Cigar	Eating	Fish	Shell Fish	Tripang	Hawker	Licenses issued	Collected
																		$ cts.
Clyde Terrace ...	98	4	26	3	15	4	3	15	42	10	5	16	164	3	1	61	470	6,409 00
Ellenborough ...	49	2	1	Nil	22	1	6	30	53	15	3	13	108	10	1	41	355	4,386 00
Telok Ayer ...	28	3	3	3	8	1	1	8	55	2	...	15	33	1	...	54	215	2,942 00
Orchard Road ...	6	1	7	2	4	1	3	4	32	...	2	5	22	...	...	20	109	1,282 00
Kandang Kerbau	15	2	4	4	7	3	2	2	32	...	1	4	32	...	...	3	111	1,410 00
Rochore ..	5	...	...	...	1	...	...	...	6	...	1	13	12	...	...	44	82	1,130 00
																		$17,559 00

M. N. MacMAHON,
Food and Market Inspector.

SUMMARY OF VACANT STALLS—END OF 1921

Market	Dry goods	Salted Vegetables	Beef	Mutton	Pork	Curry stuff	Bean cakes	Poultry	Vegetable and fruit	Eggs	Money Changer and Cigar	Eating	Fish	Shell Fish	Tripang	Hawker	TOTAL VACANT
Clyde Terrace ...	19	...	2	1	5	...	...	9	...	6	...	...	28	...	...	69	139
Ellenborough ...	11	...	...	...	...	...	...	...	1	...	...	1	1	...	...	..	14
Telok Ayer ...	13	...	1	1	2	...	...	...	16	...	...	...	20	...	...	...	63
Orchard Road ...	...	...	...	...	...	...	...	5	1	...	...	...	...	...	...	...	6
Kandang Kerbau	19	...	4	...	5	...	...	...	1	1	...	1	...	...	...	..	31
Rochore ...	1	...	...	...	...	...	...	...	1	...	...	5	...	...	...	35	42
																Grand Total ...	285

M. N. MACMAHON,
Food and Market Inspector.

UNSOUND FOODSTUFFS DESTROYED—1921

—	Veal and Beef ctts.	Lamb and Mutton ctts.	Pork ctts.	Wet-fish ctts.	Salt fish ctts.	Fruit ctts.	Vegetable ctts.	Eggs No.	Poultry	TINNED GOODS		Pheasant	Game pies	Bottles pickles, etc.	Hams	Flour	Sundries
										Cases	Tins						
Clyde Terrace ...	1,258½	...	92¼	6,534¼	382	122	604	74	...	...	...	...	..	...	...	...	...
Ellenborough ...	14	...	103¼	5,596	197	220	605	728	3	...	...	...	...	...	...	...	...
Telok Ayer ...	3½	...	48¼	362	79½	2,629	2,733	177	27	...	5	...	...	...	...	...	..
Kandang Kerbau	16	10½	57	416½	20	40	108	24	1	...	...	...	...	...	...	...	...
Orchard Road ...	107¾	...	24¼	184	4½	76	115	...	...	...	...	...	...	...	...	...	...
Rochore ...	...	...	...	...	...	128	237	...	...	...	...	...	...	...	...	...	...
	1,399¾	10½	325	13,092¾	683	3,215	4,402	1,003	31	...	5	...	...	...	...	... lbs.	...
Town ...	1,079¼	12,356	162	85½	199	1,419	119,524	...	...	853	8,962	1,403	13	919	3	50	767
	2,479	12,366½	487	13,178¼	882	4,634	123,926	1,003	31	853	8,967	1,403	13	919	3	50	767

M. N. MACMAHON,
Food and Market Inspector.

RETURN OF FOODSTUFFS PASSING THROUGH MARKETS DURING 1921

MARKETS	Wetfish ctts.	Boiled fish ctts.	Salt fish ctts.	Beef ctts.	Mutton ctts.	Pork ctts.	Fowls	Capons	Geese	Ducks	Pigeons	Turkeys	Bean cakes ctts.	Bean sprouts ctts.	Fresh prawn ctts.	Approximate Value
							HEADS									$ cts.
Clyde Terrace...	2,962,935	21,169	50,121	668,123	16,236	350,401	67,807	—	352	33,131	—	—	309,710	58,500	17,308	1,804,081 12
Ellenborough ...	4,975,069	88,714	360,780	26,302	—	589,507	36,593	10,525	3,420	48,537	—	—	—	—	—	2,301,968 25
Telok Ayer ...	341,072	4,566	79,020	35,406	30,338	341,718	30,508	—	162	24,117	6,073	6	—	—	—	454,819 58
K. Kerbau ...	218,045	6,644	—	58,002	23,989	138,831	4,803	1,276	—	305	—	—	—	—	—	253,558 33
	8,497,121	121,093	489,921	787,933	70,563	1,420,457	139,711	11,801	3,934	106,090	6,073	6	309,710	58,500	17,308	4,814,427 28

M. N. MACMAHON,
CERT R. SAN. INST.
Food and Market Inspector.

(69-E)

RETURN OF NOTICES SERVED AND COMPLIED WITH ETC., DURING THE YEAR 1921

Nature of Notice	Brought forward from last year	Served during the year	Total	Complied with during the year	Carried forward to next year	REMARKS.
Nuisance	303	325	628	498	130	
Drain	3	...	3	3	...	
Latrine	5	28	33	27	6	
Limewash	1,905	10,823	12,728	10,852	1,876	
Well	...	4	4	...	4	
Intimations	62	1,759	1,821	1,405	379	37 cancelled for Nuisance notices.
Total ...	2,278	12,939	15,217	12,785	2,395	

A. J. CUCKNEY,

Chief Sanitary Inspector.

MUNICIPAL HEALTH OFFICE.

ABSTRACT REPORT OF THE INSPECTORS OF NUISANCES FOR THE YEAR 1921, SHOWING NUMBER OF PROSECUTIONS, CONVICTIONS, AND AMOUNT OF FINES IN EACH DISTRICT

OFFENCES.	District I.				District II.				District III.				District IV.			
	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.
				$				$				$				$
Filthy houses, accumulation of rubbish and drains in bad order ..	5,216	48	46	183	5,867	71	69	221	6,550	121	112	412	5,819	73	63	220
Allowing night-soil to accumulate on the premises.	..	..	..	..	..	..	..	..	2	2	2	10	..	..	..	..
Using night-soil as manure	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Obstruction in public thoroughfares, verandahs and drains	..	96	89	347	..	71	67	307	..	17	17	56	..	15	13	43
Non-compliance with notices	22	22	20	43	20	20	19	33	22	22	21	7	..	..	..	..
Non-compliance with nuisance order	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Carrying on offensive trades without a license ..	1	1	0	0	..	..	..	..	2	2	2	10	..	..	..	..
License not exhibited	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Adulteration of milk	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cases of unwholesome food	..	..	..	..	..	..	..	..	..	1	1	10	..	35	19	98
Offences in connection with public markets ..	..	..	..	..	..	..	..	..	..	..	..	..	..	35	34	78
Failing to report infectious Disease	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Dairy By-laws	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Vaccination Regulations ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Registration of Births and Deaths Ordinance	..	1	1	0	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of Regulations for control of stables, cattle sheds, etc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of By-laws for the control of Bakeries ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of By-laws for the control of Dhobies ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Hawkers By-laws	..	156	148	337	..	127	96	255	..	149	132	242½	..	237	223	426
Breaches of By-laws for the control of Sick Receiving Houses	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of By-laws for the control of Coffee Shops and Eating Houses	14	14	13	47	15	15	13	63	..	..	..	..	3	3	2	4
Breaches of Regulations for control of Theatres ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Conservancy By-laws	..	2	2	26	..	..	..	..	..	..	..	..	..	3	0	0
Selling Vegetables within 50 yards of market ..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3	10
Breaches of section 4 of Ordinance 38 of 1919 ..	1	1	0	0	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of section 8 D. of Mosquito Ordinance 174 of 1919	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	5,254	341	329	983	5,902	304	264	879	6,576	314	287	747½	5,822	404	357	879

OFFENCES.	District V.				District VI.				District VII.			
	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.
				$				$				$
Filthy houses, accumulation of rubbish and drains in bad order ..	5,447	139	132	571	8,293	92	87	323	6,167	103	96	454
Allowing night-soil to accumulate on the premises.	..	..	..	..	..	..	..	..	..	..	..	..
Using night-soil as manure	..	..	..	..	..	..	..	..	..	..	..	..
Obstruction in public thoroughfares, verandahs and drains	..	90	88	170	..	89	80	280	..	44	29	84
Non-compliance with notices	57	57	57	89	18	18	17	20	172	172	169	231
Non-compliance with nuisance order	1	1	1	10	..	..	..	..	..	..	..	..
Carrying on offensive trades without a license ..	1	1	1	35	3	3	2	9	4	4	3	8
License not exhibited	..	..	..	..	..	..	..	..	..	..	..	..
Adulteration of milk	..	..	..	..	..	..	..	..	..	..	..	..
Cases of unwholesome food	..	..	..	..	..	4	2	3	..	..	..	..
Offences in connection with public markets ..	..	..	..	..	..	47	45	96	..	..	..	..
Failing to report infectious Disease	..	..	..	..	..	..	..	..	1	1	1	50
Breaches of the Dairy By-laws	..	1	1	25	..	..	..	..	..	..	..	..
Breaches of the Vaccination Regulations ..	..	1	1	0	..	..	..	..	..	..	..	..
Breaches of the Registration of Births and Deaths Ordinance	..	1	0	0	..	..	..	..	..	1	1	0
Breaches of Regulations for control of stables, cattle sheds, etc.	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of By-laws for the control of Bakeries ..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of By-laws for the control of Dhobies ..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Hawkers By-laws	..	405	342	648	..	334	296	692	..	87	64	155
Breaches of By-laws for the control of Sick Receiving Houses	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of By-laws for the control of Coffee Shops and Eating Houses	18	18	15	48	25	25	23	110	54	54	45	154
Breaches of Regulations for control of Theatres ..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Conservancy By-laws	..	..	..	..	..	..	..	..	..	..	..	..
Selling Vegetables within 50 yards of market ..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of section 4 of Ordinance 38 of 1919 ..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of section 8 D. of Mosquito Ordinance 174 of 1919	..	..	..	..	..	..	..	..	..	..	..	..
	5,524	714	638	1,596	8,339	612	552	1,533	6,398	466	408	1,136

OFFENCES.	District XV.				District XVI.				Total.				
	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	
				$				$				$	cts.
Filthy houses, accumulation of rubbish and drains in bad order ..	9,461	167	155	475	7,103	6	6	14	59,923	820	766	2,873	..
Allowing night-soil to accumulate on the premises.	..	..	..	..	..	..	..	..	2	2	2	10	..
Using night-soil as manure	5	5	4	15	21	21	19	88	26	26	23	103	..
Obstruction in public thoroughfares, verandahs and drains	..	32	31	136	..	..	..	..	..	454	414	1,423	..
Non-compliance with notices	115	115	114	57	14	14	13	10	440	440	430	490	..
Non-compliance with nuisance order	1	1	1	0	..	..	..	..	2	2	2	10	..
Carrying on offensive trades without a license ..	35	35	30	144	9	9	9	42	55	55	47	248	..
License not exhibited	..	..	..	..	..	..	..	..	..	..	..	..	..
Adulteration of milk	..	..	..	..	..	1	1	15	..	1	1	15	..
Cases of unwholesome food	..	..	..	..	..	..	..	..	..	40	22	111	..
Offences in connection with public markets ..	..	..	..	..	..	..	..	..	..	82	79	174	..
Failing to report infectious Disease	..	..	..	..	..	..	..	..	1	1	1	50	..
Breaches of the Dairy By-laws	..	..	..	..	..	2	2	20	..	3	3	45	..
Breaches of the Vaccination Regulations ..	..	..	..	..	..	..	..	..	..	1	1	..	..
Breaches of the Registration of Births and Deaths Ordinance	..	2	2	0	..	2	1	0	..	7	5	..	..
Breaches of Regulations for control of stables, cattle sheds, etc.	45	45	37	75	36	36	36	87½	81	81	73	162	50
Breaches of By-laws for the control of Bakeries ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of By-laws for the control of Dhobies ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Hawkers By-laws	..	185	174	383	..	5	5	10	..	1,685	1,480	3,148	50
Breaches of By-laws for the control of Sick Receiving Houses	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of By-laws for the control of Coffee Shops and Eating Houses	49	49	45	133	9	9	8	18	187	187	164	577	..
Breaches of Regulations for control of Theatres ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Conservancy By-laws	..	..	..	..	..	..	..	..	..	5	2	26	..
Selling Vegetables within 50 yards of market ..	..	..	..	..	..	..	..	..	..	3	3	10	..
Breaches of section 4 of Ordinance 38 of 1919 ..	..	..	..	..	..	..	..	..	1	1	0	..	..
Breaches of section 8 D. of Mosquito Ordinance 174 of 1919	..	..	..	..	1	1	0	0	1	1	0	..	..
	9,711	636	593	1,418	7,193	106	100	304½	60,719	3,897	3,518	9,476	..
									77,044	2,891	2,589	8,772	..
GRAND TOTAL ..									137,763	6,788	6,107	18,248	..

NOTE.—Costs are not included in the "Amount of Fines."

A. J. CUCKNEY,
Chief Sanitary Inspector.

MUNICIPAL HEALTH OFFICE.

Abstract Report of the Inspectors of Nuisances for the year 1921, showing Number of Prosecutions, Convictions, and Amount of Fines in each District

Offences.	District VIII.				District IX.				District X.			
	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.
				$				$				$
Filthy houses, accumulation of rubbish and drains in bad order	9,179	135	129	482	8,405	34	33	139	9,677	37	34	123
Allowing night-soil to accumulate on the premises.	..	..	..	..	..	..	..	..	..	..	..	..
Using night-soil as manure	..	..	..	..	..	..	..	..	..	..	..	..
Obstruction in public thoroughfares, verandahs and drains	..	10	10	35	..	11	10	37	..	11	11	40
Non-compliance with notices	45	45	42	86	4	4	4	11	19	19	19	5
Non-compliance with nuisance order	..	..	..	..	..	..	..	..	..	..	..	..
Carrying on offensive trades without a license ..	..	..	..	..	..	..	..	..	..	..	..	..
License not exhibited	..	..	..	..	..	..	..	..	..	..	..	..
Adulteration of milk	..	..	..	..	..	..	..	..	..	..	..	..
Cases of unwholesome food	..	..	..	..	..	..	..	..	..	41	34	152½
Offences in connection with public markets ..	..	..	..	..	..	..	..	..	..	65	65	127
Failing to report infectious Disease	2	2	1	5	..	..	..	..	..	..	..	..
Breaches of the Dairy By-laws	..		..	..	..	..	..	..	..	..	..	..
Breaches of the Vaccination Regulations ..	..	4	4	0	..	..	..	..	..	6	4	0
Breaches of the Registration of Births and Deaths Ordinance	..	3	3	0	..	1	1	0	..	3	3	0
Breaches of Regulations for control of stables, cattle sheds, etc.	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of By-laws for the control of Bakeries ..	1	1	1	15	..	..	..	..	..	..	..	..
Breaches of By-laws for the control of Dhobies ..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Hawkers By-laws	..	52	42	98	..	79	71	186	..	405	383	915
Breaches of By-laws for the control of Sick Receiving Houses	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of By-laws for the control of Coffee Shops and Eating Houses	16	16	15	38	4	4	4	10	37	37	27	91
Breaches of Regulations for control of Theatres ..	..	..	..	..	..	..	..	..	..	..	..	..
Exhuming bones without order from court ..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Conservancy By-laws	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Food and Drugs Regulations ..	..	1	1	10	..	..	..	..	..	..	..	..
Selling Vegetables within 50 yards of market ..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of section 4 of Ordinance 38 of 1919 ..	..	..	..	..	..	..	..	..	..	..	..	..
	9,243	209	188	769	8,413	133	126	383	9,733	624	579	1,483½

Offences.	District XI.				District XII.				District XIII.				District XIV.			
	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.
				$				$				$				$
Filthy houses, accumulation of rubbish and drains in bad order	7,370	49	44	185	8,289	124	114	369	8,708	98	91	382	8,094	96	88	352
Allowing night-soil to accumulate on the premises.	..	..	..	..	2	2	1	3	3	3	2	8	..	..	..	..
Using night-soil as manure	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	3
Obstruction in public thoroughfares, verandahs and drains	..	47	44	234	..	9	9	39	..	4	3	9	..	72	65	336
Non-compliance with notices	66	66	60	26	31	31	23	27	105	105	101	94	100	100	92	139
Non-compliance with nuisance order	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Carrying on offensive trades without a license	2	2	2	3	1	1	1	1	4	4	3	10	1	1	1	4
License not exhibited	..	..	..	..	..	..	..	..	2	2	2	10	..	..	..	..
Adulteration of milk	..	..	..	..	..	..	..	..	..	10	10	151	..	1	1	25
Cases of unwholesome food	..	..	..	..	..	..	..	..	..	12	8	73	..	15	7	31½
Offences in connection with public markets	..	..	..	..	..	..	..	..	..	4	4	11	..	13	13	24
Failing to report infectious Disease	..	..	..	..	7	7	5	125	..	..	—	..	7	7	7	100
Breaches of the Dairy By-laws	..	..	..	..	..	..	..	..	..	7	5	68	..	6	4	31
Breaches of the Vaccination Regulations	..	1	1	0	..	3	2	0	..	10	5	0	..	7	2	0
Breaches of the Registration of Births and Deaths Ordinance	..	..	..	..	..	..	..	..	..	2	2	0	..	8	5	0
Breaches of Regulations for control of stables, cattle sheds, etc.	..	..	..	..	..	..	..	..	7	7	7	35	..	..	..	..
Breaches of By-laws for the control of Bakeries	..	..	..	..	..	..	..	..	4	4	4	24	..	..	..	..
Breaches of By-laws for the control of Dhobies	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Hawkers By-laws	..	44	37	87	..	36	36	77	..	19	17	50	..	154	139	374
Breaches of By-laws for the control of Sick Receiving Houses	..	..	..	..	..	..	..	..	1	1	1	25	..	..	..	..
Breaches of By-laws for the control of Coffee Shops and Eating Houses	52	52	43	160½	19	19	18	60	43	43	33	78	27	27	16	53
Breaches of Regulations for control of Theatres	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Exhuming bones without order from court	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Conservancy By-laws	..	2	0	0	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Food and Drugs Regulations	..	..	..	..	..	..	..	..	..	1	1	25	..	1	1	5
Selling Vegetables within 50 yards of market	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	0
Breaches of section 4 of Ordinance 38 of 1919	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	7,490	263	231	695½	8,349	232	209	701	8,877	336	297	1,033	8,230	519	442	1,477½

Offences.	District XVII.				District XVIII.				Total				
	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	
				$				$				$	cts.
Filthy houses, accumulation of rubbish and drains in bad order	7,870	13	12	54	8,479	75	67	215	76,071	661	612	2,301	..
Allowing night-soil to accumulate on the premises.	..	..	..	..	..	..	..	..	5	5	3	11	..
Using night-soil as manure	27	27	21	108	67	67	65	367	95	95	87	478	..
Obstruction in public thoroughfares, verandahs and drains	..	2	2	5	..	2	2	7	..	168	156	742	..
Non-compliance with notices	70	70	67	115	15	15	15	4	455	455	423	507	..
Non-compliance with nuisance order	2	2	2	0	..	..	..	..	2	2	2	0	..
Carrying on offensive trades without a license	52	52	45	272	15	15	9	64	75	75	61	354	..
License not exhibited	2	2	2	6	..	..	..	..	4	4	4	16	..
Adulteration of milk	..	3	3	135	..	6	6	105	..	20	20	416	..
Cases of unwholesome food	..	..	..	..	..	..	..	..	..	68	49	257	..
Offences in connection with public markets	..	..	..	..	..	..	..	..	..	82	82	162	..
Failing to report infectious Disease	..	..	..	..	7	7	7	225	23	23	20	455	..
Breaches of the Dairy By-laws	..	1	1	2	..	14	13	269	..	28	2[illegible]	350	..
Breaches of the Vaccination Regulations	..	3	2	0	..	8	4	0	..	42	24	..	..
Breaches of the Registration of Births and Deaths Ordinance	..	1	1	0	..	2	2	0	..	20	17	..	..
Breaches of Regulations for control of stables, cattle sheds, etc.	42	42	32	77½	10	10	9	53	59	59	48	165	50
Breaches of By-laws for the control of Bakeries	..	..	..	..	1	1	1	10	6	6	6	49	..
Breaches of By-laws for the control of Dhobies	..	..	..	..	..	..	..	..	..	..	..	..	..
Breaches of the Hawkers By-laws	..	7	7	17	..	26	20	32	..	822	754	1,806	..
Breaches of By-laws for the control of Sick Receiving Houses	..	..	..	..	..	..	..	..	1	1	1	25	..
Breaches of By-laws for the control of Coffee Shops and Eating Houses	32	32	23	47	16	16	14	40	246	246	191	577	50
Breaches of Regulations for control of Theatres	..	..	..	..	..	..	..	..	..	..	..	..	..
Exhuming bones without order from court	..	..	..	..	..	1	1	0	..	1	1	..	..
Breaches of the Conservancy By-laws	..	..	..	..	..	..	..	..	..	2	0	..	..
Breaches of the Food and Drugs Regulations	..	..	..	..	..	..	..	..	..	3	3	40	..
Selling Vegetables within 50 yards of market	..	..	..	..	..	..	..	..	..	1	0	..	..
Breaches of section 4 of Ordinance 38 of 1919	2	2	2	0	..	..	..	..	2	2	2	..	..
	8,099	259	222	838½	8,610	265	235	1,391	77,044	2,891	2,589	8,772	..
									60,719	3,897	3,518	9,476	..
Grand Total ..									137,763	6,788	6,107	18,248	..

Note.—Costs are not included in the "Amount of Fines."

A. J. CUCKNEY,
Chief Sanitary Inspector.

RECAPITULATION.

Unlicensed milk-sellers	18
Obstructing 5 ft. way	11
Obstructing public road	6
Selling milk without licence (2) Non-attendance at Police Court ...	1
Unlicensed Cattle-shed	1
Unlicensed Cow-house	1
Failing to carry licence (milk-seller)	2
Unlicensed Hawkers	541
	581

RETURN OF LICENSES (OFFENSIVE TRADES) ISSUED DURING THE YEAR 1921

Nature of License	Number issued	Fee	Amount	REMARKS
		$ cts.	$ cts.	
Blachan	10	24 00	240 00	
Dye House	10	12 00	114 00	1 at 6 months.
Fish Curing	...	36 00	... ...	
Fruit Preserving ...	8	50 00	400 00	
Offal Boiling	3	12 00	36 00	
Rags and Bones ...	1	6 00	6 00	
Sago Factory	6	50 00	275 00	1 at 6 months.
Sheep or Goat Stables ...	2	12 00	24 00	
Tannery	17	50 00	850 00	
Knacker's Yard or place for skinning or disembowelling animals ...	...	12 00	... ...	
Stables, Cattle-sheds, etc:—				
9 horses or cattle or under per head ...	767	1 00	2,185 00	1 at 6 months.
10 to 14 horses or cattle	14	10 00	140 00	
15 to 24 do. ...	18	15 00	270 00	
25 to 50 do. ...	13	25 00	325 00	
Over 50 do. ...	18	50 00	850 00	2 at 6 months.
Lye making	...	12 00	... ...	
Drying and sorting Fish...	5	12 00	60 00	
Storing Fish	...	...	... ...	
Piggery:—				
100 square feet ...	1,075	0 50	537 50	
200 ,, ...	562	1 00	561 50	1 at 6 months.
300 ,, ...	239	1 50	358 50	
400 ,, ...	268	2 00	536 00	
500 ,, ...	129	2 50	322 50	
600 ,, ...	129	3 00	387 00	
700 ,, ...	49	3 50	171 50	
800 ,, ...	74	4 00	296 00	
900 ,, ...	32	4 50	144 00	
1,000 ,, ...	51	5 00	255 00	
1,100 ,, ...	15	5 50	82 50	
1,200 ,, ...	15	6 00	90 00	
1,300 ,, ...	6	6 50	39 00	
1,400 ,, ...	12	7 00	84 00	
1,500 ,, ...	6	7 50	45 00	
1,600 ,, ...	3	8 00	24 00	
1,700 ,, ...	4	8 50	34 00	
1,800 ,, ...	3	9 00	27 00	
1,900 ,, ...	3	9 50	28 50	
2,000 ,, ...	3	10 00	30 00	
2:200 ,, ...	1	11 00	11 00	
2,300 ,, ...	1	11 50	11 50	
2,600 ,, ...	1	13 00	13 00	
3,300 ,, ...	1	16 50	16 50	
4,500 ,, ...	1	22 50	22 50	
Total ...	3,575	...	$9,903 00	

A. J. CUCKNEY,

Chief Sanitary Inspector.