

The Straits Settlements medical report.

Contributors

Straits Settlements. Medical Department.

Publication/Creation

[Place of publication not identified] : [publisher not identified], [1918]

Persistent URL

<https://wellcomecollection.org/works/etgw9ggs>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>



STRAITS SETTLEMENTS.

The Straits Settlements Medical Report for the year 1918.

POPULATION AND HEALTH.

1. The following table gives the estimated population and the birth and death-rates for the years 1917 and 1918:—

SETTLEMENT.	Estimated mean Population.		Birth Nos.		Death Nos.		Birth Ratio per mille.		Death Ratio per mille.	
	1917.	1918.	1917.	1918.	1917.	1918.	1917.	1918.	1917.	1918.
Singapore ...	359,459	369,777	9,474	9,585	12,837	15,372	26'36	25'92	35'71	41'57
Labuan ...	6,796	6,848	210	249	264	198	30'90	36'36	38'84	28'91
Penang ...	149,792	151,210	4,416	4,110	5,351	6,685	29'48	27'18	35'72	44'01
Province Wellesley	137,978	139,538	4,484	4,109	3,914	5,676	32'50	29'45	28'35	40'68
Dindings ...	10,646	11,294	380	349	473	730	35'69	30'90	44'43	64'64
Malacca ...	145,198	149,052	5,862	5,300	7,111	7,633	40'37	35'55	48'97	51'21
Total ...	809,869	827,719	24,826	23,702	29,950	36,294	30'65	28'64	36'98	43'85

The figures for the European population are:—

SETTLEMENT.	Estimated mean Population.		Birth Nos.		Death Nos.		Birth Ratio per mille.		Death Ratio per mille.	
	1917.	1918.	1917.	1918.	1917.	1918.	1917.	1918.	1917.	1918.
Straits Settlements.	8,490	8,708	173	189	81	86	20'38	21'70	9'54	9'88

The population of the last Census (1911) was 711,951, and is estimated at 827,719 for 1918. This is worked out by geometrical progression as for normal times on the basis of the Census figures for 1901 and 1911.

Owing to the departure of Europeans for war service the figures quoted in the second table will be somewhat unreliable and incorrect.

2. The total immigrants from China in 1915 were 95,735.
The total immigrants from China in 1916 were 183,399.
The total immigrants from China in 1917 were 155,167.
The total immigrants from China in 1918 were 58,421.

Births.

3. The births registered during the year numbered 23,702 as compared with 24,826 in 1917. The ratio per mille is 28'64, against 30'65 in 1917 and 28'15 in 1916. The ratio for 1917, viz., 30'65, was the highest since the Registration Law (1897) came into force.

Deaths.

4. The deaths from all causes registered in 1918 were 36,294 as against 29,950 in 1917. This corresponds to a ratio per mille of 43·85, an increase compared with the 1917 figure, viz., 36·98. The ratio for 1915, 29·15, was the lowest since 1899. The average for the last ten years, 1909-1918, was 37·45.

Infantile Mortality.

5. The infantile mortality gives a ratio of 232·68 per mille as against 266·92 per mille in 1917 and 216·72 per mille in 1916 after excluding all children born elsewhere than in the Colony.

The largest infantile mortality was among the Indians, 268·77, the Malays coming next with 258·19. For the previous five years (1913-1917) the infantile mortality was largest among the Malays.

European Officers.

6. Table shewing the sick, invaliding and the deaths of European Officials of all ranks:—

	1917.	1918.
(1) Total number of officials on establishment	435	437
(2) Average number resident in the Colony	338	275
(3) Total number on sick list	164	222
(4) Total number of days on sick list ...	2,177	2,370
(5) Total number invalided	4	2
(6) Total deaths	4	4
(7) Total deaths in the Colony	3	2
(8) Average daily number on the sick list for each patient	45	61
(9) Average number of days on sick list for each patient	13·27	10·67
(10) Percentage of deaths to average number resident	1·18	1·45

Zymotic Diseases.

7. The following table gives the number of cases of Zymotic Diseases occurring in the Colony during 1917 and 1918, excluding imported cases:—

SETTLEMENT.	PLAGUE.				CHOLERA.				SMALL-POX.			
	1917.		1918.		1917.		1918.		1917.		1918.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Singapore ...	45	39	178	160	8	6	1	1	41	8	11	4
Penang ...	6	5	51	44	1	1	2	2	191	56	83	26
Province Wellesley ...	...	...	...	...	2	2	...	...	331	112	110	31
Malacca ...	...	...	...	...	...	...	...	...	6	...	6	...
Labuan ...	...	...	...	...	...	...	...	...	...	...	...	...
Dindings ...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	51	44	229	204	11	9	3	3	569	176	210	61

8. During the year there were 23,252 vaccinations: of these 14,304 were successful, 419 failed and 8,529 were not seen, the most of the latter occurring amongst up-country Malays in Malacca.

Diphtheria.

9. The total number of deaths from Diphtheria was 8, compared with 20 in 1917. Of the 16 cases treated in hospitals 2 ended fatally.

Enteric Fever.

10. Enteric Fever was responsible for 145 deaths, the number for 1917 being 77. The number of the cases treated in the hospitals was 251 with 106 deaths.

Beri-beri.

11. Beri-beri accounted for 1,958 deaths. In 1917 the number of deaths was 2,075 and for 1916, 1,075. One thousand seven hundred and twenty-five cases were treated in the hospitals with 283 deaths.

Venereal Diseases.

12. The total cases of Venereal Diseases treated in the hospitals in 1918 were 2,774 with 101 deaths. In 1917 the figures were 3,232 and 82 respectively.

Phthisis.

13. The total deaths registered for Phthisis were 3,675, against 3,084 in 1917 and 2,741 in 1916.

Dysentery.

14. Dysentery was responsible for 1,362 deaths as against 1,064 deaths in 1917 and 789 in 1916. Of the cases treated in hospitals, which totalled 2,481, seven hundred and thirty-nine cases ended fatally, against 1,516 cases with 563 deaths in 1917.

Malaria.

15. Malaria accounted for 4,777 deaths, compared with 3,766 deaths in 1917 and 3,352 in 1916. The corresponding figures for Fevers not classified were 6,988, 4,030 and 3,512 respectively. Malaria admissions to the hospitals of the Colony were 7,726 with 766 deaths, compared with 7,537 cases and 613 deaths in 1917.

Ankylostomiasis.

16. The total number of Ankylostomiasis cases treated in the hospitals of the Colony for the last five years are:—

Year.			<i>Remained from pre- vious year.</i>	<i>Admitted during the year.</i>	<i>Total treated.</i>	<i>Deaths.</i>
1914	...	...	33	1,098	1,131	174
1915	...	...	70	932	1,002	141
1916	...	...	49	1,206	1,255	214
1917	...	...	83	1,443	1,526	268
1918	...	...	122	1,592	1,714	385

The report from the Rockefeller Institute has not arrived yet.

17. Hospitals and work done in all Settlements:—

Year.		Number Treated.			Number of Deaths.			Percentage of Deaths to Total Treated.		
		Europeans.	Natives.	Total.	Europeans.	Natives.	Total.	Europeans.	Natives.	Total.
1913	...	2,255	37,470	39,725	82	3,853	3,935	3.66	10.29	9.09
1914	...	2,555	37,926	40,481	111	3,642	3,753	4.34	9.6	9.27
1915	...	2,305	30,916	33,221	92	2,889	2,981	3.99	9.34	8.97
1916	...	1,843	32,623	35,466	82	3,289	3,371	4.45	9.78	9.50
1917	...	1,904	34,559	36,463	83	4,006	4,089	4.36	11.59	11.21
1918	...	3,197	39,836	43,033	143	5,698	5,841	4.47	14.30	13.57

Singapore Hospitals.

18. The number of European cases treated in the General Hospital during the year under review was 1,398, against 1,184 in 1917. The natives numbered 5,031. The total deaths were 602 (66 Europeans and 536 natives).

Thirteen thousand and ninety-six patients were treated at the Tan Tock Seng's Hospital, Singapore, with 1,882 deaths, the number for Europeans being 1,035 and 27, respectively. The average daily sick was 657, compared with 561.67 in 1917.

The number of patients remaining in the Lunatic Asylum on 1st January, 1918, was 367 and the admissions during the year were 317 making the total treated of 684 patients (50 Europeans and 634 natives). The total deaths were five Europeans and 84 natives, and the daily average sick being 402.

Penang Hospitals.

19. The total treated in all Penang Hospitals, excluding Province Wellesley, is 10,813 of whom 528 were Europeans and 10,285 natives. Of these, 1,452 died (36 Europeans and 1,416 natives). In 1917 the total number treated was 9,760 and the total deaths 977.

Province Wellesley Hospitals.

20. On the 1st January, 1918, there remained in the Hospitals in Province Wellesley 114 patients, and during the year 2,967 cases were admitted, making a total treated of 3,081—all these cases being natives. The deaths were 372.

Malacca Hospitals.

21. Six thousand four hundred and thirty-five patients were treated in all the hospitals at Malacca during the year under review with a mortality of 1,211 cases. In 1917 the figures were 6,216 and 803 respectively.

All Hospitals.

22. The total treated and deaths in the hospitals of the Colony for some of the more important diseases are shewn in the subjoined statement with the corresponding figures for the three preceding years:—

Diseases.	1915.		1916.		1917.		1918.	
	Total treated.	Deaths.	Total treated.	Deaths.	Total treated.	Deaths.	Total treated.	Deaths.
Malaria Fever ...	5,590	311	7,584	564	7,355	613	7,726	766
Dysentery ...	1,267	407	1,230	405	1,516	563	2,481	739
Diarrhoea ...	526	50	447	61	431	28	407	41
Beri-beri ...	940	92	755	104	1,520	299	1,725	283
Phthisis and Tuberculosis	1,162	551	1,127	519	1,214	594	1,337	692
Enteric ...	100	44	108	31	116	42	251	106
Ulcers ...	2,743	2	2,617	1	2,323	1	2,432	2
Venereal Diseases ...	4,124	56	3,360	83	3,232	82	2,774	101
Ankylostomiasis ...	1,002	141	1,255	214	1,526	268	1,714	385

Public Health.

23. The deaths registered as due to Influenza numbered 844, this figure bears little relation to the actual number of deaths which resulted directly or indirectly from that disease.

In June and July the Colony was subjected to a wide-spread epidemic of the disease in a comparatively mild form, there was a heavy sick rate but the mortality was not heavy. In October there was a second and serious outbreak of the disease which lasted with great intensity for about three weeks. The disease was characterized by the frequent occurrence of Broncho-pneumonia of extreme virulence and productive of a heavy mortality. It may be said that Influenza caused the death of approximately 3,500 persons, this figure is arrived at by attributing to Influenza and its many complications the excess deaths registered under "Pneumonia", "Bronchitis", "Phthisis" and "Fever not specified".

There were 178 cases of Plague with 160 deaths in Singapore as against 45 cases and 39 deaths in 1917.

Out-Door Dispensaries.

24. Thirty-three thousand two hundred and ninety-five patients sought medical assistance as out-patients in the different out-door dispensaries of the Colony, compared with 31,174 in 1917 and 29,616 in 1916.

Medical School.

25. The total number of students on the roll for the full course of L. M. S. is 114 of whom 27 joined in the year under report. Ten students completed their course and obtained the L. M. S. diploma, of these 7 joined the Straits Settlements and the Federated Malay States Governments temporarily, or permanently and three have gone into private practice. One hundred and thirty-seven Hospital Assistants (two years' course) are now under training.

Seven candidates were successful in obtaining the dental certificate.

Miscellaneous.

26. Nineteen medical practitioners were registered during the year. The total number on the Register is now 475.

Fifty-eight licences were issued to chemists and druggists and medical practitioners and thirty-six licences to dentists under the Deleterious Drugs Ordinance. Sixty-four licences were issued under the Poisons Ordinance.

The Hospital Board Ambulance answered 130 calls for conveying cases to hospitals.

The following were members of the Hospital Board during the year excluding Government Ex-officio members:—

Mr. D. Y. PERKINS.

Mr. F. J. HALLIFAX.

Dr. J. A. R. GLENNIE.

Dr. E. A. ELDER.

Mr. GOH TEIK CHEE.

In the course of the year on Mr. HALLIFAX leaving the Colony, Mr. PEEL was elected to succeed him.

Dr. S. H. R. LUCY, Senior Health Officer, Federated Malay States, was appointed Principal Civil Medical Officer and assumed duty on the 20th July, 1918.

The post of Principal, Medical School, vacated by the retirement and subsequent death of Dr. R. D. KEITH, was offered to and accepted by Dr. G. H. MACALISTER who assumed his duty on the 22nd July, 1918.

Dr. T. D. KENNEDY, the Assistant Principal, Medical School, was, on medical grounds, boarded out of the service in October.

In July 1918, Miss MCNAIR, who had been Head Sister, General Hospital, Singapore, and had rendered excellent service, retired.

F. B. CROUCHER,

Acting Principal Civil Medical Officer, S. S.

SINGAPORE, 9th February, 1920. [1530/20].

APPENDICES.

	Page.
<i>A.</i> Singapore Hospitals 	9
<i>B.</i> Penang Hospitals 	42
<i>C.</i> Province Wellesley Hospitals	51
<i>D.</i> Malacca Hospitals 	61
<i>E.</i> Out-door Dispensaries 	74
<i>F.</i> Quarantine 	82
<i>G.</i> Government Analyst's Department	96
<i>H.</i> Medical School 	102
<i>I.</i> Pathological Department 	104
<i>J.</i> Labuan Report 	112

APPENDIX

1. General Information	1
2. Description of the Project	2
3. Objectives of the Project	3
4. Methodology	4
5. Results	5
6. Discussion	6
7. Conclusion	7
8. References	8
9. Appendix	9
10. Glossary	10

APPENDIX A.

SINGAPORE.

GENERAL HOSPITAL.

REPORT BY DR. J. HARRISON, M.D., C.M., *Acting Chief Medical Officer-in-charge.*

1. *Hospital Buildings.*—The Night Nurses' quarters, on which a start was made in December, 1917 were completed in July of this year, and were duly occupied in the following month. These quarters have proved of great benefit to the Nursing Staff and have been much appreciated.

A new Duty Room has been added to the Officers' Ward, thus relieving the congestion previously caused by the use of part of the verandah (Officers' Sitting Room) for such a purpose. Cupboards for poisons, linen, etc., previously kept in the ward are now stored in this room.

The European Female Ward has been furnished with a new pantry, the room previously used, proving so small as to necessitate cupboards, etc., being kept in the alley way. Besides its purpose as a pantry this room also serves for the preparation and cooking of invalid diets.

The Native Wards throughout were whitewashed and repainted.

2. *Work done.*—Comparative table shewing the total number of patients treated in all wards during the past five years (exclusive of Maternity patients):—

Year.	European Wards.	Died.	Percent-age.	Native Wards.	Died.	Percent-age.
1914	941	56	5.84	3,482	326	9.25
1915	1,089	51	4.68	3,238	246	7.59
1916	1,038	65	6.26	3,350	299	8.99
1917	1,120	49	4.37	3,800	382	10.05
1918	1,206	59	4.89	4,683	499	13.01

3. Of the above 59 deaths in the European Wards, 17 took place within 48 hours of admission, and of the deaths in the Native Wards 163 took place within 48 hours of admission. Deducting these, the death-rate for the European Wards was 3.48 per cent and for the Native Wards 7.17 per cent. Similar figures for the previous year show a death-rate of 3.03 and 5.47, respectively.

4. The chief diseases treated in all wards are shown below, together with a comparative statement for the previous four years:—

Diseases.	1918.	1917.	1916.	1915.	1914.
Malaria	1,067	790	774	510	935
Enteric Fever	118	69	58	54	69
Phthisis	160	110	133	114	103
Dysentery	84	81	73	74	144
Venereal Diseases	373	301	318	355	213
Beri-beri	95	76	28	29	70
Pneumonia Lobar	119	83	*54	*50	*55
Ankylostomiasis	195	194	...	...	...
Injuries	1,017	853	1,010	1,058	1,022

* Native Wards only.

Other diseases were:—Influenza 314, Bronchitis 142, Broncho-Pneumonia 92, Diphtheria 15, Dengue 14, Mumps 9, Blackwater Fever 4, Cerebro-spinal Fever 4, and Diseases of the Eye 66.

5. The chief causes of death were:—Lobar-Pneumonia 116, Broncho-Pneumonia 63, Malaria 60, Enteric Fever 47, Phthisis 38, Ankylostomiasis 33, Beri-beri 32, Dysentery 31, Injuries 29, Nephritis 10, and Diseases of the Heart 8.

6. Four hundred and fifty-five cases were sent in by the Police for free treatment as compared with 240 in 1917.

7. *Native Police*.—There were 849 admissions to hospital as compared with 320 in 1917. They included 373 Sikhs, 235 Malays, 189 Indians (other than Sikhs), 39 Chinese, and 13 Javanese.

The chief diseases under treatment were:—Malaria 58, Bronchitis 77, Venereal Diseases 53 and Ankylostomiasis 26. Two deaths occurred among these patients.

8. *The Influenza Epidemic*.—On July 1st a case of Influenza was admitted to the Native Wards and on the following day a similar case entered the European Wards. Admissions to all wards during that and the following four months were as follows:—

July	...	...	...	...	...	32
August	...	...	...	...	...	7
September	...	...	...	...	...	0
October	...	...	...	...	...	229
November	...	...	...	...	...	46
Total						314

Of these cases, 71 were admitted to the European Wards and 243 to the Native Wards.

The death-rate was exceptionally heavy among the native patients being 23.6 per cent. Many of these cases, however, were admitted in the last stages of Pneumonia and little could be done for them.

Of the 71 admissions to the European Wards, two cases ended fatally making a death-rate of 2.81 per cent.

Among the European patients the disease appears to have been of gradual onset (20 per cent gave a history of sudden onset with marked rigor and high temperature) the patient just noticing a slight soreness of the throat (60 per cent) accompanied by a tickling cough. Soon afterwards slight fever 100°-101° developed. There was a rapid rise in temperature (104°-105°) during the next 24 hours, accompanied in a large number of cases by severe headache, general body pains and a corresponding increase in the cough and sore throat. The disease then appears to have been at its height as the temperature from then on fell by Lysis and was normal in 4 to 5 days afterwards. With the subsidence of the fever the throat condition and the cough gradually cleared up and by the 7th to the 8th day the patient felt "quite fit" again, although still in a very weak condition. In these cases which can be regarded as being uncomplicated the following signs were observed. When seen on the second day of the illness the appearance of the patient was apathetic to a marked degree, face flushed. Signs of Coryza present. Pulse 100°-120°. Pharynx congested. Enlargement and tenderness of the cervical glands on both sides of the neck. Examination of the chest and abdomen showed no abnormality present.

Of this series of cases, 18 or 25.3 per cent developed pulmonary complications which varied from slight Bronchitis to severe Broncho-Pneumonia. The only cases of Lobar Pneumonia observed were those that ended fatally and which had been admitted to hospital with the disease well advanced.

An interesting feature noticed in 21 per cent of the uncomplicated cases was a secondary rise of temperature occurring between the 7th and 9th days. This was of 2 to 3 days' duration—produced no prostration and indeed in many cases the patient was unaware of any change in his condition. In this secondary Pyrexia the temperature rose to 100° or 102°. I am unable to account for this manifestation.

Symptoms pointing to the alimentary system were only observed in seven cases: three of which suffered from severe vomiting while the remaining four complained of severe general abdominal pain (in one of these latter cases the signs simulated to a marked degree an acute attack of appendicitis).

Of the two cases that died—one was admitted to the Officers' Ward on 16th October—with a history of Influenza nine days previous to admission: with Pneumonia setting in four days later. There were signs of Lobar Pneumonia and the patient was in a collapsed condition. He died on 18th October. The other case was admitted to the Seamen's Ward on 19th October and died on 20th October. The cause of death being double Lobar Pneumonia. This patient, previous to admission, had, in delirium, severely wounded himself about the throat.

As regards the treatment:—

A. Prophylactic.—In the early stages of the epidemic an attempt was made to segregate the influenza admissions from other patients. This proved successful until the month of October, at which time the epidemic was at its height and the question of accommodation became acute. In spite of compulsory gargling and the attempt at segregation the disease swept through the whole hospital and there were few patients who escaped. Not only did it levy its toll from those already sick, but also struck down many of our Nursing Staff to such an extent that at one time only 50 per cent of our nurses were available for duty. We were most fortunate at this critical period, in obtaining the assistance of many of our former Sisters, and I take this opportunity of publicly thanking them for their services so willingly offered and ably carried out.

B. Local measures and constitutional.—The routine treatment consisted of a Potassium Chlorate Gargle (10 grains to 1 ounce) which was found to be more soothing than that of Potassium Permanganate and a mild diaphoretic and sedative expectorant mixture given by the mouth. For the cases of Bronchitis and Broncho-Pneumonia a stimulating expectorant mixture was prescribed. For the body pains and headache Acetyl Salicylic Acid gave the best results. In a few cases quinine was given but did not prove satisfactory.

Maternity Wards.

9. There were 333 admissions for the year as compared with 321 for the previous year, of these there were 299 confinements.

The nationalities of those confined were as follows:—

Europeans	...	...	...	...	55
Eurasians	...	...	...	...	15
Chinese	...	...	...	...	166
Tamils	...	...	...	...	21
Japanese	...	...	...	...	14
Sikhs	...	...	...	...	21
Malays	...	...	...	...	5
Javanese	...	...	...	...	2
Total					299

The average weight of the European and Eurasian male infants was 7 lbs. 12 ozs., and of the female 7 lbs. 12 ozs.

The average weight of the native babies was, males 6 lbs. 8 ozs., and females 6 lbs. 14 ozs.

There were 30 premature and still-births.

The more serious cases included Impacted Shoulder 1, Transverse Presentations 3, Eclampsia 4, Placenta prævia 3, and Adherent placenta 2. Forceps were applied in 23 cases.

There were 9 deaths due to:—Shock following severe hæmorrhage (placenta prævia) 2, Eclampsia 2, Bubonic Plague 1, Cerebral Malaria 1, Beri-beri 1, and Septicæmia 2.

During the year under review 10 pupil midwives were entered for a course of 6 months' training. Of these 6 succeeded in obtaining diplomas.

10. *X-Ray Department*.—The installation has been in frequent use during the year and has given every satisfaction, altogether 165 radiograms were taken and many cases treated therapeutically; a new 12 volt battery was purchased in connection with the Coolidge tubes and a new tube stand obtained from England.

11. *Staff*.—I was in charge of the hospital from 19th January to 19th July, when Dr. CROUCHER resumed duty as Chief Medical Officer and again from 1st September to 27th December.

The surgical work has been under the charge of Mr. C. J. SMITH, F.R.C.S.E., throughout the year except for a short period in September to October when Dr. BURNE took charge.

Mr. NORRIS, Assistant Surgeon, has acted as Medical Officer, European Wards. The work in the Native Wards being in the charge of Assistant Surgeons Paglar and Aviet under the supervision of the Surgeon and myself.

It is with a real sense of loss that I report the invaliding from the service of Miss M. J. McNAIR. This lady was appointed Nurse on 11th September, 1903, and on 1st August, 1904, Head Sister, which appointment she had since held. During her last leave in England she joined Queen Alexandra's Imperial Military Nursing Service and for a considerable time served on His Majesty's Hospital Ship *Britannic*. She returned to the Colony in the latter part of 1916—but the recrudescence of previous gastric trouble necessitated her return to Europe early in 1918. I am glad to add that an operation has since been performed with the most favourable results. Miss McNAIR was held in high esteem both by the Medical and Surgical Staffs of the Hospital but more especially by her many acts of kindness to her patients will her name be remembered by the many who have been under her during her long period of service in Singapore.

Miss WILLIAMS arrived from Penang on 19th April to relieve Miss McNAIR and acted as Head Nurse until 21st August, when she resigned from the service on her marriage. Miss STUART acted as Head Nurse through the remaining part of the year.

Among the Sisters and Nurse Probationers there have been many changes.

FREE MATERNITY HOSPITAL, VICTORIA STREET.

During the year under report 221 women have been delivered of whom:—

164	were Chinese
30	„ Tamils
4	„ Jewesses
1	was European
5	were Malays
10	„ Japanese
7	„ Eurasians

In 1917, the total number was 206. One Tamil patient admitted ill died of Pneumonia.

One Chinese Enteric patient was transferred to General Hospital.

There were five infant deaths:—4 premature and one.

There were 10 still-births (all premature).

The complicated cases were 29 in number:—2 Transverse, 1 internal version performed, one 7½ lbs. baby resulting in spontaneous evolution due to abnormally large dimensions of pelvis, 2 Hydramnios, 3 Forceps, 3 Adherent Placenta, 2 Twins, 4 Breech, 3 Unrotated Posterior, 2 Uterine inertia, 2 Malaria, 1 Phthisis, 1 Dysentery, 1 Enteric, 1 Pneumonia, 1 Face Presentation, 1 Sepsis (septic on admission).

The average weight of the infants were:—

Europeans	...	...	...	7 lbs. 2 ozs.
Jewesses	...	...	...	6 " 4 "
Eurasians	...	...	...	7 " 4 "
Tamils	...	...	...	5 " 7 "
Chinese	...	...	...	6 " ...
Japanese	...	...	...	6 " 4 ozs.
Javanese	...	...	...	6 "

REPORT ON SURGERY AT THE GENERAL HOSPITAL, SINGAPORE, DURING 1918.

BY DR. C. J. SMITH, M.B., CH.B., F.R.C.S., (EDIN.), *Senior Surgeon.*

The work reported on herein comprises cases from First and Second Class European Wards, and Second and Third Class Native Wards. The Asiatic cases are signified as A., the Europeans as E., under Nationality Column.

Following the custom of the English and American Hospitals all deaths within 48 hours of admission are omitted from the Statistical classification of mortality and reports are made hereafter as to the circumstances of death.

I wish to express my indebtedness to Dr. T. W. H. BURNE, the European House Surgeon and to the Nursing Staff, to Dr. FINLAYSON for the pathological reports on all the morbid tissues removed at operation and for the bacteriological reports and vaccine work, to Drs. CROUCHER and HARRISON for the great help I received from the radiographic work they did for the Surgical Department. Dr. BURNE has undertaken the work of the Ophthalmic Department and the venereal cases. A throat, nose, and ear department has been established and separate reports will be drawn up for these special branches which although young are rapidly growing.

The usual classification into major and minor operative treatment has been adopted.

Operative Procedure.	Disease.	Sex.	Nationality.	Result.	Number treated.	Observations.
Salpingectomy	Pyosalpinx	Female.	E.	Cured	6	
"	"	"	A.	"	1	
"	Tubercular Salpingitis	"	E.	"	2	
"	Hydrosalpinx	"	A.	"	1	
"	Tubo-ovarian abscess	"	E.	"	1	
Hysterectomy (Abdominal)	Fibroids	"	E.	"	4	
"	"	"	A.	"	7	
Vaginal	"	"	E.	"	2	
Intra peritoneal	"	"	E.	"	3	
Retroversion, suspension by round ligaments (Webster's operation)	Ovarian prolapse	"	A.	"	1	
Enucleation	Broad ligament cyst	"	A.	"	1	
Salpingectomy	Ruptured ectopic gestation	"	E.	"	2	
"	Ruptured ectopic gestation	"	A.	"	2	

Operative Procedure.	Disease.	Sex.	Nationality.	Result.	Number treated.	Observations.
Salpingectomy ...	Ruptured ectopic gestation ...	Female.	A.	Died	1	Child also alive Dwarf, old sacro-iliac disease and very deformed Pelvis.
Caesarean Section (Conservative) ...	Deformed Pelvis ...	"	A.	Cured	1	
Caesarean Section (Conservative) ...	" ...	"	A.	Died	1	Received on second day of labour. Septic after instrumentation had failed.
Ovariectomy ...	Cystoma ...	"	E.	Cured	5	
" ...	" ...	"	A.	"	3	
" ...	Dermoid ...	"	E.	"	2	
Alexander's operation for Vaginal evacuation of Pelvic Abscess ...	Retroversion ...	"	A.	"	1	
Perineorrhaphy ...	Pyosalpinx ...	"	A.	"	2	
" ...	Rupture or stretched outlet ...	"	E.	"	4	
" ...	Rupture or stretched outlet ...	"	E.	Died	1	Death under Chloroform.
Trachelorrhaphy ...	Laceration ...	"	E.	Cured	1	
Colporrhaphy ...	Vaginal prolapse ...	"	E.	"	5	
Cervical amputation ...	Hypercrophia ...	"	E.	"	5	
Uterine curettings ...	Retained products ...	"	E.	"	12	
" ...	" ...	"	A.	"	2	
Excision of Vulva ...	Elephantoid tumours (filarial) ...	"	A.	"	1	
Abortions procured ...	Hyperemesis ...	"	E.	"	1	
Appendicectomy ...	Appendicitis, internal ...	"	E.	"	10	
" ...	" ...	"	E.	Died	1	Post Chloroform Acetonemia.
" ...	" ...	Male.	E.	Cured	8	
" ...	" ...	Female.	A.	"	2	
" ...	" ...	Male.	A.	"	5	
" ...	Acute without abscess ...	"	E.	"	13	
" ...	" ...	Female.	A.	"	1	
" ...	Gangrenous with perforated peritonitis ...	"	A.	"	3	
" ...	Gangrenous with perforated peritonitis ...	"	E.	"	2	
" ...	Gangrenous with perforated peritonitis ...	Male.	E.	"	3	
" ...	Gangrenous with perforated peritonitis ...	"	A.	"	6	
" ...	Tubercular ...	Female.	E.	"	2	
Intestinal ...	Perforated typhoid ...	Male.	A.	Died	7	Some multiple all late with peritonitis.
" ...	Perforated dysenteric ulcer ...	Female.	A.	"	1	Admitted with General Peritonitis.
Cholecystotomy ...	Stones ...	"	E.	Cured	1	
" ...	" ...	Male.	E.	"	1	
" ...	Empyema ...	"	A.	Died	1	Preoperative peritonitis.
Choledochotomy ...	Stones in C. B. D. ...	Female.	E.	Cured	1	
" ...	" ...	"	A.	Died	1	Impacted in Ampulla, transduodenal, removed shock.
Cholecystectomy ...	Stones in cystic duct ...	"	E.	Cured	1	Recurrent stone 2 years after removal of stones from gall bladder America.
Laparotomy ...	Stab ...	"	A.	Died	1	Multiple wounds of intestine.
" ...	" ...	Male.	A.	Cured	3	Prolapse of Omentum.

Operative Procedure.	Disease.	Sex.	Nation- ality.	Result.	Number treated.	Observations.
Laparotomy	Stab	Male.	A.	Cured	1	Perforating wound of stomach.
"	"	"	A.	"	1	Penetrating liver stomach.
"	"	"	A.	Died	1	External iliac.
"	Rupture of liver	"	A.	"	1	
"	Carcinoma of stomach	"	E.	Relieved	1	Inoperable secondary deposits in liver.
"	Acute obstruction	"	E.	Cured	1	Obstruction by band.
"	"	"	A.	"	1	
"	Intussusception	Female.	A.	"	1	
"	Chronic obstruction	Male.	E.	Died	1	Kink at hepatic flexure. Pulmonary embolism on third day.
"	Hepatic Abscess	"	A.	Cured	1	
Epigastric	Hernia (Amoebiasis)	"	E.	"	1	
Umbilical	"	"	E.	"	1	
"	Hernia strangulated	"	E.	"	1	Omental.
Enterectomy and end to end Anastomosis	Close old Colostomy	"	A.	"	1	Colostomy performed elsewhere for stricture of rectum. Rectal stricture ex-and bowel continuity reconstituted at a 2nd operation.
Enterectomy with end to side anastomosis	Polypus with intussusception	Male.	A.	Cured	1	Caecum and part of transverse colon excised.
Enterectomy with end to side anastomosis	Carcinoma	"	E.	Died	1	Got out of bed & burst stitches day following operation peritonitis.
Enterectomy with end to side anastomosis	Sigmoid	Female.	E.	Cured	1	Deeply ulcerated by tubercular tubo-ovarian abscess with perforation when separated
Splenectomy	Hepatic Cirrhosis	Male.	A.	Died	1	Had Omentopexy previously performed without much relief.
"	"	Female.	A.	Cured	1	Ruptured.
Gastro-enterostomy	Carcinoma (inoperative)	Male.	E.	Relieved	1	
"	Pyloric ulcer with stenosis	"	A.	Cured	2	
"	Pyloric ulcer with stenosis	"	E.	"	2	
"	Pyloric ulcer with stenosis	Female.	E.	"	1	
GENITO-URINARY:—						
Nephrectomy	Calculus pyonephrosis	"	E.	"	1	
Nephro-lithotomy	Renal Calculus	Male.	E.	"	2	
"	"	"	E.	"	1	
Litholopaxy	Vesical Calculus	Female.	A.	"	1	
"	"	Male.	E.	"	1	
Suprapubic Cystotomy	"	Female.	A.	"	1	
"	"	Male.	A.	"	3	
Hernia operation (Kocher)	Femoral	Female.	E.	"	2	
"	Inguinal	Male.	E.	"	15	
"	"	"	E.	"	11	
"	"	"	A.	Died	1	Pneumonia following ether.

Operative Procedure.	Disease.	Sex.	Nationality.	Result.	Number treated.	Observations.	
Herniotomy ...	Strangulation of Inguinal ...	Male.	A.	Cured	1	Came for treatment very late with Gangrene of Bowel.	
" ...	Strangulation of Femoral ...	Female.	A.	"	1		
" ...	Strangulation of Femoral ...	"	A.	Died	2		
Amputation of scrotum ...	Elephantiasis (filariasis) ...	Male.	A.	Cured	1		
Orchidectomy ...	Hæmatocele ...	"	A.	"	1		
Hydrocele ...	Tunica-vaginalis ...	"	A.	"	17		
" ...	" ...	"	E.	"	3		
Varicocele ...	" ...	"	E.	"	2		
External Urethrotomy ...	Stricture ...	"	A.	"	6		
" ...	" ...	"	E.	"	3		
Vesiculectomy ...	Tubercular ...	"	A.	"	1		
RECTUM & ANUS:—							
Excision of Stricture ...	Simple of Ampulla ...	"	A.	"	1		
Excision of Cyst ...	Congenital coccygeal ...	"	A.	"	1		
Excision ...	Hæmorrhoids ...	Female.	E.	"	3		
" ...	" ...	Male.	E.	"	7		
" ...	" ...	"	A.	"	7		
Incision and Dilatation ...	Rectal Stricture ...	Female.	A.	"	1		
OPERATION UPON THE EXTREMITIES:—							
Sequestrotomy ...	Old compound fracture ...	Male.	E.	"	2	Hæmorrhage before and super-added shock of operation.	
AMPUTATIONS:—							
Through fore-arm ...	Carcinoma of hand ...	"	A.	"	1		
Through thigh ...	Trauma ...	"	A.	Died	1		
" ...	Aneurism gangrene ...	"	A.	Cured	1		
Through knee ...	Gangrene of foot ...	"	A.	"	1		
Through upper-third of leg ...	Trauma ...	"	A.	"	1		
Excision of veins ...	Varix ...	"	A.	"	3		
Arthrotomy of knee ...	Septic Arthritis ...	"	A.	"	1		
Ganglion Excision ...	Foot ...	"	A.	"	1		
" ...	Compound of hand ...	"	A.	"	2		
Ligature of Femoral in Hunter's canal ...	Popliteal Aneurysm ...	"	A.	"	2		
External Iliac transperitoneal ...	Common Femoral Aneurysm ...	"	A.	"	1		
Estomyelitis ...	Humerus ...	Female.	E.	"	1		
" ...	Tibia ...	Male.	E.	"	1		
Plating of fractures ...	Humerus ...	"	A.	"	1		
" ...	Femur ...	"	A.	Died	1		
Arthrectomy ...	Hallux Valgus ...	"	E.	Cured	2		
Hemithyroidectomy ...	Adenoma ...	Female.	A.	"	1		
" ...	" ...	"	E.	"	1		
Excision of Jaw tumour ...	Myeloma ...	Male.	A.	"	1	Shock following a long and difficult late Malunion.	
Excision of Cervical glands ...	Tubercular Adenitis ...	Female.	A.	"	1		
Tracheotomy ...	Diphtheria ...	Male.	E.	"	1		
Excision ...	Epithelioma of Lip ...	"	E.	"	1		
Excision of foreign Body of foreign ...	Needle in hand ...	Female.	A.	"	1		
" ...	Bullet in pleural cavity ...	Male.	A.	"	1		
SKULL:—							
Trephining ...	Comp. depressed fracture ...	Female.	A.	"	1		
" ...	Comp. depressed fracture ...	Male.	A.	"	1		

Operative Procedure.	Disease.	Sex.	Nationality.	Result.	Number treated.	Observations.
PLASTIC OPERATIONS:—						
Singrafting Thigh ...	Extensive burns ...	Female.	A.	Cured	1	
Singrafting leg ...	" ...	Male.	E.	"	1	
Singrafting abdomen ...	" ...	Female.	A.	"	11	
Flap Sliding ...	Wide excision of Popilloma of heel ...	Male.	A.	"	1	
Excision ...	Ulcer Carcinoma of thigh ...	Female.	A.	"	1	
BREAST:—						
Radical amputation ...	Carcinoma ...	"	A.	"	4	
" ...	" ...	"	E.	"	1	
" ...	" ...	Male.	E.	"	1	
Gland excision only ...	Fungating Carcinoma ...	Female.	A.	Relieved	1	Pathologist's report Scirrhus Carcinoma.
Excision of tumour of back ...	Lipoma ...	"	A.	Cured	1	
Total Major Operations ...					333	
Deaths ...					25	
Revised Deaths ...					7	

Operations performed in the Native Theatre by Resident Staff.

Operative Procedure.	Disease.	Result.	Number treated.	Observations.
<i>Major Operations:—</i>				
Amputations ...	Through upper arm ...	Cured	1	
" ...	" thigh ...	"	1	
" ...	" ankle ...	"	2	
" ...	" fore-arm ...	"	3	
" ...	" fingers ...	"	6	
Laparotomy ...	Stab, stomach, perforated ...	Died	2	Admitted on the point of death.
" ...	Stab, protusion of Viscera ...	"	1	Admitted on the point of death.
" ...	Perforated typhoid ...	"	2	Admitted on the point of death.
Hydrocele ...	Tunica vaginalis ...	Cured	6	
Piles ...	" ...	"	3	
Extravasation of urine ...	Incision ...	"	1	
Empyema ...	" ...	Died	1	
Tracheotomy ...	Diphtheria ...	Cured	1	

Total 30. Deaths 6.

Operative Procedure.	Disease.	Number treated.
<i>Minor Operations:—</i>		
Incision of abscess ...	Groin ...	18
" ...	Whitlow ...	2
" ...	Ischio rectal ...	2
" ...	Periurethral ...	2
" ...	Subcutaneous ...	26
Circumcision ...	.....	26
Excision of Tumours ...	Lipoma ...	1
" ...	Sitocencysts ...	1
Fistula in Ano ...	.....	9
Extraction of foreign bodies ...	Rectum ...	1
Suture ...	Wounds ...	21
Skin Grafts ...	.....	7
Excision of glands ...	Axilla ...	2
Ligature of Arteries ...	Pedis ...	1
Suture of tendons ...	Hand ...	1
Aspirations ...	Tubercular of Abscess ...	3
Sequestrotomy ...	Extraction ...	1
Dental Caries ...	Suture ...	1
Cut throat ...	.....	1
Harelip ...	Plastic ...	1
Total		127.

Operative Procedure.	Disease.	Number treated in European Theatre.
<i>Minor Operations:—</i>		
Cystoscopy ...	Diagnostic Examinations	66
Ureteral Catherterations ...	"	6
Lavage of Rectal Pelvis ...	Pyelitis ...	20
Sigmoidoscopy ...	Diagnostic ...	11
Tonsillectomy ...	.....	24
Setting fractures ...	Malpositia ...	2
Reduction of dislocations ...	Elbow ...	1
" ...	Hip ...	2
" ...	Shoulder ...	1
Circumcision ...	.....	7
Suture of wounds ...	Cut head ...	1
" ...	Cut hand ...	1
Plevic examinations ...	Diagnostic ...	9
Excision of Abscess ...	Ischio rectal ...	11
" ...	Subcutaneous ...	8
Aspiration of Abscess ...	Tubercular collections ...	1
Incision of Abscess ...	Neck ...	1
" ...	Periurethral ...	1
Excision of tongue ulcer ...	For Pathological Report	2
Plaster case ...	Application for fracture ...	1
Fistula in Ano ...	.....	11
Sebaceous Cysts ...	Excised ...	2
Urethroscopy ...	Diagnostic ...	2
Lumbar puncture ...	"	1
Intravenous injections ...	.....	7
Excision of Bursae ...	.....	1
Urethral Calculus ...	Extraction ...	1
Dental Caries ...	"	3
Carcinoma of Cervix ...	Cauterized ...	1
Dilatation of Strictures ...	Urethra ...	3
Avulsion ...	.....	1
Plastics ...	Scar of face ...	1
Total		204.

Throat, Nose and Ear Department.

Operative Procedure.	Disease.	Sex.	Nationality.	Result.	Number treated.	Observations.
Heaths radical	Mastoiditis	Female.	E.	Cured.	1	
Mastoid operations	"	Male.	A.	"	11	
"	"	"	E.	"	3	
Middle turbinectomy	Sinusitis	Female.	E.	"	2	
Ethmoidal sinus opened	Ethmoid and frontal	Male.	E.	"	2	
Radical Antrum	Chronic Sinusitis	"	E.	"	1	
Septum submucous	Obstruction	"	A.	"	1	
Resections	"	Female.	E.	"	2	
"	"	Male.	E.	"	2	
Enucleation of Tonsils	"	"	E.	"	1	
Bronchoscopy	Foreign body	"	A.	"	1	
Cauterization	Intranasal	"	"	"	1	Total 28.
EYE DISEASE:—						
Plastics on lids	"	"	"	"	4	
Needling	Capsular remains	"	"	"	6	
Cataract Extractions	"	"	"	"	2	
Pterygim	"	"	"	"	2	
Chalazion	"	"	"	"	1	Total 15.

Total.

Major in European Theatre	...	...	...	333
Major in Native Theatre	...	...	...	30
Throat, Nose and Ear Department	...	...	...	28
Eye Department	...	...	...	15
Minor operations in Native Theatre	...	...	...	127
Minor operations in European Theatre	...	...	...	204
Total for operations at General Hospital	...	...	...	737
Total deaths following operation	...	...	...	31
Patients admitted in extremes and died within 48 hours	...	...	...	14
Perforations of Typhoid and Dysenteric Ulcers undertaken	...	...	...	10
For the medicines side of the Hospital	...	...	...	24
Revised total deaths for year	...	...	...	7

PRISON HOSPITAL.

REPORT BY DR. T. MURRAY ROBERTSON, M.D., (EDIN.), *Police Surgeon.*

1. The health of the Prison during the first quarter was not good—for the remainder of the year it may be considered satisfactory.

2. There was an out-break of Beri-beri affecting prisoners of all grades, which was traced to the prisoners having been fed on rice steamed under pressure. Forty-four cases including one European were admitted to Hospital with four deaths. There were no fresh cases during the last nine months.

3. Influenza which was prevalent for some months accounted for 53 admissions with 4 deaths from Pneumonia.

4. *Enteric Fever*.—There were two cases—one occurred in a long-sentence prisoner who had been in Prison for some months—he recovered—and the other was a Chinese vagrant who died shortly after admission to Prison.

5. *Dysentery*.—Forty-seven cases were admitted against 74 in 1917.

6. *Tuberculosis*.—There were 10 cases—7 died.

7. *Admissions to Hospital*.—There were 707 with an average daily sick of 38, against 814 and 38 in the previous year.

8. *Europeans and Eurasians*.—Only one was admitted to Hospital, a case of Beri-beri—he recovered.

9. The following table shews admissions and deaths of different classes of prisoners:—

	Criminal.	Civil.	Vagrants.
Total population	2,922	3,714	386
Average daily number	571	90	47
Number admitted to Hospital	582	26	99
Number died	38	5	6
Average daily sick	34	1'4	3'3
Percentage of deaths to total population	1'3	0'1	1'5

10. *Deaths*.—There were 49 out of a total population of 7,022 giving a death-rate of 6'9 per mille.

11. *Causes of death*.—Dysentery 16, Nephritis 9, Tuberculosis 7, Pneumonia 6, Beri-beri 4, Heart Disease 2, Chronic Malaria 2, Enteric Fever, Cirrhosis of Liver and Meningitis, 1 each.

12. *Grades of those who died*.—Thirty-two occurred among long-sentence prisoners—4 Short Sentence, 2 Revenue Grade, 6 Vagrants and 5 Civil Prisoners.

13. *Suicide by hanging*.—There were four, one female and three male Chinese.

14. *Execution*.—There were two—both Chinese.

15. *Transfers to Lunatic Asylum*.—There were 8 from the Criminal Prison—4 Vagrants and 1 His Majesty's Pleasure.

TAN TOCK SENG'S HOSPITAL, SINGAPORE.

REPORT BY DR. J. R. McVAIL, M.B., CH.B., (GLAS.), *Medical Officer*.

1. *Work done*:—

Remained on the 31st December, 1917	...	...	612
Admitted during 1918	...	...	12,484
Total	...	...	13,096
Discharged	...	...	10,569
Died	...	...	1,882
Remained on 31st December, 1918	...	...	645
Total	...	...	13,096

2. The average daily sick was 657.00 as compared with 561.67 in 1917.
3. The percentage of deaths to total cases treated during the year was 14.37.
4. There were 1,882 deaths during the year. Of these the number dying within 24 hours of admission was 339. Deducting these, the death-rate was 11.77.
5. The average daily stay in hospital of those discharged was 16.48 days, of those dying 11.95 days, and of those remaining 168.08 days. The corresponding figures for the last year were of those discharged 26.45 days, of those died 32.72 days, and of those remaining 93.68 days.
6. *Malaria*.—Three thousand one hundred and seventy-eight cases of Malaria were treated during the year. The number of cases remaining in hospital at the end of the year was 64. There were 275 deaths giving a mortality return of 8.65 per cent.

<i>Types of Malaria.</i>	<i>Total cases treated.</i>	<i>Deaths.</i>
Benign Tertian ...	430	12
Quartan ...	178	8
Malignant Tertian ...	1,110	182
Mixed ...	53	17
Chronic ...	641	22
Unclassified ...	766	34
Total ...	3,178	275

Systematic blood examinations were carried out in all cases. The results were obtained:—

Malignant Tertian ...	1,665
Benign Tertian ...	688
Quartan ...	242
Mixed ...	152
Negative ...	3,540
Total ...	6,287

7. *Dysentery*.—There were 1,628 cases of Dysentery treated during the year. Of these, 366 cases died, shewing a death-rate of 22.48 per cent.

8. *Beri-beri*.—Eight hundred and four cases of Beri-beri have been under treatment during the year. Fifty cases remain in hospital at the end of the year. There were 131 deaths giving a mortality of 16.29 per cent. One hundred and ninety-eight cases of the chronic type were transferred to Pasir Panjang Hospital. The number of cases admitted during the year was 777. The following table shews their nationality:—

<i>Nationality</i>	<i>Cases.</i>	<i>Deaths.</i>
Chinese ...	682	117
Malays ...	15	3
Indian ...	8	2
Japanese ...	62	2
Others ...	10	1
Total ...	777	125

9. *Enteric Fever*.—Among 109 cases of Enteric Fever treated during the year, there were 44 deaths, shewing a death-rate of 40.36 per cent. Last year the mortality was 57.58 per cent.

10. *The Venereal Diseases* were as follows:—

			Cases.	Deaths.
			—	—
Syphilis, Primary	...	...	40	1
„ Secondary	...	...	512	9
„ Tertiary	...	...	116	6
„ Arthritis	...	...	22	—
„ Gonorrhoea	...	...	196	—
			—	—
Total	...	...	886	16
			—	—

These figures refer only to cases uncomplicated by other diseases, or where the other disease was of minor significance.

In connection with the treatment of Gonorrhoea, Prostatic Massage was started at the end of the year. Arrangements are being made to give injections of mercurial cream in Syphilis cases. There is not the slightest doubt that the Chinese coolie is beginning to realise the advantages of Western treatment in Venereal Disease, particularly in Syphilis.

11. *Helminthiasis*.—Three hundred and thirty-nine cases of Ankylostomiasis were treated during the year. Seventeen cases remain in hospital at the end of the year. There were 35 deaths giving a mortality of 10·32 per cent. Three thousand seven hundred and ninety-eight stools were examined during the year with the following results:—

Ankylostomiasis ova	...	...	...	803
Round-worm ova	...	...	...	264
Whip-worm ova	...	...	...	132
Round and Whip-worm ova	...	...	...	37
Ankylostomiasis and Round-worm ova	...	...	...	67
Ankylostomiasis and Whip-worm ova	...	...	...	54
Ankylostomiasis Whip and Round worm ova	...	...	...	16
Negative	...	...	...	2,425
				—
Total	...	...	...	3,798
				—

12. *Tuberculosis, General and Pulmonary*.—Out of 584 cases of Tuberculosis treated during the year, there were 549 Pulmonary Tuberculosis and 35 General Tuberculosis. Three hundred and ten cases died, a death-rate of 53·08 per cent.

13. *Ulcers*.—Nine hundred and thirty-nine cases of Ulcers were treated during the year. Seventy-one cases remain in hospital.

14. *Plague*.—There were 17 cases of Plague, all of whom died.

15. *Influenza*.—About the third week of June numerous cases of Pneumonia of a particularly violent type presented themselves for treatment. Matters became so serious that it was necessary to engage six temporary dressers in addition to the usual staff. By the beginning of August it had greatly diminished but it never quite died out. There is no doubt that this was our first experience of the so-called Influenza Epidemic. There was recrudescence of the disease in the third week of September. It reached its height during the latter part of October and the first week of November, after which it appeared to gradually die out. During the second outbreak 547 cases were admitted to the hospital of which 444 were of the Pneumonia type; of the latter 210 died. To cope with it a temporary Assistant Surgeon was engaged in October, and a large temporary ward was erected.

16. The surgical work was as follows:—

Operations performed—major	...	...	130
Operations performed—minor	...	...	1,148
Total	...	...	1,278

Detailed statement is attached.

One thousand three hundred and seventy-two intravenous injections of arseno-benzol were administered without a single case exhibiting any untoward after effects.

17. *Medico-Legal*.—One hundred and eleven bodies were sent by the Coroner for post-mortem examination. Four hundred and eighty-eight cases were sent by the Police for treatment.

18. *European Ward*.—Two hundred and eleven cases were treated in the European Ward. Their nationalities were as follows:—

Europeans	...	...	...	...	74
Eurasians	...	...	...	...	73
Others	...	...	...	...	64

19. *Japanese*.—The number of patients was 780. There were 22 deaths among them giving a death-rate of 2.93 per cent. The mortality for the previous year was 1.81 per cent.

20. Wooden roofs were added to Wards 4 (the admission wards), 7 (the European Ward) and 16 (the Phthisical Ward) during the year. Part of the hospital and all the quarters, except those occupied by the Medical Officer and Senior Assistant Surgeons, were painted and colour-washed, etc. A temporary ward was erected for the reception of Influenza cases.

21. The Principal Civil Medical Officer visited and inspected the Hospital, Male and Female Leper Camp on 17 occasions. The Committee of Tan Tock Seng's Hospital made 12 visits of inspection.

	Total.	Cured.	Relieved.	Not Improved.	Died.	Remaining in Hospital.
Abscess Incised	271	271	...	...	...	...
" Liver drained	1	...	...	...	1	...
" Mastoid	5	3	1	...	1	...
" Periosteal	1	1	...	...	...	...
" Brodies	4	4	...	...	...	...
Amputation of fingers & thumbs	20	20	...	...	...	...
" Lower Extremity	8	4	...	...	4	...
" Upper Extremity	3	3	...	...	...	...
" Penis	2	2	...	...	...	...
Appendectomy	2	2	...	...	...	...
Bubo Incised	113	113	...	...	...	...
Cancerum Oris	1	1	...	...	...	...
Carbuncle Incised, etc.	4	3	...	...	1	...
Cartid Artery common (ligatured Permanently)	1	1	...	...	...	...
Cerebro Spinal Meningitis? Spinal fluid drawn	2	...	2	...	...	...
Cellulitis Incised	29	29	...	...	...	...
Colostomy	4	...	4	...	...	...
Corn Excised	1	1	...	...	...	...
Cystitis Cystoscopic	1	1	...	...	...	...
Dislocation of shoulder and Radius Reduced	2	2	...	...	...	...
Exploring Laparotomy	17	4	...	12	...	1
Eye Enucleated	5	5	...	...	...	...
Fistula in ano Incised	18	18	...	...	...	...
" Luethral laid open	13	13	...	...	...	...
Fracture humerus reduced	19	19	...	...	...	...
Gland Enucleated	6	6	...	...	...	...
Gum boil Incised	4	4	...	...	...	...
Gumma Scraped	2	2	...	...	...	...
Carried forward	559	532	7	12	7	1

	Total.	Cured.	Relieved.	Not-Improved	Died.	Remaining in Hospital.
<i>Brought forward</i> ...	559	532	7	12	7	1
Herina Radical cure ...	3	3	...	...	...	...
" Strangulated ...	5	4	...	...	1	...
Hypopiu ...	2	2	...	...	...	...
Lipoma Excised ...	1	1	...	...	...	...
Malignant Growth ...	1	1	...	...	...	...
Necrosed bone removed... ..	12	12	...	...	...	...
Osteotomy ...	1	1	...	...	...	...
Omentoplexy ...	3	...	...	2	...	1
Orchiectomy ...	2	2	...	...	...	...
Paracentesis Abdomenis ...	195	195	...	...	...	...
Paracentesis Thoracis ...	36	36	...	...	...	...
Paraphimosis Slit up ...	44	44	...	...	...	...
Phimosis (circumcised) ...	36	36	...	...	...	...
Piles (Ligatured and Excised) ...	22	22	...	...	...	...
Polypus Excised ...	4	4	...	...	...	...
Popliteal Aneurysm ...	5	4	...	...	...	1
Posterior Gastrojejunostomy ...	2	2	...	...	...	...
Radical cure for Hydrocele ...	12	12	...	...	...	...
Resection of Rib (Empyema) ...	17	8	...	...	9	...
Sinus Slit up ...	65	65	...	...	...	...
Skin Grafted ...	5	5	...	...	...	...
Stricture Dilated ...	46	46	...	...	...	...
Suppurating Hicurotocele Incised, etc. ...	7	7	...	...	...	...
Synovitis ...	1	1	...	...	...	...
Teeth Extracted ...	31	31	...	...	...	...
Tracheotomy ...	3	2	...	...	1	...
Trephining ...	2	...	...	...	2	...
Ulcer Excision of edges ...	2	2	...	...	...	...
" Excised ...	3	3	...	...	...	...
" Scraped ...	26	26	...	...	...	...
Urethrotomy External ...	2	2	...	...	...	...
Wiring Patella ...	1	1	...	...	...	...
Wound Stitched ...	114	114	...	...	...	...
" of abdomen (penetrating) craparotomy... ..	8	4	...	...	3	1
Total ...	1,278	1,230	7	14	23	4
Novarsenobenzol Injections ...	1,372	1,372	...	...	...	...
Total ...	2,650	2,602	7	14	23	4

LEPER ASYLUM, SINGAPORE.

1. *Male Camp* :—

Remained on 31st December, 1917	...	...	18
Admitted 1918	...	...	51
			—
	Total	...	69
			—
Transferred to Pulau Jerajak	...	...	34
Discharged	...	...	4
Absconded	...	...	3
Died	...	...	8
Remaining 31st December, 1918	...	...	20
			—
	Total	...	69
			—

2. *Female Camp:—*

Remained 31st December, 1917	...	...	...	34
Admitted	...	...	...	10
			Total	44
Discharged	...	...	...	—
Absconded	...	...	...	—
Died	...	...	...	12
Remaining 31st December, 1918	...	...	...	32
			Total	44

LUNATIC ASYLUM.

REPORT BY DR. H. J. GIBBS, M.R.C.S., L.R.C.P., *Medical Superintendent.*

1. There remained on 31st December, 1917, 305 males and 62 females. Two hundred and sixty-one males and 56 females were admitted in 1918 (the highest on record), making a total of 684 patients.

2. Of the admissions 48 males, 8 females had previously been under treatment in this Asylum.

3. Of the total treated 71 males and 16 females were discharged recovered; 18 males and 9 females relieved; 74 males and 18 females not improved; 14 males absconded; and, 80 males and 9 females died.

4. There remained on the 31st December, 1918, 309 males and 66 females.

5. The average daily numbers resident were 332 males and 76 females.

6. The maximum and minimum numbers were 448 and 367 respectively.

7. *Admissions.*—The nationalities of the admissions were:—

	Males.	Females.
British	7	2
Other Europeans	1	—
Eurasians	6	1
Japanese	1	—
Chinese	185	41
Malays and allied races	17	5
Tamils	35	5
Other Asiatics	9	2

8. The physical condition of the admissions is shewn as:—

	Males.	Females.
Good	44	7
Fair	112	24
Impaired	85	20
Greatly impaired	20	5

9. Seventeen of the admissions died within a month of their admission.

10. As to the causes assigned for the mental break-down in the admissions Syphilis heads the list with 74, Alcoholic Intemperance accounts for 31. Eighteen males of the admissions were General Paralytics, of these 16 were Asiatics, 14 were Chinese and two were Malays.

11. *Discharges.*—Sixty-six males and 20 females were transferred to the Central Asylum at Tanjong Rambutan during 1918. Since 13th November, 1915, we have, in all, transferred 264 males and 75 females to the above Asylum.

The recovery rate for this Asylum in 1918 was 27·44.

12. *Deaths.*—The death-rate on the average daily number resident was 22·14—males 24·10 and females 12·56. This, though high, compares favourably with the average for the previous thirty years. Dysentery which was

very prevalent accounted for 42 of the deaths. Tuberculosis accounted for 13 and General Paralysis for 10. This high death-rate is not confined to this Asylum. At Tanjong Rambutan one learns from the monthly returns furnished this Asylum by the Medical Superintendent of the Asylum there that, of the 339 of our patients received at Tanjong Rambutan, since the 13th November, 1915, no fewer than 129 died, Dysentery accounting for 57 of the deaths, Tuberculosis for 30, and 11 succumbed to Pneumonia. Influenza which prevailed from August to November was of a mild type and though not killing any patient directly accelerated the end of a few of our Tuberculosis patients.

13. *Criminal Population*.—There remained on 31st December, 1917, 9 lunatic criminals and 15 criminal lunatics (two of the latter being females). There were admitted 13 of the former and 18 of the latter—all males, giving a total treated of 42 lunatic criminals and criminal lunatics. Of the lunatic criminals one recovered and was transferred to the Criminal Prison to complete his sentence; the sentences of three expired, but as there was no improvement in their mental condition they remained on as ordinary lunatics; one absconded and one died.

Of the criminal lunatics one died.

There remained on the 31st December, 1918, 16 lunatic criminals and 19 criminal lunatics (two of the latter being females).

14. There were no cases of Zymotic Disease nor were there any deaths from suicide. A few attempts were made by both males and females but these were frustrated by the vigilance of the attendants.

15. *Casualties*.—The majority of these were trifling; the serious casualties consisted of an intracapsular fracture of the neck of the left femur, the result of an accidental fall, and a ruptured spleen—the result of a blow from a fellow patient. Both proved fatal.

16. *Industries*.—Five thousand five hundred and sixty-four yards of cotton cloth were woven by the male patients from which 1,043 bajus, 940 pairs of trousers for native males, 137 jackets and 148 pairs of trousers for European males, 102 bajus and 90 sarongs for native females, 3 aprons, 36 pairs of bathing drawers, 2 mattress covers, 62 pairs of trousers and 33 coats for the male attendants at the Beri-beri Hospital were made by the female patients.

In addition, from canvas purchased, 84 strong rugs and 20 combination suits were made by the male patients.

17. A kitchen garden was started towards the close of 1917. Half an acre of ground was experimented with and the land planted with country vegetables—mainly—and bananas. So successful was the experiment that more and more Government land was encroached upon until we had $1\frac{1}{2}$ acres under cultivation. The garden began to produce in March, 1918, and between that month and the end of 1918, the Asylum was supplied with over 11,000 pounds of vegetables in addition to furnishing the staff and attendants with an ample daily supply of fresh vegetables. The garden has saved the diet vote of the Asylum the sum of 275 dollars.

Asylum labour was utilised for the tillage of the garden. In this connection I am glad to be able to report that the services of Head Attendant RAMLOTH who took a keen interest in the garden were recognised by the Government, who have granted him a monthly allowance of 5 dollars from the 1st January, 1919.

18. *Revenue*.—From paying patients the sum of thirteen thousand six hundred and ninety-nine dollars and cents seventy-five (\$13,699.75) has been received. The sale of empty kerosene tins, drums, etc., produced 82 dollars and 62 cents.

19. The cost of maintenance per patient, per mensem, was \$.....

20. I regret to have to report that the services of the Asylum clerk and interpreter had to be dispensed with on the last day of the year under review for obtaining money on false pretences from the friends of a Chinese patient.

Excepting this regrettable incident the staff has worked loyally.

21. I append tables furnishing details.

TABLE I.

LUNATIC ASYLUM.

Table showing the Admissions, Discharges and Deaths during the Year 1918.

—	Male.	Female.	Total.	Male.	Female.	Total.
In the Asylum on 1st January, 1918	...	...	...	305	62	367
Cases admitted :—						
First Admissions	...	...	...	235	48	283
Not First Admissions	...	...	...	26	8	34
Total cases under care during the year	...	...	...	566	118	684
Cases Discharged :—						
Recovered	71	16	87	...	...	...
Relieved	18	9	27	...	...	...
Not Relieved and transferred	74	18	92	...	...	...
Absconded	14	...	14	...	...	...
Died	80	9	89	...	...	...
Total cases discharged and died during the year	...	...	...	257	52	309
Remaining in the Asylum on 31st December, 1918	...	...	...	309	66	375
Average number resident during the year	...	...	...	332	70	402

TABLE II.

LUNATIC ASYLUM.

Table showing the Admissions, Re-admissions, Discharges and Deaths from 31st December, 1888, to 31st December, 1918.

	Male.	Female.	Total.	Male.	Female.	Total.
Remaining on the 31st December, 1888	...	...	...	176	32	208
Persons admitted during the period	...	...	...	5,004	888	5,892
Re-admissions	...	...	...	519	120	639
Total cases treated	...	...	...	5,699	1,040	6,739
Discharged Cases:—						
Recovered	2,217	342	2,559	...	...	...
Relieved	481	131	612	...	...	...
Not improved	464	136	600	...	...	...
Absconded	186	24	210	...	...	...
Died	2,042	341	2,383	...	...	...
Total cases discharged and died since 31st December, 1888	...	...	...	5,390	974	6,364
Remaining in the Asylum on 31st December, 1918	...	...	...	309	66	375

TABLE III.

LUNATIC ASYLUM.

Table showing the Admissions, Discharges and Deaths, with the Mean Annual Mortality and Proportion of Recoveries per cent on the Admissions for the Years 1887 to 1918 inclusive.

YEAR.	Admitted.		Discharged.						Absconded.			Died.			Remaining on 31st December of each Year.			Average Number Resident.			Percentage of Recoveries on Admissions.			Percentage of Deaths on the Average Number Resident.			
	Male.	Female.	Recovered.		Relieved.		Not Improved.		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	
			Male.	Female.	Male.	Female.	Male.	Female.																			
1887	173	17	196	56	...	...	...	...	...	...	37	73	14	77	178	29	207	183	27	210	...	...	...	...	...	14.81	36.49
1888	153	23	176	35	9	54	5	3	17	7	2	84	6	90	176	32	208	190	35	225	22.97	39.28	25.00	39.89	25.00	14.81	36.49
1889	186	24	210	67	9	73	13	4	17	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1890	224	30	254	87	7	94	23	1	24	4	1	145	11	156	157	48	205	186	41	227	38.83	23.33	37.00	36.69	38.18	69.72	...
1891	162	30	192	61	13	74	12	3	15	3	2	76	11	87	161	49	210	153	47	200	37.95	43.33	38.54	77.40	23.40	43.50	...
1892	158	29	187	71	14	85	15	4	19	6	1	43	14	57	179	43	222	170	44	214	44.94	48.27	48.45	49.67	31.82	26.63	...
1893	184	33	217	65	7	72	8	5	13	6	5	43	5	48	240	53	293	205	49	254	35.32	21.21	33.17	25.29	10.20	18.89	...
1894	169	29	198	69	11	80	21	4	25	4	3	73	16	89	239	48	287	244	52	296	40.83	37.93	40.41	20.97	39.77	30.07	...
1895	173	34	207	70	9	79	45	10	55	9	3	99	13	112	180	46	226	206	46	252	40.40	26.47	38.16	29.92	28.26	44.42	...
1896	202	28	230	86	16	102	7	2	9	2	1	79	6	85	205	49	254	183	50	233	42.37	57.14	44.35	48.06	12.00	36.48	...
1897	122	26	148	62	9	71	18	7	25	2	...	72	9	81	171	50	221	181	47	228	50.86	34.61	47.95	43.17	19.15	33.52	...
1898	137	24	161	61	7	68	16	3	19	17	6	85	10	95	125	48	173	156	52	208	44.52	29.17	42.24	39.77	19.23	45.17	...
1899	130	32	162	51	12	63	14	3	17	4	1	50	9	59	123	55	178	131	53	184	39.23	31.81	38.80	54.49	16.98	45.32	...
1900	157	30	187	54	5	59	9	1	20	2	6	93	30	123	118	47	165	128	52	180	34.39	10.60	31.02	72.66	17.69	58.30	...
1901	154	21	175	74	10	84	18	2	20	1	2	46	10	56	127	45	172	118	46	164	43.97	47.62	48.00	39.98	21.52	34.15	...
1902	143	16	159	82	8	90	11	1	12	1	2	38	4	42	133	45	179	130	44	174	57.34	50.00	56.60	29.23	9.09	24.14	...
1903	191	30	221	70	7	77	15	3	17	10	1	44	11	55	179	52	231	160	49	209	36.64	23.33	34.84	27.50	22.44	26.31	...
1904	223	31	254	90	14	104	20	3	23	9	2	48	11	59	232	51	283	213	55	268	40.96	45.16	40.94	22.53	20.00	22.01	...
1905	200	28	228	101	5	106	22	9	31	8	7	54	13	67	235	43	278	239	48	287	50.50	17.86	42.10	22.59	27.08	23.34	...
1906	199	32	231	85	11	96	28	10	38	4	1	71	4	75	238	48	286	245	45	290	42.71	34.37	41.06	28.98	8.88	25.77	...
1907	163	34	197	80	8	88	22	8	30	4	...	47	10	57	241	55	296	243	49	292	49.68	23.53	44.67	19.34	20.40	19.52	...
1908	175	37	212	57	7	64	23	6	29	3	1	45	20	65	279	57	336	265	61	326	32.57	18.02	30.19	16.98	32.79	19.93	...
1909	174	46	220	77	16	93	17	5	22	4	...	65	13	78	284	67	351	281	63	344	44.25	34.78	42.27	23.13	20.63	22.67	...
1910	182	46	228	70	11	81	14	8	22	4	2	102	13	115	262	71	333	285	74	359	43.41	30.43	40.79	35.79	17.57	32.03	...
1911	190	30	220	70	14	84	17	9	26	5	2	67	20	87	269	65	334	288	70	358	30.84	36.60	36.81	23.26	28.57	24.30	...
1912	205	33	238	75	17	92	8	1	9	3	2	58	6	64	357	73	430	326	67	393	36.58	51.51	38.69	17.44	8.95	16.31	...
1913	209	48	257	87	17	104	9	2	11	9	5	105	15	120	335	87	424	377	78	455	41.62	35.42	40.47	14.59	11.54	14.29	...
1914	190	36	226	75	7	82	10	3	16	32	4	105	15	120	335	87	424	385	88	473	38.19	38.88	38.30	27.27	17.04	25.37	...
1915	211	44	255	81	19	100	11	4	15	120	39	84	10	94	265	59	324	355	86	441	36.39	43.18	39.22	23.66	11.63	21.31	...
1916	217	46	263	73	14	87	12	3	15	100	2	36	9	45	250	76	333	247	67	314	33.64	30.43	33.08	14.98	13.43	14.33	...
1917	223	45	268	85	18	103	12	6	18	12	21	59	14	73	305	62	367	286	75	361	28.12	40.00	38.43	20.63	18.60	20.22	...
1918	261	56	317	71	16	87	18	9	27	74	18	80	9	89	309	66	375	332	70	402	26.82	28.57	27.44	24.10	12.56	22.14	...

TABLE V.
LUNATIC ASYLUM.

Showing the Causes of Deaths during the Year 1918, together with the Ages at Death.

CAUSES OF DEATH.	Under 15 years.		15 and under 20 years.		20 and under 25 years.		25 and under 30 years.		30 and under 35 years.		35 and under 40 years.		40 and under 45 years.		45 and under 50 years.		50 and under 55 years.		55 and under 60 years.		60 and under 65 years.		65 and under 70 years.		70 and under 75 years.		75 and under 80 years.		TOTAL.			
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.		
GENERAL DISEASES.—	...	...	1	...	4	...	3	...	6	2	8	4	4	10	8	1	9	1	1	...	1	...	1	...	1	...	...	...	39	3	42	
	Dysentery	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Pneumonia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Sapremia	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Septicæmia	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Tubercle	...	...	...	...	1	...	1	2	1	2	2	2	1	1	1	1	...	...	...	...	2	2	...	...	...	...	10	3	13		
	Malaria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Syphilis	...	...	1	...	1	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Enteric Fever	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
DISEASES OF THE BRAIN AND NERVOUS SYSTEM.—	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Cerebral Hemorrhage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Acute Brain disease	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Chronic Brain disease	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	General Paralysis of the Insane	...	...	...	...	...	...	...	...	...	...	...	4	3	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...		
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Carried forward	...	...	1	...	7	...	7	6	2	8	10	3	13	12	12	15	2	17	11	1	12	4	...	4	1	...	1	3	...	71	8	79

TABLE V.—Continued.

LUNATIC ASYLUM.

Showing the Causes of Deaths during the Year 1918, together with the Ages at Death.

CAUSES OF DEATH.	Under 15 years.			15 and under 20 years.			20 and under 25 years.			25 and under 30 years.			30 and under 35 years.			35 and under 40 years.			40 and under 45 years.			45 and under 50 years.			50 and under 55 years.			55 and under 60 years.			60 and under 65 years.			65 and under 70 years.			70 and under 75 years.			75 and under 80 years.			Total.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.						
<i>Brought forward</i> ...	...	...	1	...	...	1	7	...	7	6	2	8	10	3	13	12	...	12	15	2	17	11	1	12	4	4	1	...	1	3	...	3	1	...	1	...	...	...	...	...	71	8	79		
DISEASES OF THE RESPIRATORY SYSTEM.— Broncho-pneumonia ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2		
DISEASES OF THE DIGESTIVE SYSTEM.— Yellow Atrophy of liver ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	
Cancerum Ovis ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	
DISEASES OF THE URINARY SYSTEM.— Interstitial Nephritis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	
PARASITES.— Ankylostomiasis ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	
INJURIES.— Rupture of Spleen ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Fracture of emu ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
TOTAL ...	...	...	1	...	...	1	7	...	7	6	2	8	13	3	16	14	1	15	16	2	18	12	1	13	4	4	2	...	2	3	...	3	2	...	2	...	...	...	...	...	80	9	89		

TABLE VI.

LUNATIC ASYLUM.

Table showing the Length of Residence of those Discharged, Recovered and of those who Died, during the Year 1918.

Length of Residence.	Recovered.			Died.		
	Male.	Female.	Total.	Male.	Female.	Total.
Under one month	3	1	4	17	...	17
From one to three months	14	2	16	13	3	16
" three to six months	27	10	37	18	3	21
" six to nine months	13	1	14	4	...	4
" nine to twelve months	7	1	8	7	...	7
" one to two years	7	...	7	8	1	9
" two to three years	...	...	...	5	...	5
" three to five years	...	1	1	4	1	5
" five to seven years	...	...	...	...	1	1
" seven to ten years	...	...	...	1	...	1
" ten to fifteen years	...	...	...	3	...	3
" fifteen to twenty-five years	...	...	...	...	...	...
TOTAL	71	16	87	80	9	89

TABLE X-a.
LUNATIC ASYLUM.

Table showing the Probable Causes, Apparent or Assigned, of the Disorders in the Admissions, Discharges and Deaths of the Year 1918.

CAUSES.	ADMISSIONS.											
	Number of Instances in which a Cause was Assigned.											
	Admissions :—Male 261. Female 56. Total 317.											
	As Predisposing Cause.			As Exciting Cause.			As Predisposing of Exciting Cause.*			Total. †		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
<i>Moral.</i>												
Domestic Troubles (including loss of relatives and troubles) ...	...	...	...	2	2	4	...	...	...	2	2	4
Adverse Circumstances (including business anxiety and pecuniary difficulties) ...	...	...	...	6	...	6	...	...	...	6	...	6
Religious Excitement ...	...	...	...	...	...	...	...	...	...	...	...	...
Love Affairs (including seduction) ...	...	...	...	...	...	...	...	...	...	...	...	...
Fright and Nervous Shock ...	...	...	...	3	...	3	...	...	...	3	...	3
<i>Physical.</i>												
Intemperance in Drink ...	...	...	...	28	3	31	...	...	...	28	3	31
Venereal Disease ...	...	...	...	...	...	...	69	5	74	69	5	74
Self-abuse ...	...	...	...	...	...	...	...	...	...	...	...	...
Sunstroke ...	...	...	...	1	...	1	...	...	...	1	...	1
Accident or Injury ...	...	...	...	...	...	...	...	...	...	...	...	...
Pregnancy ...	...	...	...	...	...	...	...	...	...	...	...	...
Parturition and the Puerperal State ...	...	...	...	...	...	...	...	...	...	...	...	...
Uterine and Ovarian Disorder ...	...	...	...	...	...	...	...	...	...	...	...	...
Lactation ...	...	...	...	...	...	...	...	...	...	...	...	...
Puberty ...	...	...	...	5	...	5	...	...	...	5	...	5
Epilepsy ...	...	...	...	...	...	...	5	...	5	5	...	5
Privation and Starvation ...	...	...	...	...	...	...	...	...	...	...	...	...
Heart Disease and Cardid-Vascular Changes...	11	6	17	...	...	...	...	...	...	11	6	17
Phthisis ...	...	...	...	...	...	...	17	10	27	17	10	27
Malarial Fever ...	...	...	...	23	2	25	...	...	...	23	2	25
Typhoid Fever ...	...	1	1	...	...	...	...	...	...	1	...	1
Other Bodily Diseases or Disorders ...	...	...	...	...	...	...	31	10	41	31	10	41
Previous Attacks ...	34	10	44	...	...	...	...	...	...	34	10	44
Morphia (Opium) Habit ...	...	...	...	2	1	3	...	...	...	2	1	3
Hereditary Influences ascertained ...	9	2	11	...	...	...	...	...	...	9	2	11
Congenital Defect ...	8	...	8	...	...	...	...	...	...	8	...	8
Old Age ...	13	4	17	...	...	...	...	...	...	13	4	17
Indian Hemp Smoking ...	...	...	...	...	...	...	...	...	...	...	...	...
Unknown ...	...	...	...	...	...	...	...	...	...	54	15	69

* Where these could not be distinguished. † Some of the admissions are credited with more than one cause; therefore, the sum of the "known" and "unknown" causes exceeds that of the admissions.

TABLE X-b.

LUNATIC ASYLUM.

Table showing the Probable Causes, Apparent or Assigned, of the Disorders in the Admissions, Discharges and Deaths of the Year 1918.—Continued.

CAUSES.	DISCHARGES.											
	Number of Instances in which a Cause was Assigned.											
	Discharges:—Male 177. Female 43. Total 220.											
	As Predisposing Cause.			As Exciting Cause.			As Predisposing or Exciting Cause.*			Total.†		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
<i>Moral.</i>												
Domestic Troubles (including loss of relatives and friends) ...	...	...	...	...	2	2	...	...	...	...	2	2
Adverse Circumstances (including business anxieties and pecuniary difficulties) ...	...	...	...	1	...	1	...	...	...	1	...	1
Mental Anxiety and Worry and Overwork ...	...	...	...	5	...	5	...	...	...	5	...	5
Religious Excitement ...	...	...	...	...	...	...	...	...	...	...	...	...
Love Affairs (including seduction) ...	...	...	...	1	...	1	...	...	...	1	...	1
Fright and Nervous Shock ...	...	...	...	1	...	1	...	...	...	1	...	1
<i>Physical.</i>												
Intemperance in Drink ...	...	...	...	27	2	29	...	...	...	27	2	29
Venereal Disease ...	...	...	...	...	...	...	49	3	52	49	3	52
Self-abuse ...	...	...	...	...	...	...	...	...	...	...	...	...
Sunstroke ...	...	...	...	...	...	...	...	...	...	...	...	...
Accident or Injury ...	...	...	...	...	...	...	...	...	...	...	...	...
Pregnancy ...	...	...	...	...	...	...	...	...	...	...	...	...
Parturition and the Puerperal State ...	...	...	...	...	...	...	...	...	...	...	...	...
Uterine and Ovarian Disorder ...	...	...	...	...	...	...	...	...	...	...	...	...
Lactation ...	...	...	...	...	...	...	...	...	...	...	...	...
Puberty ...	...	...	...	2	...	2	...	...	...	2	...	2
Epilepsy ...	...	...	...	...	...	...	6	...	6	6	...	6
Privation and Starvation ...	...	...	...	4	3	7	...	...	...	4	3	7
Heart Disease ...	...	...	...	...	...	...	10	...	10	10	...	10
Phthisis ...	...	...	...	...	...	...	13	3	16	13	3	16
Malarial Fever ...	...	...	...	14	3	17	...	...	...	14	3	17
Typhoid Fever ...	...	...	...	...	...	...	...	...	...	...	...	...
Other Bodily Diseases or Disorders ...	...	...	...	...	...	...	21	5	26	21	5	26
Previous Attacks ...	29	18	47	...	...	...	...	...	...	29	18	47
Old Age ...	6	2	8	...	...	...	...	...	...	6	2	8
Opium ...	...	...	...	3	1	4	...	...	...	3	1	4
Hereditary Influences ascertained ...	...	...	...	...	...	...	...	...	...	...	...	...
Congenital Defect ...	9	1	10	...	...	...	...	...	...	9	1	10
Indian Hemp Smoking ...	...	...	...	...	...	...	...	...	...	...	...	...
Unknown ...	...	...	...	...	...	...	...	...	...	32	10	42

* Where these could not be distinguished. † Some of the discharges are credited with more than one cause; therefore, the sum of the "known" and "unknown" causes exceeds that of the discharges.

TABLE X-c.

LUNATIC ASYLUM.

Table showing the Probable Causes, Apparent or Assigned, of the Disorders in the Admissions, Discharges and Deaths of the Year 1918.—Continued.

CAUSES.	DEATHS.											
	Number of Instances in which a Cause was Assigned.											
	Deaths:—Male 80.				Female 9.				Total 89.			
	As Predisposing Cause.			As Exciting Cause.			As Predisposing or Exciting Cause.*			Total. †		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
<i>Moral.</i>												
Domestic Troubles (including loss of relatives and friends) ...	...	...	...	...	...	...	...	...	...	...	...	...
Adverse Circumstances (including business anxieties and pecuniary difficulties) ...	...	...	...	...	...	...	...	...	...	...	...	...
Mental Anxiety and Worry and Overwork ...	...	...	...	...	...	...	...	...	...	...	...	...
Religious Excitement ...	...	...	...	...	...	...	...	...	...	...	...	...
Love Affairs (including seduction) ...	...	...	...	...	...	...	...	...	...	...	...	...
Fright and Nervous Shock ...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Physical.</i>												
Intemperance in Drink ...	...	...	...	2	...	2	...	...	...	2	...	2
Venereal Disease ...	...	...	...	...	...	...	29	2	31	29	2	31
Self-abuse ...	...	...	...	1	...	1	...	...	...	1	...	1
Sunstroke ...	...	...	...	...	...	...	...	...	...	...	...	...
Accident or Injury ...	...	...	...	...	...	...	...	...	...	...	...	...
Pregnancy ...	...	...	...	...	...	...	...	...	...	...	...	...
Parturition and the Puerperal State ...	...	...	...	...	...	...	...	...	...	...	...	...
Uterine and Ovarian Disorder ...	...	...	...	...	...	...	...	...	...	...	...	...
Lactation ...	...	...	...	...	...	...	...	...	...	...	...	...
Puberty ...	...	...	...	...	...	...	...	...	...	...	...	...
Epilepsy ...	...	...	...	...	...	...	1	...	1	1	...	1
Privation and Starvation ...	...	...	...	...	...	...	...	...	...	...	...	...
Heart Disease and Cardio-Vascular Changes ...	...	...	...	...	...	...	4	2	6	4	2	6
Phthisis ..	...	...	...	...	...	...	22	2	24	22	2	24
Malarial Fever ...	...	...	...	1	...	1	...	...	...	1	...	1
Typhoid Fever ...	...	...	...	1	...	1	...	...	...	1	...	1
Other Bodily Diseases or Disorders ...	...	...	...	...	...	...	8	2	10	8	2	10
Previous Attacks ...	...	7	7	...	...	...	...	...	...	7	...	7
Old Age ...	...	5	6	...	...	...	...	...	...	5	1	6
Opium ..	...	...	...	...	...	...	...	...	...	...	...	...
Hereditary Influences ascertained ...	...	2	2	...	...	...	...	...	...	2	...	2
Congenital Defect ...	...	2	2	...	...	...	...	...	...	2	...	2
Indian Hemp Smoking ...	...	...	...	...	...	...	...	...	...	...	...	...
Unknown ...	...	...	...	...	...	...	...	...	...	20	1	21

* Where these could not be distinguished. † Some of the deaths are credited with more than one cause; therefore, the sum of the "known" and "unknown" causes exceeds that of the deaths.

TABLE XI.

LUNATIC ASYLUM.

Table Showing the Form of Mental Disorder on Admissions Recoveries and Deaths of the Year 1918, and the Form of Mental Disorder of the Inmates on 31st December, 1918.

FORM OF MENTAL DISORDER.	Admissions.			Recoveries.			Deaths.			Remaining in Asylum.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Congenital or Infantile Deficiency with Epilepsy	...	...	...	...	...	...	...	...	...	3	...	3
Do. without Epilepsy	9	3	12	...	...	...	4	...	4	16	3	19
Epilepsy acquired	4	...	4	...	...	...	1	...	1	5	2	7
General Paralysis of Insane	18	...	18	...	...	...	14	...	14	7	...	7
Delusional Insanity	3	1	4	1	...	1	...	...	...	9	2	11
Mania, Acute	176	38	214	47	14	61	48	4	52	148	37	185
Do. Acute, Delirious	1	...	1	...	...	...	1	...	1	...	...	...
Do. Chronic	...	...	...	...	...	...	...	...	...	6	1	7
Do. Recurrent	1	...	1	...	...	...	...	...	...	2	1	3
Do. A Potu	16	2	18	17	1	18	1	...	1	5	...	5
Do. Puerperal	...	...	...	...	...	...	...	...	...	...	...	...
Do. Senile	1	3	4	1	1	2	1	...	1	...	1	1
Melancholia, Acute	12	7	19	3	...	3	1	1	2	30	5	35
Do. Chronic	...	...	...	...	...	...	...	...	...	1	...	1
Do. Recurrent	...	...	...	...	...	...	...	...	...	...	...	...
Do. A Potu	4	...	4	1	...	1	...	...	...	3	...	3
Do. Puerperal	...	...	...	...	...	...	...	...	...	...	...	...
Do. Senile	...	...	...	...	...	...	...	...	...	...	...	...
Dementia, Primary	2	...	2	1	...	1	2	1	3	11	3	14
Do. Secondary	12	1	13	...	...	...	2	...	2	53	6	59
Do. Senile	1	1	2	...	...	...	4	...	4	5	1	6
Do. A Potu	1	...	1	...	...	...	...	...	...	1	...	1
Do. Organic	...	...	...	...	...	...	1	...	1	4	4	8
Not Insane on Admission	...	...	...	...	...	...	...	...	...	...	...	...
Delirium from Fever	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	261	56	317	71	16	87	80	9	89	309	66	375

TABLE XII.
LUNATIC ASYLUM.

Showing Occupation of Admissions.

Occupation.	Male.	Female.	Total.	Occupation.	Male.	Female.	Total.
				<i>Brought forward</i> ...	113	7	120
Actor ...	2	...	2	Iron smith ...	1	...	1
Architect ...	1	...	1	Interpreter ...	1	...	1
Barber ...	2	...	2	Junk sailor ...	2	...	2
Bandmaster ...	1	...	1	Lascar ...	1	...	1
Banglemaker ...	1	...	1	Musician ...	1	...	1
Bicycle repairer ...	2	...	2	Motorcar cleaner ...	1	...	1
Bill-collector ...	2	...	2	Mason ...	2	...	2
Blacksmith ...	2	...	2	Merchant ...	1	...	1
Boatman ...	4	...	4	Nil ...	...	45	45
Boiler cleaner ...	1	...	1	Nurse ...	...	1	1
Bullock-cart driver ...	3	...	3	Petty-trader ...	1	...	1
Carpenter ...	3	...	3	Physician Chinese ...	1	...	1
Cashier ...	1	...	1	Pig rearer ...	1	...	1
Clerk ...	10	...	10	Plank-carrier ...	1	...	1
Conductor ...	1	...	1	Planter-cocoanut ...	2	...	2
Cook ...	5	...	5	„ Paddy ...	1	...	1
Cooly ...	9	...	9	„ Rubber ...	2	...	2
„ Cargo ...	2	...	2	„ Vegetable ...	2	...	2
„ Changkol ...	2	...	2	„ Tapioca ...	2	...	2
„ Copra ...	1	...	1	Pork-seller ...	1	...	1
„ Coffee-shop ...	2	...	2	Private, Middlesex Regi- ment ...	3	...	3
„ Dock ...	1	...	1	Prostitute ...	...	1	1
„ Firewood ...	2	...	2	'Rikisha Peon ...	1	...	1
„ Nutmeg ...	2	...	2	„ Puller ...	9	...	9
„ Rubber estate ...	11	...	11	Rubber merchant ...	1	...	1
„ Road ...	2	...	2	„ tapper ...	13	...	13
„ Sago ...	3	...	3	Salesman ...	1	...	1
„ Shop ...	1	...	1	Sawyer ...	1	...	1
„ Store ...	2	...	2	Scholar ...	2	...	2
„ Tongkang ...	1	...	1	Seaman ...	1	...	1
Cake-seller ...	1	...	1	Seamstress ...	...	1	1
Draughtsman ...	1	...	1	Shoe-maker ...	3	...	3
Domestic Servant ...	4	...	4	Shopkeeper ...	1	...	1
Dresser ...	2	...	2	Silver smith ...	1	...	1
Engineer Apprentice ...	1	...	1	Sinkeh ...	1	...	1
„ Electric ...	1	...	1	Stoker ...	1	...	1
„ Machanic ...	1	...	1	Syce ...	1	...	1
Fitter ...	1	...	1	Tailor ...	6	...	6
Fruit-seller ...	1	...	1	Teacher ...	2	1	3
Firewood cutter ...	1	...	1	Timber-carrier ...	1	...	1
Fisherman ...	2	...	2	Tin miner ...	1	...	1
Fishmonger ...	2	...	2	Tukang-ayer ...	2	...	2
Food-hawker ...	2	...	2	Unknown ...	65	...	65
Goldsmith ...	2	...	2	Vagrant ...	1	...	1
Gunner ...	2	...	2	Vegetable-seller ...	4	...	4
Grass-cutter ...	5	...	5	Washerman ...	1	...	1
Grave-digger ...	1	...	1	Wood-cutter ...	1	...	1
Hawker ...	1	...	1				
Housewife ...	...	7	7				
<i>Carried forward</i> ...	113	7	120	TOTAL ...	261	56	317

BERI-BERI HOSPITAL, PASIR PANJANG.

REPORT BY DR. H. J. GIBBS, *Medical Superintendent.*

1. There remained on 31st December, 1917, one hundred and eleven patients.
2. Two hundred and sixty-two were admitted in 1918, giving a total treated of 373.
3. Of the admissions 14 were from the General Hospital, 226 from the Tan Tock Seng's Hospital, and 16 applied for admission at the Pasir Panjang Hospital.
4. Six of the above, all Japanese, paid for their treatment at the rate of 35 cents a day. They contributed \$88.20.
5. The nationalities of the admissions with their respective numbers were Chinese 250, Japanese 10 and Tamils 2.
6. Eighty-seven of the admissions were employees on rubber estates.
7. All the admissions had fed on No. 2 Siam Rice.
8. Of the total treated one was discharged cured, 198 had improved and 1 had not improved; 3 were transferred to the General Hospital for Surgical treatment, 41 absconded, and 15 died.
9. There remained on 31st December, 1918, one hundred and fourteen patients.
10. The average daily number resident was 116.
11. *Admissions.*—Of the two hundred and sixty-two patients admitted 8 were cases of Malaria, 11 gave a history of previous Syphilis and rapidly improved under specific treatment, 2 suffered from Pulmonary Tuberculosis, 1 was Hemi-plegic, 2 were sufferers from Asthma, 1 a case of Chronic Nephritis, 1 of Arthritis and the remaining 236 were typical cases of Beri-beri. The very great majority of the Beri-beri cases were atrophic.
12. Dysentery was prevalent during the greater portion of the year, 37 cases occurred amongst the patients. Twenty-nine cases of Influenza also occurred amongst them in the months of August and October. The disease assumed a comparatively mild form—all recovered.
- A case of Enteric Fever occurred in a patient who had been in residence for 15 months and 20 days. He died after an illness of 12 days.
13. *Deaths.*—Of the 15 deaths, 4 were from Beri-beri, 4 from Tubercle, 1 from Empyema, 1 from Enteric Fever, and 4 from Dysentery.
14. The death-rate, from all causes, on total treated was 4.02 per cent.

KANDANG KERBAU HOSPITAL FOR FEMALES.

REPORT BY MR. F. RODRIGUEZ, *Assistant Surgeon-in-charge.**Work done:—*

Remained on 31st December, 1917	...	...	59
Admitted during 1918	...	...	436
		Total	495
Discharged	...	...	354
Died	...	...	80
Remaining on 31st December, 1918	...	...	61

The nationalities of those admitted were:—

Europeans and Eurasians	...	...	...	32
Japanese	...	...	...	58
Chinese	...	...	...	228
Malays	...	...	...	30
Indians and others	...	...	...	88

The average daily sick was 66·17 and the percentage of deaths to total treated, 16·16. Ten cases died within 48 hours of admission. Eliminating these the death-rate would be 14·14.

The deaths were chiefly from Phthisis (14), Bright's disease (9), Heart disease (8), Syphilis (8), Old age with complications (6), Influenza (4), Malaria (4), Malignant new-growths (3), Nervous diseases (4).

The principal diseases treated were:—Venereal 82, Malaria 52, Influenza 33, Tuberculosis 40, Bright's disease 15, Valvular disease of the heart 13, and Injuries 17.

Out-patients.—Four thousand four hundred and ninety-seven Government servants and members of their families were treated, and put in 6,734 attendances.

Influenza appeared in an epidemic form in June, subsided in August and re-appeared about the end of September. Over five hundred medical certificates were issued to Government servants for this disease alone.

Staff.—There were no changes in the staff.

HEALTH OF SINGAPORE POLICE FORCE, 1918.

REPORT BY DR. T. MURRAY ROBERTSON, *Police Surgeon*.

The total out-patients amongst the different nationalities comprising this Force, treated at the Central Police Station numbered 4,502.

The principal diseases treated were:—

Malaria	...	...	...	300
Venereal	...	...	...	94
Fevers unspecified	...	...	...	950
Bronchitis	...	...	...	296
Influenza	...	...	...	131
Ulcers and Injuries	...	...	...	479
Alimentary diseases	...	...	...	301
Other diseases	...	...	...	1,904
No actual disease	...	...	...	147

The out-patients by nationality show as:—

Europeans	...	...	...	8
Eurasians	...	...	...	5
Sikhs	...	...	...	1,403
Malays	...	...	...	1,873
Indians	...	...	...	867
Tamils	...	...	...	139
Chinese	...	...	...	209

Infective diseases.—One case of Small-pox in a Malay; one case of Measles in a Malay; four cases of Enteric Fever, three Sikhs and one Indian.

Vaccination was well carried out and the various Police Stations in town and country were inspected.

The number of cases admitted to the General Hospital in 1918 from the Force was 769 made up as follows:—Europeans—5.

—	Sikhs.	Malays.	Indians.	Chinese.	Total.
Influenza ...	53	20	1	1	75
Fevers unspecified ...	56	39	32	10	137
Malaria ...	16	23	12	1	52
Venereal diseases ...	11	19	9	4	43
Injuries and Ulcers ...	49	35	35	5	124
Bronchitis etc. ...	41	11	15	1	68
Other diseases ...	96	59	33	10	198
Skin disease ...	17	4	5	...	26
No actual diseases ...	13	12	8	2	35
Infectious ...	3	2	1	...	6
					764

Admitted to sick room, Central Station 854 and of these were:—

Sikhs ...	69
Malays ...	432
Indians ...	254
Tamils ...	34
Chinese ...	65

Complaints of those admitted to sick room were mostly trivial and were chiefly:—

—	Sikhs.	Malays.	Indians.	Tamils.	Chinese.
Fever unspecified ...	33	190	98	20	19
Bronchitis ...	2	15	15	...	4
Ulcers and Injuries ...	6	47	29	6	3
Venereal diseases ...	...	5	4	...	2
Other diseases ...	4	95	76	...	24
No appreciable disease ...	24	57	32	8	13

Recruits admitted to the Force were:—Europeans Nil, Eurasians 1, Japanese 1, Sikhs 9, Malays 113, Javanese 10, Indians 22, Chinese 36 totalling 192; against rejected candidates:—Europeans Nil, Eurasians Nil, Sikhs 4, Malays 15, Indians other than Sikhs 7, Chinese 4 totalling 30.

European members of the Force, nine were off duty for short periods, four of these were sent to hospital; others not off duty, were attended for various complaints at their quarters and at the Central Police Station.

Malay constables appear to have a great aversion to being sent to the General Hospital for treatment and many of them, apparently to avoid being sent there, take themselves off to remote parts of the Island to which they are with difficulty traced. It would be well if this could be assured.

Return shewing the number of Non-Commissioned Officers and men admitted to Hospital other than through the orders of the Police Surgeon:—

<i>Number of Non-Commissioned Officers.</i>	<i>Number of men.</i>	<i>Remarks.</i>
—	—	—
42	293	...

APPENDIX B.

PENANG.

REPORT BY DR. J. GRAY, B.A., M.B., B.Ch., *Acting Chief Medical Officer.*

Statistics.—Population:—Estimated mean annual 151,210.

Birth-rate:—For 1916: 27·11; for 1917: 29·48; 1918: 27·18.

Death-rate:—For 1916: 30·10; for 1917: 35·72; for 1918: 44·01.

Infantile Mortality:—1911. 1912. 1913. 1914. 1915. 1916. 1917. 1918.

— — — — — — — —
201 186 209 198 203 165 229 204

Table II shews for Penang Island Hospitals the figures for some important diseases:—

Diseases.	1915.		1916.		1917.		1918.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Phthisis ...	309	174	264	127	272	145	354	175
Typhoid ...	...	...	...	...	11	4	20	13
Diarrhœa ...	136	8	151	6	140	4	150	21
Dysentery ...	342	129	486	117	406	119	337	132
Ankylostomiasis ...	197	34	251	37	306	63	360	80
Syphilis ...	779	4	966	41	836	36	680	52
Gonorrhœa ...	218	1	272	...	157	...	91	...
Ulcers of Genl. Org. ...	14	...	88	...	205	...	168	...
Tetanus ...	6	6	3	2	6	3	3	3
Small-pox ...	28	5	131	38	39	10	58	16
Cholera ...	...	...	1	1	14	8	92	67
Plague ...	1	1	4	3	6	4	29	17
Malaria ...	1,111	57	1,677	106	1,493	118	1,379	137
	3,560		4,782		4,305		4,434	

I have been acting as Chief Medical Officer throughout the year. Dr. DODDS was Medical Officer, General Hospital, Penang, throughout the year.

QUARANTINE CAMP, JELUTONG.

Two hundred and forty-three cases were treated during the year, viz.: Small-pox 51, Chicken-pox 154, Measles 8, Plague 21, Observation 8, Adenitis 1.

There were 32 deaths during the year, viz.: Small-pox 14, Measles 1, and Plague 17.

The death-rate to total treated was 13 per cent.

There were 246 contacts during the year.

GENERAL HOSPITAL, PENANG.

The following table shows the total number of cases treated in all wards during the past year:—

<i>European Wards.</i>	<i>Died.</i>	<i>Percentage.</i>	<i>Native Wards.</i>	<i>Died.</i>	<i>Percentage.</i>
—	—	—	—	—	—
503	35	6.95	2,633	232	8.81

Of the above 35 deaths in the European Wards 11 took place within 48 hours of admission and of the 232 deaths in the Native Wards, 47 within 48 hours of admission. Deducting these, the death-rate for the European Wards was 4.87 per cent and for the Native Wards 7.15 per cent.

During the year under report 530 cases were sent in by the Police for free treatment.

The average daily sick was males 74.20 and females 41.72. The average stay in hospital of those discharged was 32.97 days, of those remaining 184.99 and of those dying 52.69 days.

The chief diseases treated were as follows:—

Malaria	...	...	...	...	373
Venereal	...	...	...	...	244
Dysentery	...	...	...	...	58
Beri-beri	...	...	...	...	18
Influenza	...	...	...	...	345
Phthisis	...	...	...	...	81
Ankylostomiasis	...	...	...	...	67
Enteric Fever	...	...	...	...	15
Injuries	...	...	...	...	385

The chief causes of death were:—

Malaria	...	...	...	...	25
Influenza	...	...	...	...	39
Phthisis	...	...	...	...	30
Dysentery	...	...	...	...	30
Pneumonia	...	...	...	...	13
Ankylostomiasis	...	...	...	...	14

REPORT ON SURGERY AT THE GENERAL HOSPITAL, PENANG, DURING 1918.

REPORT BY DR. J. GRAY, B.A., M.B., B.Ch., *Surgeon-in-charge.*

The following table shows the operations and results:—

MAJOR CASES.	Total.	Cured.	Relieved.	Not improved.	Died.	Remaining.
Exploratory Laparotomy ...	12	6	...	5	1	...
Herniotomy ...	14	12	...	...	1	1
Appendectomy ...	2	2	...	...	...	...
Incision and drainage—Appendix abscess	1	1	...	...	...	...
Gastro-enterostomy ...	1	...	...	...	1	...
Cholecystostomy ...	1	1	...	...	...	...
Incision and drainage Hepatic Abscess	1	...	1	...	...	...
Hysterectomy ...	2	2	...	...	...	...
Ovariectomy ...	1	1	...	...	...	...
Supra-pubic Cystotomy ...	1	1	...	...	...	...
External Urethrotomy ...	3	1	...	...	...	2
Urethral lithotomy ...	2	2	...	...	...	...
Amputation—penis ...	1	1	...	...	...	...
" Upper Extremity ...	4	3	1	...	...	...
" Lower " ...	5	5	...	...	...	...
Thyroidectomy ...	1	1	...	...	...	...
Radical Cure—Hydrocele ...	6	6	...	...	...	...
Ligature Hæmorrhoids ...	1	1	...	...	...	...
Excision " ...	5	5	...	...	...	...
" Testis ...	1	1	...	...	...	...
" scrotum (elephantiasis) ...	2	1	...	...	...	1
" labia (") ...	1	1	...	...	...	...
Cheiloplasty ...	2	2	...	...	...	...
Ligature femoral artery ...	5	5	...	...	...	...
Excision of aneurismal sac ...	1	1	...	...	...	1
Total ...	76	62	2	5	3	5
Minor Operations ...	413	274	127	1	3	8
Grand Total ...	489	336	129	6	6	13

In addition to the above many cases of wound brought by the Police were sutured, dislocations reduced and cases examined under chloroform. None of the cases call for special comment.

PRISON HOSPITAL, PENANG.

REPORT BY DR. J. GRAY, *Acting Chief Medical Officer.*

1. The sanitary condition of the Prison and the general health of the prisoners were satisfactory.
2. There remained 6 patients at the end of 1917 while 399 patients were admitted during the year, making a total of 405 patients treated as compared with 289 of the preceding year.
3. The daily average of sick was 11.70 as compared with 7.48 in 1917.
4. There were 7 deaths during the year as compared with 5 of the preceding year, while the death-rate was 1.23.

5. The deaths were due to:—

Phthisis	...	...	...	...	4
Secondary Syphilis	...	...	...	...	1
Bright's Disease	...	...	...	...	1
Broncho-pneumonia following Influenza	...	...	...	...	1

6. There was an outbreak of Influenza during the months of October and November. Eighty-three cases were admitted into the hospital of whom one died from Broncho-pneumonia.

7. Forty-six vagrants were admitted into the hospital of whom 4 died.

8. The principal diseases treated were:—

Influenza	...	...	...	...	83
Dysentery	...	...	...	...	18
Malaria Fever	...	...	...	...	29
Diarrhoea	...	...	...	...	28
Ulcer	...	...	...	...	25
Abscess	...	...	...	...	21
Phthisis	...	...	...	...	9
Eye Diseases	...	...	...	...	3

DISTRICT HOSPITAL, PENANG.

REPORT BY DR. J. LOUDON, *Medical Officer*.

1. There remained on 31st December, 1917, 327 patients and 4,342 were admitted during 1918 making a total of 4,669. The corresponding figures for 1917 were 361 and 4,136 making a total of 4,497.

2. The number of deaths during the year was 666 giving a death-rate of 14.26 per cent as compared with 498 and 12.04 per cent in 1917.

3. The high percentage of deaths is due to the outbreak of Influenza during the last quarter of the year. The percentage of deaths of Influenza was 26.43 for the last quarter.

4. Of the deaths 28 occurred within 24 hours of admission and 90 within 48 hours. Excluding these the death-rate would be 13.47 and 12.57 respectively.

Ophthalmic Ward.

1. One hundred and eighty-two patients were treated during the year of which 173 were in-patients and 9 out-patients.

2. Thirty-seven operations were performed during the year with satisfactory results.

BALIK PULAU HOSPITAL.

REPORT BY DR. J. GRAY, *Acting Chief Medical Officer*.

During the year 201 patients were admitted and with 12 cases remaining from the previous year, the total treated was 213 as compared with 172 during the previous year. Of the 213 cases treated 206 were males and 7 females. The daily average of sick was 16.70 compared with 15.69 of the previous year. The total amount of hospital charges collected during the year was \$61.76.

The principal diseases treated were:—

Malaria	...	...	...	39 cases with 2 deaths.
Ulcers	...	...	...	33 " " — "
Influenza	...	...	...	20 " " 3 "
Syphilis	...	...	...	18 " " 3 "
Bronchitis	...	...	...	9 " " — "
Phthisis	...	...	...	9 " " 5 "
Dysentery	...	...	...	8 " " 4 "
Ankylostomiasis	...	...	...	6 " " 1 "
Pneumonia	...	...	...	5 " " 4 "

The following minor operations were done:—

Abscess incised	...	...	...	...	2
Enucleation of glands	...	...	...	...	2
Scraping of Ulcers	...	...	...	...	20
Incision of Cellulitis	...	...	...	...	2

The death-rate was 15.49 as compared with 15.11 of the previous year. By deducting three deaths which occurred within 24 hours of admission, the percentage of deaths was 14.08. The death-rate was high as bad cases were only admitted into the hospital and trivial cases were treated as out-door patients. Most of the deaths were due to Dysentery, Pneumonia, Phthisis, Syphilis, and Influenza.

Eighteen cases of Small-pox, 6 cases of Chicken-pox and 20 cases of Plague were reported in the district during the year. Of the 18 cases of Small-pox, 12 went to Pulau Butong and 4 died. Out of the 20 cases of Plague 19 cases were at Gertak Sunggol and 1 at Sungei Pinang. Sixteen of these died. Most of the fatal cases of Small-pox were never vaccinated. Four hundred and two re-vaccinations were done during the year.

LUMUT HOSPITAL, FINDINGS.

REPORT BY DR. J. GRAY, *Acting Chief Medical Officer.*

Building.—A new office and dispensary was built during the year.

Work done.—There were 453 admissions, which, with the 26 cases remaining from the previous year, makes a total of 479 cases treated, as compared with 622 of the previous year. The daily average number of patients was 17.31 as compared with 25.50 of the previous year. The total amount of hospital charges collected was \$330.96.

The principal diseases treated were as follows:—

Malaria	...	...	...	148 cases with 23 deaths.
Influenza	...	...	...	69 " " 29 "
Ulcer	...	...	...	47 " " no "
Ankylostomiasis	...	...	...	42 " " 13 "
Syphilis	...	...	...	22 " " 2 "
Dysentery	...	...	...	20 " " 12 "
Phthisis	...	...	...	6 " " 3 "
Pneumonia	...	...	...	6 " " 2 "
Fracture	...	...	...	6 " " 1 "
Enteric Fever	...	...	...	4 " " 4 "

Mortality.—There were 101 deaths, of these 40 died within 48 hours of admission. The percentage of deaths to total treated was 21. The death-rate falls to 12·7 when the deaths within 48 hours of admission are excluded. Admissions and deaths are as follows:—

	<i>Admissions.</i>	<i>Deaths.</i>
Dindings	287	59
Sitiawan (F. M. S.)	166	42

Infectious Diseases.—There were 4 cases of Enteric Fever with 4 deaths from Sitiawan. There was an outbreak of Influenza in Dindings and Sitiawan during the months of October and November. Sixty-nine cases were admitted into the hospital and 29 of them died. Sixteen cases died within 48 hours of admission. Medicines were freely distributed to the public during the outbreak.

Admissions and deaths were as follows:—

	<i>Admissions.</i>	<i>Deaths.</i>
Dindings	46	17
Sitiawan	23	12

LEPER ASYLUM, PULAU JEREJAK.

REPORT BY DR. F. R. SAYERS, *Medical Officer-in-charge.*

1. *Statistics:—*

Remained on 31st December, 1917 ...	Colonial 213 Perak 172 Selangor 39 Kedah 8	432
Admitted during 1918	Colonial 68 Perak 58 Selangor .. Kedah 10	136
Total inmates ...	...	568
Discharged during 1918	Colonial 7 Perak 4	11
Absconded during 1918	Colonial 7 Perak 1	8
Died during 1918	Colonial 70 Perak 75 Selangor 14 Kedah 5	164
Remaining during 1918	Colonial 197 Perak 150 Selangor 25 Kedah 13	385

The average number of inmates was 433·8.

The percentage of deaths was 28·87.

Visits.—Official visits were made during the year by—

The Hon'ble Resident Councillor, Penang.

The Principal Civil Medical Officer, Straits Settlements.

The Acting Principal Civil Medical Officer.

The Principal Medical Officer, Federated Malay States.

Donation.—The lepers received the usual New Year gift of 25 cents per man.

Staff.—Assistant Surgeon A. H. WHEATLEY worked throughout the year as Resident Assistant Surgeon.

Colonial Dressers V. SANTIAGO, PAHWAN BIN PACHEE, and W. W. GASPER worked throughout the year.

Colonial Apprentice Dresser D. C. ALMEIDA resigned and was replaced by MOHAMED IBRAHIM BIN MOHAMED SHERIFF.

Perak Dressers V. SITHAMPARAPILLAY, P. T. NAGARATNAM and J. D. KASSIM were transferred and replaced by V. RATNAM, A. W. CHINADURAI and C. N. PUNTUR.

Selangor Dresser S. NALLATAMBY was transferred and replaced by M. VEERAIGAM. ...

The health of the staff has been fair. Influenza broke out amongst the staff in October. There were twenty cases with no deaths.

Inmates.—(a) The general health of the inmates has been fair.

(b) Influenza broke out in October. There were 104 cases with 27 deaths.

(c) *Treatment of leprosy.*—Seven patients (5 Chinese and 2 Eurasians) were treated by injections of Sodium Gynocardate. One shewed marked, and three others slight, improvement at the end of the year.

Water-service.—There was a serious shortage of potable water during January, February and March. During February the staff and inmates depended solely on shallow wells for their water-supply.

On 22nd April, 1918, a special addition was made to the Colonial Estimates 1918 for the purpose of raising the walls and re-roofing the Asylum Reservoir. During the "rainy season" towards the end of 1918 this reservoir overflowed on 29 days. It is expected that this wastage will be lessened when the walls of the reservoir have been raised.

The tables appended are:—

- A. Giving the number of admission, total number of deaths, and the daily average for the last 24 years;
- B. Giving the nationality of the inmates;
- C. Shewing the occupation of inmates previous to admission.

TABLE A.

SHewing THE NUMBER OF ADMISSIONS, TOTAL NUMBER OF DEATHS AND THE TOTAL NUMBER OF INMATES AND THE DAILY AVERAGE FOR THE LAST 24 YEARS.

Years.	Remained from previous years.	Colonial.	Perak.	Selangor.	Kedah.	Total.	Deaths.	Percentage of Deaths.	Daily average.
1895.	332	121	34	...	...	487	146	29.97	313.06
6	301	145	24	...	...	470	136	29.93	303.37
7	286	152	...	...	...	438	130	29.68	278.64
8	253	152	16	...	...	421	123	29.21	262.10
9	247	123	20	...	...	390	142	36.41	239.15
1900.	214	97	59	...	...	370	115	31.08	214.15
1	233	80	29	...	...	342	88	25.73	233.35
2	235	84	33	...	...	352	73	20.73	243.27
3	244	119	71	...	...	434	84	19.35	264.53
4	334	92	42	...	...	468	140	29.91	311.02
5	282	148	36	...	...	466	78	16.73	319.73
6	357	107	32	...	...	496	138	27.82	344.30
7	336	100	52	...	...	488	110	22.54	361.74
8	356	98	52	...	...	506	107	21.15	383.73
9	370	90	117	...	...	577	134	23.22	396.67
1910.	420	97	94	...	...	611	186	30.44	413.83
1	385	96	90	50	...	621	157	26.12	404.37
2	421	90	79	1	6	597	138	23.11	417.78
3	428	99	42	...	1	570	189	33.15	397.06
4	370	85	104	20	2	581	164	28.22	396.47
5	403	100	46	19	4	572	140	24.47	411.58
6	423	86	63	22	3	597	132	22.11	427.56
7	442	68	18	11	5	544	105	19.30	431.41
8	432	68	58	...	10	568	164	28.87	433.80

TABLE B.

SHewing THE NATIONALITIES OF INMATES 1918.

Nationality.	Colonial.	Perak.	Selangor.	Kedah.	Total.
Hokien ...	58	21	4	3	86
Teochew ...	37	10	2	3	52
Cantonese ...	90	86	11	6	193
Kheli ...	31	82	17	2	132
Hylam ...	21	2	1	2	26
Kowchew ...	5	1	...	...	6
Eurasians ...	5	1	...	...	6
Malay ...	...	...	1	...	1
Kling Islams ...	1	...	...	...	1
Tamils ...	29	26	3	2	60
Sikhs ...	3	...	...	...	3
Javanese ...	1	1	...	...	2
Total ...	281	230	39	18	568

TABLE C.
SHEWING THE OCCUPATION OF INMATES FOR 1918.

Occupation.	Colonial.	Perak.	Selangor.	Kedah.	Total.	Remarks.
Actor ...	1	...	...	...	1	
Barber ...	1	1	2	...	4	
Basket-maker ...	1	1	...	...	2	
Boat-man ...	1	...	1	...	2	
Boy ...	1	...	...	...	1	
Black-smith ...	5	1	...	...	6	
Butcher ...	...	...	1	...	1	
Cart-driver ...	2	...	...	...	2	
Cart-puller ...	1	...	...	...	1	
Carpenter ...	14	8	...	2	24	
Chinese Clerk ...	...	...	...	1	1	
Chinting ...	1	...	...	...	1	
Cook ...	3	...	...	1	4	
Conductor ...	1	...	...	...	1	
Cake-seller ...	3	...	...	...	3	
Dhoby ...	1	1	1	...	3	
Dresser ...	1	...	...	...	1	
Fireman ...	1	...	...	...	1	
Fisherman ...	1	...	...	...	1	
Fitter ...	2	...	...	...	2	
General coolie ...	151	99	17	10	277	
Gardener, vegetable ...	6	10	...	1	17	
Gold-smith ...	4	...	...	...	4	
Mason ...	3	1	...	1	5	
Hawker ...	3	1	...	...	4	
Mining coolie ...	11	91	15	...	117	
Motor car driver ...	2	...	...	...	2	
Native physician ...	1	...	...	1	2	
Nil ...	21	5	1	...	27	
Painter ...	3	3	...	...	6	
Planter ...	1	2	...	...	3	
Post peons ...	2	...	1	...	3	
Poultry rearer ...	1	...	...	...	1	
Railway Guard ...	1	...	...	...	1	
Rikisha-puller ...	3	...	...	...	3	
Rubber-tapper ...	1	...	...	...	1	
Sailor ...	3	...	...	...	3	
Scavenger ...	1	...	...	...	1	
School boy ...	2	1	...	...	3	
Shoe-maker ...	1	...	...	...	1	
Shop-keeper ...	2	...	...	...	2	
Stone-breaker ...	1	...	...	...	1	
Syce ...	...	...	...	1	1	
Tamil clerk ...	...	1	...	...	1	
Tailor ...	6	1	...	...	7	
Tindal ...	2	...	...	...	2	
Vagrant ...	2	...	...	...	2	
Vegetable-seller ...	1	...	...	...	1	
Watchman ...	3	1	...	...	4	
Wood-cutter ...	2	2	...	...	4	
TOTAL ...	281	230	39	18	568	

FEMALE LEPER WARD, JELUTONG.

REPORT BY DR. J. GRAY, *Acting Chief Medical Officer.*

Thirty-one cases remained at the end of 1917, and five cases were admitted during the year making a total treated of 36 cases.

There were two deaths during the year, the average stay of those who died being 1.52 years.

REPORT ON VACCINATION DURING 1918.

REPORT BY DR. J. GRAY, *Acting Chief Medical Officer.*

The number of children and others collected by the Police for vaccination during the year 1918 in Penang was 1,674, and 94·62 per cent of these vaccinations were successful. There were also 352 successful vaccinations reported by the private practitioners and 820 performed at "Lam Hua Ee" Hospital.

There were also 4,285 re-vaccinations performed.

The subjoined table shows the number vaccinated during the past five years and the number of births registered:—

Year.	Vaccinations in Town and country districts.	Percentage of Successful cases.	Total births registered.
1914	2,657	93·90	3,726
1915	2,659	97·29	4,115
1916	2,267	98·06	5,410
1917	1,844	93·05	4,450
1918	1,674	94·62	4,110

APPENDIX C.

PROVINCE WELLESLEY.

REPORT BY DR. H. W. FURNIVALL, M.B., BAC. SURG. (DURHAM),
Medical Officer-in-charge.

Public health of the Province was decidedly good during the 1st, 2nd and 3rd quarters, and but for the influenzal pandemic in October and November, would have continued so to the year's close.

Notifiable infectious diseases (excluding Influenza) totalled 151 for the year, against 373 for 1917:—

	1918.	1917.
Variola	112	331
Varicella	35	38
Puerperal	2	1
Enteric	2	—
Cholera	—	2
Vaccinia	—	1
	151	373

Small-pox cases to the number of 70 were recorded in Northern District, Province Wellesley. The Central District, Province Wellesley, had but 4 cases and the Southern District, Province Wellesley, 38 cases. I have no doubt that the numerous re-vaccinations performed in connection with each occurrence of Small-pox in 1917 and which work was continued in the year under review, account for the large decrease of cases in 1918. I submit a table showing monthly incidence of Small-pox, Cholera and Plague in Province Wellesley and adjacent territory for the year 1918. It will be noticed that Cholera and Plague passed us by. I was able to establish a connection between certain of the Small-pox cases in Province Wellesley and adjacent States.

*Monthly incidence of Notifiable (infections) cases in Province Wellesley compared with reported incidence
in adjacent places.*

1918.

PLACES.	JANUARY.			FEBRUARY.			MARCH.			APRIL.			MAY.			JUNE.			JULY.			AUGUST.			SEPTEMBER.			OCTOBER.			NOVEMBER.			DECEMBER.		
	Small-pox.	Cholera.	Plague.	Small-pox.	Cholera.	Plague.	Small-pox.	Cholera.	Plague.	Small-pox.	Cholera.	Plague.	Small-pox.	Cholera.	Plague.	Small-pox.	Cholera.	Plague.	Small-pox.	Cholera.	Plague.	Small-pox.	Cholera.	Plague.	Small-pox.	Cholera.	Plague.	Small-pox.	Cholera.	Plague.	Small-pox.	Cholera.	Plague.	Small-pox.	Cholera.	Plague.
Province Wellesley ...	8	...	...	24	...	...	14	...	...	21	...	...	13	...	...	3	...	...	3	...	...	12	...	...	7	...	...	5	...	...	...	...	...	2	...	...
Penang ...	16	...	6	5	...	4	3	...	...	2	...	1	1	...	...	6	...	3	4	...	3	14	...	4	7	...	11	4	1	9	...	3	...	2	5	2
Federated Malay States ...	...	...	...	3	...	...	1	...	...	18	...	12	...	...	...	2	...	5	1	2	5	4	14	...	...	21	...	...	32	...	...	48	...	5	9	...
Kedah ...	...	...	...	3	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL ...	24	...	6	35	...	4	21	...	...	41	...	13	14	...	...	11	...	8	8	2	8	37	14	4	14	21	11	9	33	9	3	48	2	10	14	2

Types of Small-pox were as follows:—

	<i>Confluent. Modified. Discrete. Hæmorrhagic. Grand Total.</i>				
Total cases	45	34	31	2	112

Malarial Fevers shewed an increase of 92 cases treated in Government Hospitals and 52 in Estate Hospitals. The death-rate for Government Hospitals being 9·96, against 8·95 per cent in 1917. This increase was due no doubt to the diminished rainfall of the year, and it was noted that as the total rainfall for any quarter approached 1,000 m.m. there was a marked drop in the cases admitted for such quarter.

Ankylostomiasis.—Cases of such were treated in Government Hospitals to the number of 194, against 253 for the year 1917; Estate Hospitals give 118, against 188 in 1917. Despite this improvement, Sungei Bakap Hospital reports that 90 per cent of the year's admissions had ankylostoma ova in their stools, from which one can reduce a very generalised infection of the natives of this southern district, Province Wellesley, seeing the hospital is made use of by a large number of estates. Bukit Mertajam Hospital found 15 per cent of infection, and Butterworth Hospital shewed 50 per cent of cases specially examined.

Diarrhœa and Dysentery.—Government Hospitals treated 105 cases with death-rate of 39·04 per cent, against 154 cases and 33 per cent death-rate for 1917. Estate Hospitals give 209 cases and 17·70 per cent death-rate, against 228 cases with 21·49 per cent death-rate in 1917. The reasons for the diminution with the diminished rainfall of 1918 are not very apparent.

Phthisis.—The figures for this complaint are 50 with death-rate of 29 per cent, compared with 63 and death-rate of 44 per cent for year 1917 in Government Hospitals. Estate Hospitals give 34 cases and death-rate of 44 per cent, against 21 cases and death-rate of 61·9 per cent in 1917.

Veneral Diseases.—In-patients were admitted to the number of 222, against 256 in 1917, and out-door patient figures show 156 cases, against 206 in 1917.

Influenza.—This very infectious complaint appeared in Province Wellesley in October and had a duration of 6 weeks. It reached pandemic proportions. Our Government Hospitals treated 284 such cases as in-patients and 417 as out-patients. The disease was declared notifiable by Government but many cases amongst villagers went unrecognised. One met corpses and funerals on whatever route one happened to take during the visitation, and I am satisfied that the large excess of deaths during the 4th quarter under "Fevers unspecified", viz.: 1,700 to 2,000 such was really from Influenza. Preventative measures were carried out vigorously and independently by estates, and Government distributed 40 gallons of Izal disinfectant to quarters occupied by its servants throughout the Province. In addition the Police distributed certain matter printed in different native dialects and English, concerning advisable precautionary measures to be adopted. I sent a Malay dresser with drugs and disinfectant to certain distant kampongs in the Southern district to show that we were anxious to assist the Malays. He had a measure of success. The disease victimised all sections and classes of the population of the Province, including the various departmental staffs.

Population.—The estimated mean for the year (excluding immigrants and emigrants) was 134,881, which shows 1,567 decrease on that for 1917. The total births recorded were 4,109 which works out at 30·40 per mille against 4,484 births and a ratio of 32·86 per mille in 1917. The total deaths amounted to 5,676 against 3,914 in 1917, this gives a death-rate of 42·08 per mille, against 28·66 per mille in 1917. It is to be noted that these ratios are based on the above-mentioned mean population which excludes immigrants and emigrants; but the actual mean population of the Province is 139,538 for the year if immigrant and emigrant figures are included, therefore the actual ratios for births and deaths must be much lower.

The infantile mortality was 125 per mille, against 131 per mille in 1917.

Vaccination.—Three thousand three hundred and ninety-eight primary vaccinations were performed (of which 3,307 were done by Government vaccinators)—with the following results:—Two thousand seven hundred and eight perfect, 207 modified, 344 failed, and 139 not inspected.

Secondary vaccinations totalled 7,077 (of which 61 were done by private vaccinators). Though inspections were made in numerous instances, we do not possess a complete enough record to tabulate results.

These figures are to be compared against 3,645 primary and 10,022 secondary vaccinations performed in 1917, showing a decrease under both headings for the year 1918, and the diminished number of births and occurrences of Small-pox account for the smaller figures in each instance. I append a table of births and primary vaccinations for the past years:—

Year.			Births.	Vaccinations.	Ratio.
1914	...	...	4,371	4,059	92·86
1915	...	...	4,359	3,784	86·80
1916	...	...	4,180	3,576	80·76
1917	...	...	4,484	3,645	81·29
1918	...	...	4,109	3,307	80·48

Rainfall.—The mean total rainfall of the four Government recording stations situated at Penaga, Butterworth, Bukit Mertajam and Sungei Bakap, was 1,977·18 millimetres for the year, against 2,129·94 millimetres in 1917. February was the driest month at all four stations and Sungei Bakap recording but 92 millimetres was the lowest of all four.

The wettest months were:—

October	...	428·5 millimetres	...	Sungei Bakap.	...
November	358·	„	...	Butterworth.	
December	410	„	...	Bukit Mertajam.	
December	432	„	...	Penaga.	

and as already stated they synchronised with the diminution in malarial cases, and the influenzal visitation.

Water Supply.—The diminished rainfall of the year taxed to the utmost our two reservoir sources of water situated at Bukit Panchore (Southern District) and Bukit Sereyah (Central District), as a consequence the supply from the latter had to be made a daily intermittent one of a few hours duration only, and restricted to domestic use. Fresh applications to supply trading concerns were refused, and the Railway Department had to obtain their water for locomotives from the river Muda at Pinang Tunggal. Butterworth suffered such a small supply during the months of July, August and September that a tank was placed in position on the ground fronting the Butterworth Hospital—it being proposed to charge it from water boats moored to a wooden pier recently constructed, should the pipe supply in Butterworth ever again reach the infinitesimal quantity that it did in the above-mentioned months.

The Penaga Wireless Station installed storage rain water tanks during the year, because the well water though it had passed a Jewell filter was said to have an unpleasant taste. I would here mention that a sample of such filtered water taken in the month of March gave on bacteriological analysis the most perfect result. The usual objection to the use of a Jewell could not obtain at a station where there is a resident engineer to attend to it.

It is to be hoped that the screening of such tanks will be maintained in such good order, that mosquitos won't gain access. The guttering around the roof will also require to be constantly freed from rubbish which may stagnate water therein.

I understand that the Rural Board have addressed Government on matter of changing the present position of the Syphon in Prai River—a course necessitated by the new dock works in progress there.

Sanitation.—Two motor lorries have been acquired and are used to transport rubbish from the villages of Bukit Mertajam and Bukit Tengah to the incinerator of the former place. Three concrete dustbins were constructed in Bukit Mertajam district. Four hundred and fifty feet of cement concrete drains were laid down in Bukit Mertajam and Kepala Batas villages; other drains in Bukit Mertajam, Butterworth, and Nibong Tebal were repaired.

The Ordinance under the Sale of Food and Drugs Enactment of 1914 were applied by Government to Province Wellesley from the 1st January, 1918,—so far as the article fresh milk was concerned, prosecutions and convictions under the same have occurred for offence of adulterating such article. I am not aware of any prosecution having been instituted for failure of compliance with the other provisions of the said Ordinance in regard to fresh milk. It was realised with the smallness of the executive at one's command little could be done to carry out and enforce such provisions in Province Wellesley. A suggestion of mine to appoint a Chief Sanitary Officer could not be met out under existing conditions. An attempt to educate the dairymen in the provisions of the said Ordinance was made by distributing copies of the same in Tamil throughout the Province.

Prai Wharves Contract.—Messrs. TOPHAM, JONES AND RAILTON commenced work under a contract with the Federated Malay States Railways to erect wharfage accommodation at Prai for the largest ocean-going vessels that may visit the port; this includes deepening the bed of the river Prai, and the reclamation of much swampy ground.

To accommodate their coolies adequate temporary lines have been erected at Prai and also at their quarries at Penanti, and at both places dressing stations with dressers in charge are provided. It has been arranged to receive their really sick coolies in Butterworth and Bukit Mertajam Government Hospitals where ample room exists.

Hospitals and Dispensaries.—I notice that 3,081 in-patients have been treated against 2,885 in 1917 in our three hospitals, whilst at our three outdoor dispensaries 7,546 applied for treatment against 7,423 in 1917. The increase in both instances is probably due to Influenza.

Revenue.—Collections made under Hospital Board account excluding in both years amounts paid by cheque directly to Chief Medical Officer, Penang, come to \$2,310.98 in year 1918 and to \$1,782.89 in 1917.

Staff.—I have been in charge of the Medical Department, Province Wellesley, throughout the year.

SUNGEI BAKAP HOSPITAL.

Buildings and Grounds.—General repairs, painting and white washing were done to hospital buildings during the year.

Staff.—Assistant Surgeon Mr. MITRA was in residential charge throughout the year. Senior Dresser A. KANDIAH died of Influenza on the 26th of October, 1918, and was replaced by Senior Dresser W. AMIRTHAM from Butterworth. Dresser AHMED JHURY and Apprentice Dresser MOHAMED SHERIFF continued throughout the year.

The health of the staff has been fairly good except during the epidemic of Influenza, when every one got the disease, some severely; all recovered with the exception of Dresser A. KANDIAH who, as mentioned above, succumbed to it on the 26th of October, 1918: his untimely death is to be greatly regretted, as he was an excellent dresser.

Work done.—There were 44 patients remaining in the beginning of the year; during the year 1918 patients were admitted, making a total of 962 cases treated, against 1,056 of the preceding year.

The average daily number of sick during the year was 41·60 as against 40·49 of the preceding year. The percentage of deaths to total treated was 13·81 as against 10·22 of the preceding year. There were 56 deaths within 48 hours of admission: the percentage of deaths comes down to 8·48 after excluding those who died within 48 hours of admission. The falling off in the number of patients admitted during the year is explained by the fact that there were fewer Small-pox contacts and also that bad cases only were admitted. Twenty-nine patients remained in hospital at the end of the year.

The principal diseases treated with deaths and percentage of mortality from each are as follows:—

Diseases.	Number of cases.	Number of deaths.	Percentage of mortality.
Ankylostomiasis	87	8	9·19
Beri-beri	10	1	10
Cholera	...	...	...
Diarrhœa & Enteritis	25	15	60
Dysentery	22	8	36·36
Enteric Fever	...	...	...
Gonorrhœa	9	...	...
Influenza	90	25	36·36
Leprosy	5	1	20
Malaria	216	29	13·42
Nephritis	4	1	25
New-growths (Malignant)	1	1	100
Pneumonia	8	4	50
Small-pox	6	1	16·66
Soft Chancre	17	...	...
Syphilis	41	4	9·75
Tuberculosis	16	8	50
Valvular Disease of Heart	10	6	60
Injuries	119	4	3·36

The blood in all fever cases was examined and since the middle of December, 1918, the blood of all patients, irrespective of their complaints, has been examined for malarial parasites: as before 90 per cent of the patients showed the ova of "hook-worm" in their stools.

Twenty-one necropsies were performed during the year on patients dying in hospital.

One hundred and twenty-nine operations, mostly minor, were performed during the year.

Medico-legal.—The Coroner sent in 34 dead bodies for post-mortem examination. The police sent in 162 cases for examination or treatment, including 15 for observation of insanity and 7 for Leprosy.

Accident cases not sent in by the police amounted to 47. Medical evidence was given in the courts on 29 occasions.

Vaccination, Primary.—There were 850 primary vaccinations performed during the year, of which 580 were perfect, 125 were modified, 123 failed and 22 not seen, the percentage of perfect vaccination was 68·23 and of failures 2·58.

Secondary.—Four hundred and eighty-six re-vaccinations were performed during the year: In one case a fine of \$5.50 was imposed by the Court for refusal of re-vaccination: some other cases were cautioned and discharged.

Police.—Fifty-seven police constables were admitted during the year. The health of the force, except during the Influenza epidemic has been fairly good throughout the year.

Rainfall.—The total rainfall during the year was 2,076·5 millimetres, the mean monthly rainfall was 173 millimetres, the greatest rainfall in any one day was 92 millimetres on October 10th, 1918, and the wettest month was also October with a fall of 428·5 millimetres, the driest month was February, 1918, with a fall of only 15·5 millimetres.

Public Health.—Cases of Small-pox continued to be reported till the end of July, 1918: there were altogether 38 cases of the disease with 13 deaths, most of them at Sungei Duri Kampong: wholesale re-vaccination was done twice in the village during the year, but many of the villagers had run away to avoid vaccination, and on their return, were forthwith attacked. The value of successful vaccination is still very imperfectly understood by the Malays and it will be many years before they learn to co-operate with the authorities with a view to stamping out this fell disease. The total fines inflicted by Courts for refusal of re-vaccination amounted to \$5.50 only: two cases were prosecuted for late reporting, they were cautioned and discharged.

Nineteen cases of Chicken-pox occurred throughout the year, most of them at Batu Kawan Estate. One case occurred at Val'dor Estate, which was not unlike modified Small-pox, and as a precautionary measure all the coolies in section 2 lines where the patient lived were re-vaccinated.

One case Puerperal Sepsis was reported from the Caledonia Hospital ending fatally.

There was recrudescence of Malaria during the months, June to September of the year under review.

Towards the latter half of October, 1918, the pandemic of Influenza made its appearance in the district and spread like wild fire from village to village: its ravages lasted for about a month when it disappeared as rapidly as it came: the mortality was high. By order of the Medical Officer a Malay dresser was sent from this hospital with drugs, disinfectants and necessary instructions to the more distant villages of the district. His visits were discontinued when the need for them disappeared.

BUKIT MERTAJAM HOSPITAL.

Buildings.—During the year nothing of importance was done except minor repairs with painting and whitewashing.

Work.—The following figures briefly summarise the work done:—

Patients remaining from 1917 ...	...	...	33
Admitted during the year ...	...	...	821
Total treated ...	...	...	854
Average daily number of sick ...	...	...	32·55
Discharged ...	...	...	655
Transferred ...	...	...	5
Absconded ...	...	...	43
Died ...	...	...	121
Remaining at the end of the year ...	...	...	30
Percentage of deaths to total treated ...	...	...	14·16
Died within 24 hours of admission ...	...	...	39

The number of paying patients was 82 as compared with 53 of the previous year. Number of estate coolies 196 as against 185 of last year.

The principal diseases treated were as follows:—

Diseases.			Number of cases.	Number of deaths.	Percentage of mortality.
Ankylostomiasis	...	...	63	31	48
Influenza	...	...	98	24	24
Diarrhœa	...	...	4	2	50
Dysentery	...	...	26	8	30
Enteritis	...	...	3	...	...
Gonorrhœa	...	...	13	...	...
Soft Chancre	...	...	13	...	...
Phthisis	...	...	16	9	56
Malaria	...	...	115	12	10
Nephritis	...	...	15	2	13
Pneumonia	...	...	24	9	37
Syphilis	...	...	52	1	1
Chicken-pox	...	...	3	...	...
Measles	...	...	1	...	...
Leprosy	...	...	4	...	...
Wounds	...	...	64	...	...

Stools of all admissions were examined microscopically; out of 821 stools, 131 contained the ova of hook-worm.

Four post-mortems were performed during the year.

The Coroner sent in 10 cases for post-mortem examination.

Infectious diseases.—During the year there were only 4 cases of Small-pox, which were all sent to Butterworth Camp, and 5 cases of Chicken-pox. In a case of Small-pox a fine of \$30 was imposed for concealment.

Vaccinations.—Eight hundred and thirty-five children were vaccinated during the year and 232 re-vaccinations were performed.

Medico-legal.—The Coroner sent in 10 bodies for post-mortem examination. The police sent in 63 cases for examination and treatment. The Magistrate sent in 21 cases for observation.

Mr. H. MEHTA took residential charge of the hospital from Mr. LEICESTER from 7th April, 1918. There were no changes amongst the dressers.

BUTTERWORTH HOSPITAL.

Grounds and Buildings.—The ground has been in good order throughout the year. A few repairs were done by the Public Works Department. A latrine has had the upper part of its walls perforated to secure better light and ventilation. A sink has been made in the dressing room.

Staff.—Assistant Surgeon Mr. MOHAMED BABOO replaced Mr. MUTHUKUMARU on 15th June, 1918. Dresser AMIRTHAM replaced VISVANATHEN who went to Lumut on 5th February, 1918. Dresser VISVANATHEN, later on, replaced Dresser AMIRTHAM, who was transferred to Sungei Bakap Hospital on 5th November, 1918.

Work done.—Thirty-seven patients remained from the previous year which, with 1,228 admissions, makes a total of 1,265 treated for the year, as against 962 for the previous year. The average daily number of sick was 52·81 as against 41·33 for 1917. Number of deaths 110 to total treated. Percentage of deaths 8·69 including 21 deaths which occurred within 48 hours of admission; excluding deaths within 48 hours the percentage is 7·15. Fifty-two patients remained at the end of 1918. Influenza alone accounted for 18 deaths—of which 6 died within 48 hours of admission.

The principal diseases treated were as follows:—

Diseases.	Number of cases.	Number of deaths.	Percentage of mortality.
Ankylostomiasis	44	7	15
Beri-beri	3	1	33
Chicken-pox	9	...	...
Diarrhoea	6	1	16
Dysentery	37	18	48
Gonorrhoea	9	...	...
Malaria	161	6	3
Influenza	130	18	13
Injuries	92	2	2
Nephritis	16	6	37
Phthisis	23	14	60
Pneumonia	26	9	34
Small-pox	55	7	12
Chancroid	5	...	...
Syphilis	67	4	5
Anæmia	1	...	...
Heart disease	4	2	50
Yaws	1	...	...

One hundred and seventeen specimens of stools were examined during the year. Fifty-five cases of hook-worm ova, 3 cases of round-worm ova, 5 of *Trichocephalus dispar* ova, one of amœba, 2 of thread worm ova, could be demonstrated. Fifty-one specimens were negative. *Olium Chenopodium* treatment has been adopted in almost all the cases and the results were very satisfactory.

Out of 116 blood films examined for Malaria, 26 Benign Tertian and 12 Malignant Tertian parasites could be demonstrated.

One hundred and forty-four operations were done during the year of which 139 were cured, 4 recovered and 1 died.

Nineteen necropsies were performed including 15 dead bodies sent in by Police.

Ninety-six cases of Venereal Diseases were treated during the year as against 126 cases in 1917.

Medico-legal.—Number of dead bodies sent by Police was 15. Number of police cases treated as in-patients was 53 and as out-patients 110.

Sixteen mental cases were sent in by Police for observation.

Number of police recruits examined during the year was 38, of which 8 were rejected.

Small-pox outbreak was continuous throughout the year in the Northern District. It was at its worst during February and March, disappeared altogether during June and July and went up again in August and September. After that only a few cases have occurred in Northern District. Total cases of Small-pox were 70 and deaths 11. Total cases of Chicken-pox 9 and no deaths.

During the beginning of the 4th quarter of the year we had a very bad epidemic of Influenza. It was at its worst during October. It began to subside during the latter part of November. One hundred and thirty cases were treated as in-patients and 127 cases as out-patients. There were 18 deaths due to Influenza including 6 deaths which occurred within 48 hours of admission.

There were 13 Small-pox prosecutions for failure to report the cases, out of which 12 were convicted, and fines ranging from \$100 to \$5 inflicted. Eleven persons were prosecuted for refusing to be re-vaccinated, out of which 8 were fined \$10 each.

SURGICAL OPERATIONS PERFORMED IN PROVINCE WELLESLEY DURING 1918.

Names of Operations.				Total.	Cured.	Relieved.	Died.
<i>On Tumours:—</i>							
Removal of Tumour in axilla	...	...	...	1	1	...	...
Enucleation of Cyst	...	...	...	2	2	...	...
<i>On Abscess and Cellulitis:—</i>							
Incision for Abscess	...	...	...	42	42	...	...
Multiple incision & drainage for Abscess	...	...	...	1	...	...	1
Incision for Cellulitis	...	...	...	11	11	...	...
<i>For Arrest of Hæmorrhage:—</i>							
Cabterisation	...	...	...	1	1	...	...
<i>On Lymphatics:—</i>							
Enucleation of glands	...	...	...	12	12	...	...
Incision for supp: buboes	...	...	...	12	12	...	...
<i>On Skin and subcutaneous tissue:—</i>							
Suturing of Wounds	...	...	...	121	121	..	...
Scraping of Ulcers	...	...	...	46	46	...	...
Incision and scraping for sinus	...	...	...	2	2	...	...
Skin grafting	...	...	...	1	1	...	...
Intravenous injection of Galyl	...	...	...	14	14	...	...
Intravenous injection of Saline	...	...	...	1	1	...	...
Removal of toe nail	...	...	...	3	3	...	...
Removal of foreign body, leg	...	...	...	2	2	...	...
<i>On Bone:—</i>							
Sequestratomy	...	...	...	1	1	...	...
<i>On Injuries:—</i>							
Setting fracture, Femur	...	...	...	1	...	...	1
Setting fracture, Tibia and Fibula	...	...	...	1	1	...	...
Setting fracture, Tibia, simple	...	...	...	1	1	...	...
Compound fracture, Tibia and Fibula	...	...	...	1	...	...	1
<i>On Joints:—</i>							
Exploring of Knee	...	...	...	1	1	...	...
<i>Amputations:—</i>							
Amputation of toes	...	...	...	2	2	...	...
Amputation of finger	...	...	...	1	1	...	...
Amputation of thigh	...	...	...	1	1	...	...
Amputation of leg	...	...	...	1	1	...	...
<i>On the Spinal Cord:—</i>							
Lumbar puncture	...	...	...	1	1	...	...
<i>On the Eye:—</i>							
Iridectomy	...	...	...	1	1	...	...
Needling of Siule Cataract	...	...	...	1	...	1	...
Cataract Operation	...	...	...	2	...	2	...
Enucleation of Eyeball	...	...	...	1	1	...	...
<i>Dental Operation:—</i>							
Extraction of teeth	...	...	...	4	4	...	...
Carried forward	...	...	...	293	287	3	3

SURGICAL OPERATIONS PERFORMED IN PROVINCE WELLESLEY DURING 1918.—*Contd.*

Names of Operations.				Total.	Cured.	Relieved.	Died.
<i>Brought forward</i> ...				293	287	3	3
<i>On the Nose:—</i>							
Removal of foreign body in nose ...				2	2	...	...
<i>On the Ear:—</i>							
Mastoid operation ...				1	...	1	...
<i>On the Thorax:—</i>							
Paracentesis of Pleura ...				4	4	...	...
<i>On the Abdomen:—</i>							
Paracentesis abdominis ...				20	20	...	...
Herniatomy ...				3	3	...	...
Laparotomy ...				3	2	...	1
<i>On the Urethra:—</i>							
Catheterisation ...				4	4	...	...
<i>On Anus:—</i>							
Ligature and excision of Piles ...				2	2	...	...
Formation of imperforated anus ...				1	...	...	1
<i>On the Urethra:—</i>							
Dilatation of male urethra ...				1	1	...	...
<i>On Male generative organs:—</i>							
Circumcision ...				22	22	...	...
Removal of Scrotum ...				1	1	...	...
Removal of Testis ...				3	3	...	...
Hydrocele Paracentesis ...				3	3	...	...
Radical cure of Hydrocele ...				2	2	...	...
<i>Obstetric:—</i>							
Application of forceps ...				4	4	...	...
Transverse presentation with prolapsed hand ...				1	1	...	...
Separation of placenta ...				1	1	...	...
Extraction of retained placenta ...				1	1	...	...
TOTAL ...				372	363	4	5

APPENDIX D.

MALACCA HOSPITALS.

REPORT BY DR. J. W. ADAMS, M.R.C.S. (ENGLAND), L.R.C.R. (LONDON),
B.A., M.B., B.C. (CANTAB.).

The population is made up as follows:—

Europeans	...	...	...	365
Eurasians	...	...	...	1,849
Chinese	...	...	...	42,599
Malays	...	...	...	94,709
Indians	...	...	...	12,500
Others	...	...	...	515

Total ... 152,537

Births.—There were 5,300 births in 1918 as against 5,862 in 1917 and 4,640 in 1916.

The following table shows the nationalities:—

			<i>Males.</i>	<i>Females.</i>	<i>Total.</i>
			—	—	—
Europeans	...	...	7	2	9
Eurasians	...	...	34	30	64
Chinese	...	...	636	612	1,248
Malays	...	...	1,805	1,754	3,559
Indians	...	...	137	131	268
Others	...	...	91	61	152
Total	...		2,710	2,590	5,300

The birth-rate per mille was 34·74.

Deaths.—Seven thousand six hundred and thirty-three deaths were registered as contrasted with 7,111 in 1917 and 5,288 in 1916.

			<i>Males.</i>	<i>Females.</i>	<i>Total.</i>
			—	—	—
Europeans	...	...	2	3	5
Eurasians	...	...	34	34	68
Chinese	...	...	2,305	429	2,734
Malays	...	...	1,632	1,595	3,227
Indians	...	...	1,094	381	1,475
Others	...	...	95	29	124
Total	...		5,162	2,471	7,633

Comparing the death-rate for 1918 with those of 1917, etc.:—

Death-rate 1918	...	...	...	...	50·04
„ 1917	...	...	...	...	48·97
„ 1916	...	...	...	...	37·38
„ 1915	...	...	...	...	36·14
„ 1914	...	...	...	...	38·56

Of these deaths, 1,211 occurred in hospitals, 85 were certified by Registered Medical Practitioners, 1,284 were certified after death and 5,053 were not certified.

Vaccinations.—As in previous years vaccinations were pushed vigorously in Malacca with the satisfactory results that we were able to keep Small-pox out of Malacca, all but 6 cases.

January	...	...	...	...	1,301
February	...	...	...	...	1,704
March	...	...	...	...	1,572
April	...	...	...	...	1,287
May	...	...	...	...	1,281
June	...	...	...	...	1,102
July	...	...	...	...	836
August	...	...	...	...	1,082
September	...	...	...	...	332
October	...	...	...	...	60
November	...	...	...	...	482
December	...	...	...	...	1,083

I append a table shewing nationalities thus vaccinated. (A.)

Municipality.—The estimated population for the Municipality for 1918 is 25,394.75. There were 814 births and 1,561 deaths within Municipal Limits. Malaria as in previous years easily accounted for most deaths, viz., 402. Most of these cases contracted their disease outside Municipal Limits in rubber and other estates and returned to their houses or to the hospital for treatment or to die. Convulsions accounted for the second largest number of deaths, viz., 182. The deaths were made up as follows:—

Malarial Fever	...	402	as against	279	in 1917.
Convulsion	...	182	"	154	"
Fever	...	150	"	136	"
Phthisis	...	102	"	115	"
Old Age	...	74	"	78	"
Tetanus	...	32	"	43	"
Marasmus	...	44	"	41	"
Beri-beri	...	53	"	80	"
Pneumonia	...	225	"	29	"
Bronchitis	...	44	"	41	"
Dysentery	...	34	"	24	"
Enteritis	...	3	"	19	"
Premature birth	...	12	"	8	"
Still-born	...	32	"	26	"
Nephritis	...	15	"	18	"
Diarrhœa	...	16	"	9	"
Ankylostomiasis	...	83	"	13	"
Debility	...	1	"	4	"
Child birth	...	7	"	10	"
Other causes	...	50	"	77	"
Total	...	1,561		1,204	

The death-rate per mille was thus 61.47 as against 48.55 in 1917.

DURIAN DAUN HOSPITAL.

Ground and buildings.—Both have been in good order during the year. Some of the main wards have been repaired with changing of the ceiling and roof. The main kitchen of the Dressers' Quarters was tile-roofed, replacing the attap roof. The old attendants' quarters were pulled down and the new ones have been built on the site purchased behind the hospital compound. Besides these, there have been several minor repairs to the wards and out-houses.

Staff.—Assistant Surgeon A. C. DUTTA remained unchanged throughout the year. Assistant Surgeon K. VEERASINGAM was transferred to Jasin in the month of September and Mr. E. KANDIAH from Singapore succeeded him. The Senior Dresser, F. NONIS, retired in November. Hospital Assistant F. LAZAROO was removed to Prison Hospital in November to occupy the place of the late Mr. PETER DIAZ. The dispensary was in charge of Dresser MOHAMED NOOR. Two apprentice dressers were promoted to fill up the vacancies of the two above-named dressers. Miss E. M. GIFFKINS, the matron-in-charge, went on leave and her place was taken by Miss J. SINCLAIR from Penang in the month of September. Nurse Miss D. DYMOND remained unchanged, so also Mrs. V. A. TOWERS. Miss E. GIBBS left the service and Mrs. H. HAYMAN from Singapore occupied her place in January.

General Wards.

Work done:—

Remained on 31st December, 1917	...	...	97
Admitted during 1918	...	...	2,059
Discharged	...	...	1,687
Transferred	...	...	45
Absconded	...	...	32
Died	...	...	332
Remaining on 31st December, 1918	...	...	60
The average daily number of sick was	...	...	105.58
Number of deaths within 48 hours of admission was	...	...	101
Percentage of deaths to total treated was	...	...	15.39
Percentage of deaths (excluding those dying within 48 hours of admission)	...	...	11.24

The number of admissions among Europeans during the year were 118 males and 28 females as compared with 98 males and 24 females in 1917. There was one death from Cerebral Malaria.

The Quarantine Camp was occupied for a few days by an imported case of Chicken-pox during the year.

The principal diseases treated were as follows:—

Ankylostomiasis	...	Total cases	171	with	61	deaths
Beri-beri	...	...	56	...	12	...
Blackwater Fever	...	...	4	...	1	death
Influenza	...	...	382	...	112	deaths
Diarrhœa	...	...	15	...	2	...
Dysentery	...	...	56	...	25	...
Gonorrhœa	...	...	10	...	no	...
Leprosy	...	...	15	...	3	...
Malaria	...	...	429	...	62	...
Nephritis	...	...	3	...	no	...
New growth, malignant	...	...	3	...	no	...
Lobar Pneumonia	...	...	39	...	21	...
Soft Chancre	...	...	6	...	no	...
Syphilis	...	...	19	...	1	death
Tuberculosis	...	...	19	...	6	...
Ulcers	...	...	71	...	no	...
Wounds	...	...	212	...	5	...

Pauper Wards.

Work done:—

Remained on 31st December, 1917	...	...	139
Admitted during 1918	...	...	2,722
Discharged	...	...	2,043
Transferred	...	...	no
Absconded	...	...	32
Died	...	...	659
Remaining on 31st December, 1918	...	...	127
The average daily number of sick was	...	...	216.48
The percentage of deaths to total treated was	...	...	23.03
Number of deaths within 48 hours of admission was	...	...	168
The percentage of deaths to total treated excluding those dying within 48 hours of admission	...	...	18.23

The principal diseases treated were as follows:—

Ankylostomiasis	...	Total cases	256	with	88	deaths
Beri-beri	...	"	391	"	68	"
Broncho-pneumonia	...	"	193	"	113	"
Cirrhosis of Liver	...	"	27	"	13	"
Diarrhoea	...	"	19	"	1	death
Dysentery	...	"	150	"	94	deaths
Gonorrhœa	...	"	22	"	no	"
Influenza	...	"	114	"	no	"
Leprosy	...	"	4	"	no	"
Malaria	...	"	741	"	123	"
Nephritis	...	"	10	"	6	"
New growth, malignant	...	"	6	"	1	death
Lobar Pneumonia	...	"	34	"	25	deaths
Soft Chancre	...	"	14	"	no	"
Syphilis	...	"	86	"	7	"
Tuberculosis	...	"	96	"	71	"
Ulcers	...	"	223	"	no	"
Wounds	...	"	33	"	2	"
Yaws	...	"	1	"	no	death

Operations.

There were 439 surgical operations performed during the year with 5 deaths. Dr. E. N. GRAHAM and Dr. J. W. ADAMS were Surgeons-in-charge during the year. The following are the list of surgical operations performed:—

Operations.	Number of cases.	Number of deaths.
<i>On Tumours:—</i>		
Excision of new growth, non-malignant	3	...
<i>For Abscess:—</i>		
Incision and drainage for abscess	52	...
<i>Cellulitis:—</i>		
Incision for Cellulitis	7	...
<i>Foreign Body:—</i>		
Removal of foreign bodies	3	...
<i>On Lymphatic:—</i>		
Excision of enlarged glands	2	...
Incision for suppurative bubo	8	...
<i>On Nerve:—</i>		
Neurorrhaphy	1	...
<i>On Skin:—</i>		
Injection of Novarsenobenzol	19	...
Skin grafting (Theirsch's)	1	...
Suturing of wounds	217	...
Curettage of Ulcers	15	...
Incision for Carbuncle	1	...
<i>On joint:—</i>		
Aspiration of joint	2	...
<i>On Tendon:—</i>		
Union of tendons	4	...
<i>Carried forward</i>	335	...

Operations.				Number of cases.	Number of deaths.
<i>Brought forward</i> ...				335	...
<i>Amputation:—</i>					
Amputation of toes and fingers ...				9	...
" forearm ...				1	...
" arm ...				1	...
<i>On Skull:—</i>					
Elevation of depressed bone ...				3	...
<i>On Spinal Cord:—</i>					
Lumbar puncture ...				3	...
<i>On Face:—</i>					
Plastic operation for harelip ...				2	...
<i>On Eyeball:—</i>					
Extraction of cataract ...				3	...
<i>On Mouth:—</i>					
Tonsillectomy ...				2	...
<i>Dental Operation:—</i>					
Extraction of carious teeth ...				4	...
<i>Ear and accessory cavity:—</i>					
Operation for Mastoid Abscess ...				2	...
<i>On Oesophagus:—</i>					
Oesophagotomy for removal of foreign body ...				1	...
<i>On Thorax:—</i>					
Paracentesis pleura ...				6	...
Resection of ribs and drainage for Empyema ...				3	...
<i>On Bone</i> ...				4	...
<i>On Abdomen:—</i>					
Paracentesis Abdominis ...				15	...
Laparotomy ...				3	1
Excision of Appendix in Acute Appendicitis ...				2	1
Herniotomy for Strangulated Hernia ...				3	2
Radical cure for Inguinal Hernia ...				4	...
Operations for hepatic abscess ...				2	1
Splenectomy ...				1	...
<i>On Rectum and Anus:—</i>					
Operation for imperforate anus ...				1	...
" anal fistula ...				2	...
Ligature and excision of Hæmorrhoids ...				1	...
<i>On Urethra:—</i>					
Dilatation of Stricture ...				2	...
Removal of Calculus from Urethra ...				1	...
<i>On Male generative organs:—</i>					
Circumcision ...				8	...
Radical cure for Hydrocele ...				4	...
Operation for Suppurative Orchitis ...				2	...
<i>On Female generative organs:—</i>					
Dilatation of Cervix and curetting of Uterus ...				1	...
<i>On Obstetrics:—</i>					
Internal podalic version followed by the Extraction of fœtus and pugging of uterovaginal canal for Placenta Prævia ...				1	...
Disengagement of locked twins ...				1	...
Craniotomy ...				2	...
Application of forceps ...				3	...
Induction of abortion for maternal causes ...				1	...
Total ...				439	5

Subject of surgical interest.—This was a case of Oesophagotomy not usually met with. The patient was an adult male Chinese admitted into the hospital suffering from Dysphagia and with a sense of obstruction in the gullet during deglutition. There was a history of accidental swallowing of a plate of false teeth two weeks ago. This plate slipped off, from the front part of his upper jaw while the patient was asleep. On admission there could be found no swelling or cellulitis of the neck although he tried his best at the outside to push it in and delayed in seeking hospital treatment. The object was firmly fixed in the gullet just above the presternal notch and it could neither be removed nor dislodged by the repeated use of coin catcher and bougie. Operation was decided upon and it was performed by Dr. ADAMS under general anæsthesia. Considerable difficulty was experienced by the Surgeon in extraction of the plate and it took about 20 minutes' manipulation before he succeeded in getting it out. The wound was partly sutured and drained owing to the unavoidable laceration of the gullet. The plate measured $2\frac{1}{2}$ " in length and 1" in breadth at its widest part with two front teeth fastened into it. The patient made an uninterrupted recovery, of course, slowly.

Forty-seven necropsies were held on bodies of patients dying in the hospital.

Medico-legal.—The Coroner sent in 97 bodies for post-mortem examination. The Police brought in 191 cases for examination and treatment. Seventy-six persons were brought in by the Police for observation for insanity and 19 for examination for leprosy.

Health of Police.—Three hundred and thirty-five police patients were admitted into the hospital during the year with two deaths. The majority of the admissions accounted for Malaria.

With reference to the Influenza epidemic in October and November I think it is worth recording the fact that I saw no European really dangerously ill with Influenza and that there were no deaths among Europeans from this disease.

JASIN HOSPITAL.

At the end of 1917 there were 41 cases under treatment. There were 1,318 admissions during the year. Estate cases amounted to 630 other paying cases 20. The remaining 668 cases were paupers. There were 220 deaths during the year (28 were females). Seventy deaths occurred within 48 hours of admission.

Percentage of deaths to total treated was 16·19.

Percentage (excluding deaths within 48 hours) was 11·03.

The chief diseases treated were:—

Malaria malignant	...	341	with 43 deaths (12 within 48 hours)
Dysentery	...	103	" 36 " (8 ")
Influenza-pneumonia	...	215	" 70 " (31 ")
Lobar Pneumonia	...	10	" 4 " (2 ")
Ankylostomiasis	...	161	" 34 " (5 ")
Diarrhoea	...	23	" 9 " (1 ")
Malaria B. T.	...	12	" no "
" chronic	...	8	" 2 "
Beri-beri	...	55	" 3 "
Influenza	...	35	" no "
Nephritis	...	6	" 4 "
Phthisis	...	10	" 6 "
Bronchitis	...	32	" 1 "
Abscess	...	9	" no "
Injuries	...	46	" no "
Ulcers	...	84	" 1 "

The above figures when compared with those treated during the previous year show an increase of Malignant Malaria by 182 cases, Dysentery by 30, Beri-beri slightly, and Ankylostomiasis by 68. There is marked decrease in Benign and Chronic Malaria. Injuries show a decrease by 17 cases. Phthisis also is on the decline (12 to 10). There were 43 deaths due to Malignant Malaria against 10 deaths during the previous year. Deaths due to Dysentery amounted to 36 during the year against 16 deaths during the previous year. There is an increase in deaths due to Ankylostomiasis of 27. Though the admissions in Beri-beri were slightly higher, there were fewer deaths. There were 23 Diarrhœa cases with 9 deaths. It is noticeable that Malignant Malaria, Dysentery, and Ankylostomiasis are on the increase and that deaths within a short period in hospital are more frequent. Nephritis shows a very low number of admissions during the year when compared with the previous year. There is also an increase in the number of Bronchitis cases. This is possibly due to its being secondary to Influenza. The scourge of Influenza with frequent developments of Pneumonia, often bronchial, throughout the district during October and November caused a great increase in the admissions and in the number of deaths. There were 215 Influenzal Pneumonias alone, in addition to the 35 pure Influenza cases. There were 70 deaths out of which 37 died within 48 hours.

During the year there were 630 estate admissions thereby showing an increase of 160 cases when compared with the previous year's admissions. There were 103 deaths, 45 deaths occurred within 48 hours.

Ninety-two minor operations were performed.

There were 6 sporadic cases of Small-pox during the year. There were no outbreaks of Plague, Cholera, or Chicken-pox. The six Small-pox cases were treated at the Jasin Quarantine Camp and all recovered.

Fifty-one post-mortem examinations were performed during the year, 35 of these were police cases. Out of the total number of Police cases 17 were found to have died of natural causes and 18 otherwise. During the early part of December a remarkable poisoning in which four persons of one family succumbed, occurred by eating the ova of that kind of fish well known in these parts as "ikan buntal". Acute vomiting with prostration were the only symptoms noticed by the relations of the deceased. Post-mortem examination was done on one of the bodies. Owing to advanced decomposition of the body a thorough examination could not be made. The stomach contained a few particles resembling the ordinary fish ova. The mucous membrane was congested. The heart was contracted and empty. Specimens were forwarded to the Government Analyst but no definite report could be given owing to decomposition. The above ought to be interesting in view of the fact that a few years previously a similar poisoning occurred in Malacca Town with a heavier death roll. This particular fish seems to be well known to the natives of this place and it is never used as food. In the case that occurred lately, it is said that the ova alone were purchased from one of the fishermen at Sungei Rambei, thereby hiding its true identity.

Vaccination.—Two thousand three hundred and eighty-six vaccinations and re-vaccinations were done during the year, of which 316 were children under one year of age. Out of the total of 316 children vaccinated, 305 were perfect. The majority of the re-vaccination cases (2,070) were not available for inspection.

Hospital Buildings.—There were no noteworthy changes brought about in the buildings. A few minor repairs were done. The buildings are getting more and more shaky without thorough repairs. The present Principal Civil Medical Officer during his visit to this hospital during the latter part of the year remarked in the Visitors' book "Wards and buildings very old and dilapidated, some of them look as if they won't stand very long".

Hospital Staff.—I was sent down from Durian Daun Hospital on the 3rd September, 1918, to take the place of Mr. AIYATHURAI, who then proceeded to Trengganu to take up an appointment there. Mr. MOHAMED DOM, the first grade senior dresser, who was transferred here during the latter part of the previous year has continued to work right throughout the year.

Mr. ABDUL GHANI who took the place of Mr. SIMON NONIS, who was transferred back to Durian Daun Hospital on 21st January, 1918, has been also continuing to work right through the year. The health of the staff was only fair. One of the hospital attendants died of Ankylostomiasis. There were occasional attacks of Malaria among the staff as a whole. There was no escape, except perhaps myself, during my short stay of 3 months only. There was a miraculous escape of the whole staff from contracting Influenza during the epidemic. The work of the dressers, MOHAMED DOM and ABDUL GHANI, was quite satisfactory.

PRISON HOSPITAL.

Dr. J. HARRISON was in charge up to 18th January, 1918, when he was transferred to Singapore and was succeeded by Dr. J. W. ADAMS.

Dresser PETER DIAS was in charge up to 23rd October, 1918, when he died and was succeeded by Mr. F. LAZAROO. On the 1st January, there were 5 cases under treatment. There were 52 admissions for the whole year with no death.

The chief diseases treated were:—Dysentery 3, Beri-beri 1, Malaria Malignant 10, Secondary Syphilis 3, Gonorrhœa 1, Pyrexia 3, Ulcer-Cornea 1, Inflammation ear 1, Diarrhœa 5, Bubo 1, Nephritis 1, Chancre 2, Herpes Zoster 1, Ulcer 8, Abscess 5, Scabies 6.

Medical Department.

Dr. HARRISON was in charge up to 18th January, 1918, when he was succeeded by Dr. ADAMS who remained in charge from then throughout. Dr. MARTIN continued to act as Health Officer throughout the year. There was no change in the clerical branch throughout the year.

MEDICAL MISSION, MALACCA.

Statistics for 1918:—

In-patients	...	...	...	...	170
Total attendances	...	...	...	...	3,189
Malay attendances	...	...	...	...	517
New out-patients	...	...	...	...	1,249
Attendances for Ophthalmic Diseases	...	...	...	...	48
Attendances for Gynæcological Diseases	...	...	...	...	470
Attendances for Malaria	...	...	...	...	123
Operations under Chloroform	...	...	...	...	6
Vaccinations	...	...	...	...	17
Maternity cases	...	...	...	...	83
Surgical dressings	...	...	...	...	1,532
Spanish Influenza	...	...	...	...	185
Deaths (in-patients 9, out-patients 5)	...	...	...	...	14
Still-born infants	...	...	...	...	9

Owing to Dr. WARREN'S sudden departure without being able to get a substitute the work has been considerably hindered. In June, Dr. RATTRAY offered to visit the hospital and from that time onward the number of in-patients have steadily increased. Of the 83 midwifery cases, 19 were abnormal.

Only one pupil midwife was sent up to Singapore for the examination. One pupil took the full training but through illness had to leave without taking the examination. Two others have just completed their course and will be sent to Singapore for the examination shortly. Three other pupils are in training.

ANNUAL REPORT OF THE HEALTH DEPARTMENT FOR 1918.

The weekly mortality chart for Malacca as in previous years showed a marked rise for the months of May, June and July. This appears to be due to Malaria in the main. The period of greatest rainfall in Malacca is November, December and January, so that the increase in Malaria begins three months later. It has been said that the usual period intervening between the maximum rainfall and maximum incidence of Malaria is only one month. It seems therefore that another two months are required before the effect of the increase is shewn in the mortality figures. Malaria, Fever not specified, and Convulsions are returned as the causes of fully seventy-five per cent of all the deaths in Malacca. Extensive anti-malarial measures are indicated if the high mortality is to be reduced. Malaria carrying *Anopheles* can be found in the vicinity of most villages and kampongs during March, April and May. The chart for 1918 was unusual in shewing a very high rise during October due to the Influenza epidemic.

Milk.—Ninety-two samples of milk were analysed of which 27 samples were found to be adulterated with water. In 11 cases of these the percentage of water added worked out at under 5 per cent. So no further action was taken. In the remaining 16 cases prosecution was undertaken and fines amounting to \$516 were inflicted. The percentage of water added varied from 6 per cent to 53 per cent.

Water.—Forty-seven samples were analysed chemically. Monthly analysis was made of the Municipal pipe water-supply, quarterly analysis was made of the water from each of the three Bukit China wells which is sold in the town, also of the reservoir water at Ayer Keroh. These samples showed in every case a water fit for all domestic uses. The remaining samples were from various wells in villages, kampongs and estates. Nine samples were found to show a water unfit for drinking. The three Bukit China wells were cleaned and disinfected during the year.

Estates.—One hundred and sixty-three visits were paid to estates. Ninety-five separate estates were visited. All the European-owned estates and many of the larger Chinese ones were visited. In nearly all cases action was taken under the Estates Labourers' (Protection of Health) Ordinance, 1911, in regard to the sanitation of the lines. Action in Court was taken only twice in the year, in each case the work required was carried out within the time allowed by the Court. Recommendations made were usually carried out without going to Court. All Estate Hospitals and estate sick lines were visited during the year, the larger ones several times. A mosquito survey was made on eight estates in order to make recommendations tending to decrease Malaria. In four cases the recommendations were adopted. It is too early to report as to the results obtained. The sanitary conditions on many of the Chinese-owned estates was found to be bad. The coolies often living in a broken-down shed with pools of water forming on the floor. No latrine and a well consisting of a hole in the ground. The latter often being close to a vegetable garden which the coolies are fond of manuring with night-soil. There are a great number of these small estates in Malacca and difficulty was found in identifying and locating them. The coolies often do not speak Malay and sometimes do not know for whom they are working. The Chinese Dresser allowed in the Estimates for 1919 will be useful in connection with inspecting this kind of estate. Only 10 estates that have sick lines send in returns and these are monthly reports relating to their sick lines only. It would be a great advantage to this department if every estate of say 50 acres had to send in a monthly return shewing the number of coolies employed, number sick during the month and of what illness, number of deaths, number absconded, and number discharged and for what reason.

Police Stations.—All the police stations outside Municipal limits, 26 in number, were inspected and attention was drawn in a report to any sanitary defects.

Pulau Besar.—The island was twice visited and the coolies and lines inspected.

Infectious diseases.—Six cases of Small-pox were reported during the year, action was taken in each case to limit the spread of the disease. There were no cases of Cholera, Plague, or Cerebro-spinal meningitis. Investigation was made into three suspected deaths from Plague, one in Malacca, one just over the border in Muar and one at Tampin on a body taken from the train, each case turned out not to be Plague. Investigation was also made into an outbreak of suspected Cholera at Bukit Kajang Estate which proved to be Influenzal Enteritis. Two of the cases of Small-pox occurred at Alor Gajah during an epidemic of Chicken-pox. A house-to-house inspection of the kampongs affected was made to search for Small-pox cases and to give the necessary instructions. Two of the cases occurred on Merlimau Estate amongst coolies recently discharged from the Quarantine Station at Port Swettenham. Two cases of Plague occurred at Muar and quarantine measures were taken against the town. Passengers in all motor cars and in all boats from Muar were inspected for one month.

Schools.—The splenic index of the various schools examined is shewn in the following table. This affords a measure of the prevalence of Malaria in the different districts, considered with the list previously submitted.

Table of splenic indices:—

SCHOOLS.	Number of boys.	Number of boys with big spleen.	Percentage.
Klebang Besar	59	4	6 %
Bukit Rambei	46	2	4 %
Limbongan	64	3	4 %
Pringgiti	43	5	11 %
Bukit Singgeh	30	17	56 %
Bertam Ulu	47	4	8 %
Kandang	53	7	13 %
Ayer Molek	57	4	7 %
Padang Temu	25	1	4 %
Ujong Pasir	52	5	9 %
Bukit Lintang	63	5	8 %
Pernu	63	6	9 %
Umbei	60	8	13 %
Ganun	58	5	8 %
Durian Tunggal	60	11	18 %
Sebatu	65	5	7 %
Sempang	61	4	6 %
Serkam	68	7	10 %
Tedong	61	6	9 %
Merlimau	71	9	12 %
Sungei Baru	55	7	13 %
Paya Rumput	63	7	11 %
Bachang	89	6	5 %
Tranquerah	47	...	...
Cheng	69	4	6 %
TOTAL	1,429	142	...

Splenic index total percentage ... 10.07%

Ankylostomiasis. Campaign.—This was carried on throughout the year and consisted of house-to-house visits by the Sanitary Inspector through the various kampongs, instructing the villagers how to make latrines with a subsequent visit or visits to see how the instructions had been carried out. Seventy-one different kampongs were visited in which 25,520 houses were seen, 8,992 latrines were made. One latrine usually serves two houses. This is done merely by peaceful persuasion only and in no case was compulsion adopted.

Influenza Epidemic.—At the end of September Epidemic Influenza made itself evident. The disease appeared to enter from Negri Sembilan and spread rapidly throughout Malacca. The influence of the epidemic on the mortality rate is shewn in the following table.

Weekly Mortality:—

Week ending	September 21st	36.63 per mille.
"	October 5th	45.35 "
"	October 12th	90.70 "
"	October 19th	170.59 "
"	October 26th	180.71 "
"	November 2nd	140.02 "
"	November 9th	90.00 "
"	November 16th	57.56 "
"	November 23rd	49.53 "
"	November 30th	40.81 "
"	December 7th	34.53 "

The deaths resulting from Influenza were mostly due to Pneumonia. The Tamil coolie population suffered severely and also the Malays. The Tamil coolie suffering from Fever and feeling hot was frequently found to take a cold bath in the open, unless prevented, in order to cool himself with the result that Pneumonia supervened. Many estates suffered severely, one or two had no cases, for instance Kemuning, in spite of its situation close to the Negri Sembilan frontier. Pegoh Estate had 34 deaths out of a labour force of between 600 and 700.

All vernacular schools were closed for a month. Advice and free medicine was distributed as far as possible through the kampongs. The worst instance of an institution affected was the Malay College where at one time 60 out of 80 were down with the disease, there were no deaths. In the town, schools, cinemas and theatres were closed. Drains were disinfected, roads watered, houses disinfected as far as possible. Free medicine was supplied by the Government Dispensary and pamphlets were issued giving instructions for combatting the disease.

The staff not including the Municipality of Malacca consisted of one Health Officer, one Sanitary Inspector and one peon.

Provision was made in the 1919 Estimates to add two more Sanitary Inspectors, one Clerk, and one Chinese-speaking dresser.

The Health Officer was called upon to do the Chief Medical Officer's work on seven days during the year.

Estate Hospitals.

Appended are returns from the principal rubber estates.

NUMBER OF CHILDREN AND OTHERS VACCINATED IN TOWN AND DISTRICT IN 1918.

Nationality.	TOWN		Nationality.	COUNTRY.		Grand Total.
	No. Vaccinated.	Total.		No. Vaccinated.	Total.	
European ...	...	5,218	European ...	...	6,904	12,122
Eurasian ...	12		Eurasian ...	5		
Chinese ...	4,365		Chinese ...	1,823		
Malay ...	792		Malay ...	4,328		
Indian ...	46		Indian ...	680		
Others ...	3		Others ...	68		

Statement of Estate Hospitals for 1918.

NAME OF ESTATE.	Average Labour Force.	Number of Sick Lines.	Number of Dispensaries.	Total Admissions to Estate Sick Lines.	Total Attendance at Estate Dispensaries.	TOTAL DEATHS ON ESTATES.				NO. OF COOLIES SENT TO TOWN HOSPITALS.	
						From Malaria.	From Dysentery.	From other causes.	No. sent.	No. died.	
Merlimau R. E., Ltd. ...	1,254	2	...	716	...	7	1	15	46	11	
Lendu R. E., Ltd. ...	388	1	1	391	2,250	4	1	10	47	18	
Pegoh Ltd., (Rumbia Division) ...	237	1	1	...	2,324	2	...	6	179	15	
Pegoh Estate ...	670	1	...	1,834	...	3	...	43	30	10	
Devon Estate, (Malacca), Ltd. ...	1,050	1	1	386	1,132	2	1	15	10	4	
Tebong R. & T. Estate, Ltd. ...	947	2	1	766	4,706	11	9	46	27	6	
The London Asiatic R. & P. Co., Ltd. ...	891'66	1	1	1,268	2,727	9	2	53	2	...	

APPENDIX E.

OUT-DOOR DISPENSARIES.

SINGAPORE.

(North Canal Road.)

REPORT BY MR. GOH TONG SIN, *Assistant Surgeon-in-charge.*

The number of cases treated was 6,187 as against 6,155 in previous year.

The dispensary was open for 297 days during the year.

The number of visits made was 12,570 as against 15,570 giving a daily average of 63.15.

The total receipts for the year amounted to \$1,405.10 as against \$1,620.35.

Of the 6,187 cases, 4,672 were paying patients, 345 were Government servants, 455 were venereal cases and 715 were indigent patients.

The principal diseases treated were:—

Malaria ...	...	...	...	403
Venereal diseases ...	...	...	...	455
Ulcers and Injuries ...	...	...	...	1,366
Bronchitis ...	...	...	...	317
Pyrexia unspecified ...	...	...	...	267
Influenza ...	...	...	...	325
Skin diseases ...	...	...	...	474

Venereal diseases:—

Gonorrhœa ...	...	...	...	82
Primary Syphilis ...	...	...	...	84
Secondary „ ...	...	...	...	95
Tertiary „ ...	...	...	...	4
Soft sore ...	...	...	...	139
Bubo ...	...	...	...	51

Three hundred and forty-seven children under 2 years of age were treated during the year and these suffered mostly from Intestinal troubles, Bronchitis, Pyrexia and Boils.

Of the 403 Malaria cases, 250 gave a history of having been infected out of Singapore, and they came mostly from Johore, neighbouring Dutch Islands, Kelantan and Trengganu.

The nationalities of patients were as follows:—

				Males.	Females.
				—	—
Europeans ...	...	...	...	14	6
Eurasians ...	...	...	...	163	215
Chinese ...	...	...	...	2,926	948
Malays ...	...	...	...	246	157
Natives of India ...	...	...	...	962	132
Others ...	...	...	...	307	111
Total ...	...	...	...	4,618	1,569

During the Influenza Epidemic free treatment was given to those who came to the dispensary and also medicine was given to those who applied at the dispensary.

Mr. CLARKE was in charge of the dispensary when I relieved him on 31st August, 1918.

Jalan Klapa Out-door Dispensary.

REPORT BY MR. LEE EE LIAT, *Assistant Surgeon-in-charge.*

The dispensary was open for 296 days during the year.

The number of patients treated at the dispensary in 1918 was 3,618, against 3,491 in 1917; the total number of visits paid being 10,693, giving an average of 36.12 per diem. They consisted of:—

Paying patients	...	...	...	3,203
Free Cases:—				
Government servants	...	...	25	
Venereal and Influenza cases	...	...	244	
Pauper patients	...	...	146	
				415
				3,618

The receipts of the year amounted to \$945.25.

The principal diseases treated and the number of cases of each were as follows:—

	1918.	1917.
Malaria	697	476
Venereals	166	305
Bronchitis	347	347
Pyrexia	294	138
Minor Injuries and Ulcers	594	540

Malaria.—Of the 679 cases 202 gave a history of recent arrival in the Colony, usually within a week, and thus were probably infected prior to their arrival, the last ports of embarkation being in most cases the neighbouring islands, Johore, Borneo and the Federated Malay States. Most of the locally infected cases came from Rochore, Kallang, and Geylang; a few from Mandai, Seletar, Bukit Timah, Choa Chu Kang, Pulau Tekong, Serangoon, and Woodlands, the last being reported by Malays as a highly malarious district.

Venereal Diseases.—(Syphilis 81, Gonorrhœa 60, Chancre 17 and Bubo 8, Total 166 cases). Of the 166 cases, 156 attributed their infection to brothels. The total cases show a decline from previous years, and their attendance was only half-hearted, many ceasing to attend before their disease was under control.

Minor Injuries and Ulcers.—The treatment of these was successful, only a few requiring removal to hospital. Most of the cases were simple, and as the patients were told and appreciated the harm of self-treatment they attended regularly until healing was complete.

The nationalities of patients were as follows:—

	Males.	Females.
Europeans	...	...
Eurasians	70	67
Chinese	1,451	194
Malays	735	397
Indians	455	88
Others	148	13
Total	2,859	759

Mr. GOH TONG SIN was in charge up to February 28th, Mr. OON SIM KONG up to September 30th, and I up to the present.

PENANG.

Chowrastra Dispensary.

The patients treated during the year numbered 7,817 as against 6,107 in 1917, an increase of 1,710.

The dispensary was open for 310 days during the year, the daily average number of visits being 47.46, that of 1917 being 50.05.

The total receipts for the year amounted to \$635.50 a decrease of \$115 to that of 1917, this decrease may be accounted for by the free treatment of all school boys received since 1918, 756 being treated free against 508 in 1917.

During the epidemic in October 738 cases of Influenza were treated.

The institution continues to be well appreciated by the poor class of people.

The principal diseases treated as compared with those of the preceding year were as follows:—

	1917.	1918.
Influenza	—	738
Malaria	371	172
Pyrexia	694	1,158
Rheumatism	511	349
Venereal Diseases	299	294
Bronchitis	332	410
Diarrhœa	89	125
Dyspepsia	213	135
Ulcers	1,186	1,317
Injuries	501	617

The nationalities of those treated were as follows:—

	1917.	1918.
Europeans	1	11
Eurasians	232	299
Chinese	2,352	2,351
Malays	1,019	2,020
Natives of India	2,413	2,998
Others	90	138

Assistant Surgeon Mr. J. WESTERHOUT did duty throughout the year.

Dresser G. DEVADSON did duty till 16th May, and on being transferred to District Hospital was relieved by Dresser V. DANIEL PILLAY who continued to do duty.

Out-door Dispensary, Lumut.

The total number of cases treated was 545 as compared with 552 of the previous year. The daily average number of visits for the year was 3.13 as compared with 2.57 of the previous year.

Of the 545 cases treated 264 were for Malaria.

The receipts for the year were \$40.93.

Of the 545 cases treated 18 were from Sitiawan.

Out-door Dispensary, Balik Pulau.

	1917.	1918.
Number of patients was	866	575
Number of visits was	1,739	971
Number of indigent patients was	148	110
Number of Government servants was	160	62
Number of paying patients was	558	403
Number of males was	593	408
Number of females was	273	167
Average number of visits per diem was	4.68	2.66
Receipts for the year were	\$124.15	\$87.85

The nationalities were as follows:—

Nationalities.			1918		1917
			Males.	Females.	Total.
Europeans	...	...	3	5	8
Eurasians	...	...	1	1	2
Chinese	...	...	298	148	446
Malays	...	...	65	3	68
Indians	...	...	41	10	51
Total	...	...	408	167	575

PROVINCE WELLESLEY.

Out-door Dispensary, Butterworth.

One thousand six hundred and ninety-one cases were treated during the year as compared with 1,683 during 1917. The collections amounted to \$271.93 as compared with \$225.69 in 1917.

The principal diseases treated were as follows:—

Diseases.	Number of cases.			
Anæmia	...	...	...	14
Ankylostomiasis	...	...	...	4
Ascariasis	...	...	...	22
Asthma	...	...	...	19
Bronchitis	...	...	...	147
Tuberculosis	...	...	...	3
Beri-beri	...	...	...	1
Constipation	...	...	...	92
Diarrhoea	...	...	...	38
Gonorrhœa	...	...	...	21
Syphilis	...	...	...	18
Nephritis	...	...	...	6
Pneumonia	...	...	...	3
Conjunctivitis	...	...	...	17
Heart Disease	...	...	...	1
Injuries	...	...	...	121
Ulcers	...	...	...	231
Influenza	...	...	...	127
Malaria	...	...	...	354

Nationalities of out-patients treated were as follows:—

Nationalities.	Males.		Females.	
Europeans	...	...	131	53
Eurasians	...	...	95	62
Chinese	...	...	246	24
Malays	...	...	276	28
Indians	...	...	643	131
Others	...	...	—	2

Out-door Dispensary, Bukit Mertajam.

The number of out-patients during the year was 1,416 and the receipts amounted to \$220.55 as compared with 1,145 patients and \$175.35 of the previous year.

The nationalities of the patients were as follows:—

<i>Nationalities.</i>	<i>Males.</i>	<i>Females.</i>
Europeans	37	7
Eurasians	44	11
Chinese	586	280
Malays	123	15
Indians	203	54
Others	45	11
Total ...	1,038	378

The principal diseases treated were as follows:—

Malaria	115
Dysentery	10
Gonorrhœa	19
Pyrexia	269
Rheumatism	12
Syphilis	31
Anæmia	23
Conjunctivitis	8
Bronchitis	103
Phthisis	7
Dyspepsia	7
Diarrhœa	27
Intestinal Colic	15
Soft Chancre	6
Wounds	283
Round-Worm	54
Ankylostomiasis	1
Influenza	183

Out-door Dispensary, Sungei Bakap.

One thousand and ninety patients were treated throughout the year, against 973 patients in the previous year. The collection amounted to \$198.74 as against \$182.05 of the previous year.

The nationalities of those treated were:—

<i>Nationalities.</i>	<i>Males.</i>	<i>Females.</i>
Europeans	68	—
Eurasians	1	—
Chinese	355	81
Malays	87	7
Indians	357	79
Others	46	9
Total ...	914	176

The principal diseases treated were as follows:—

Anæmia	...	...	...	...	3
Beri-beri	...	...	...	...	4
Diarrhœa	...	...	...	...	15
Dysentery	...	...	...	...	8
Gonorrhœa	...	...	...	...	10
Helminthiasis	...	...	...	...	53
Influenza	...	...	...	...	53
Malaria, etc.	...	...	...	...	310
Nephritis	...	...	...	...	1
Pneumonia	...	...	...	...	1
Soft Chancre	...	...	...	...	16
Syphilis	...	...	...	...	32
Tuberculosis	...	...	...	...	1
Valvular Disease of Heart	...	...	...	...	11
Wounds and Injuries	...	...	...	...	218
Ulcers	...	...	...	...	36
Yaws	...	...	...	...	1

Out-door Dispensary, Nibong Tebal.

Building.—Through the kindness of the District Officer, Nibong Tebal, the witness-room has been entirely set apart for the dispensary and the witnesses are accommodated elsewhere. The dispensary was kept open throughout the year for the public and the Government servants from 8 A.M. to 10 A.M., on Tuesdays, Thursdays and Saturdays which was later changed into Mondays, Wednesdays and Fridays, from July 15th, 1918.

Staff.—The Assistant Surgeon, Sungei Bakap and the junior dresser, Sungei Bakap Hospital, attended the dispensary at the usual hours.

Work done.—The dispensary was opened 157 days during the year. Four hundred and seventy-two patients attended the dispensary as compared with 389 patients in the previous year. Of these 271 were Government servants, 181 paying and 20 indigent patients. The daily average number of visits was 5.86 as compared with 4.65 in 1917. The collection amounted to \$45.35 as compared with \$42.48 in the previous year: the drugs and dressings were supplied from the Sungei Bakap Hospital.

The nationalities of those treated were:—

Nationalities.	Males.	Females.
Europeans	2	—
Eurasians	—	—
Chinese	97	27
Malays	95	10
Indians	213	26
Others	—	2
Total	407	65

The principal diseases treated were as follows:—

Anæmia	...	...	...	...	1
Beri-beri	...	...	...	...	2
Diarrhœa	...	...	...	...	7
Helminthiasis	...	...	...	...	11
Influenza	...	...	...	...	54
Malaria	...	...	...	...	70
New growths (cystic)	...	...	...	...	1
Pneumonia	...	...	...	...	1
Soft chancre	...	...	...	...	3
Valvular disease of heart	...	...	...	...	1
Wounds and Injuries	...	...	...	...	50
Ulcers	...	...	...	...	65

MALACCA.

Malacca Out-door Dispensary.

This dispensary was under the charge of Mr. R. M. NUNIS throughout the year. Three thousand seven hundred and eighty-two cases were treated in the dispensary as contrasted with 3,465 in 1917. The total receipts for the year were \$240.44 as against \$428.56 in 1917.

The nationalities of those treated were as follows:—

Nationalities.				Males.	Females.
Europeans	...	...	...	13	87
Eurasians	...	...	...	865	791
Chinese	...	...	...	441	206
Malays	...	...	...	735	68
Indians	...	...	...	486	84
Others	...	...	...	4	2

The chief diseases treated were:—

Beri-beri	...	...	...	...	30
Dysentery	...	...	...	...	29
Influenza	...	...	...	...	279
Pneumonia	...	...	...	...	1
Malaria	...	...	...	...	77
Pyrexia	...	...	...	...	730
Rheumatism	...	...	...	...	116
Anæmia	...	...	...	...	39
Debility	...	...	...	...	129
Neuritis	...	...	...	...	38
Neuralgia	...	...	...	...	31
Conjunctivitis	...	...	...	...	59
Ear-ache	...	...	...	...	24
Asthma	...	...	...	...	44
Bronchitis	...	...	...	...	156
Stomatitis	...	...	...	...	33
Tonsillitis	...	...	...	...	50
B. Catarrh	...	...	...	...	469

Dyspepsia	...	...	...	...	180
Flatulency	...	...	...	...	35
Diarrhoea	...	...	...	...	122
Colic	...	...	...	...	52
Constipation	...	...	...	...	151
Nephritis	...	...	...	...	24
Cystitis	...	...	...	...	23
Myalgia	...	...	...	...	29
Inflammation	...	...	...	...	32
Ulcer	...	...	...	...	122
Abscess	...	...	...	...	17
Eczema	...	...	...	...	55
Boil	...	...	...	...	23
Sprain	...	...	...	...	17
Wound	...	...	...	...	23
Ring Worms	...	...	...	...	109
Tinia	...	...	...	...	49
Scabies	...	...	...	...	46

Jasin Out-door Dispensary.

Three hundred and twenty-eight out-patients sought treatment during the year. Two hundred and eighty-seven were males and 41 females. 213 were Government employees, 45 paupers and 70 paying patients. There were no deaths. Total cash receipt for the year amounted to \$20.60. Average daily attendance was 1'07.

The most common causes of ill-health were as follows:—

Malaria Malignant	...	...	...	...	90
Constipation	...	...	...	...	34
Dysentery	...	...	...	...	10
Ulcers	...	...	...	...	30
Influenza	...	...	...	...	44
Scabies	...	...	...	...	8
Influenzal Broncho-pneumonia	...	...	...	...	20
Injuries	...	...	...	...	17
Bronchitis	...	...	...	...	23

Alor Gajah Out-door Dispensary.

Dresser TAMBY KECHIL was in charge for the whole year. The temporary Small-pox shed built in 1915 and constantly repaired is still in use. During the year one case of Small-pox was admitted from Alor Gajah on 23rd February, 1918, and there was no death. During the year 448 cases received treatment in the out-patient dispensary, males 397 and females 51. The total receipts amounted to \$30.55.

The chief diseases treated were:—

Malarial Fever	...	...	...	...	174
Ulcers	...	...	...	...	66
Anæmia	...	...	...	...	31
Constipation	...	...	...	...	43
Rheumatism	...	...	...	...	22
Bronchitis	...	...	...	...	19
Eczema	...	...	...	...	16
Scabies	...	...	...	...	14
Boils	...	...	...	...	13

APPENDIX F.

QUARANTINE.

SINGAPORE.

REPORT BY DR. G. E. BROOKE, M.A., L.R.C.P., D.P.H., *Chief Health Officer.*

Staff.

Chief Health Officer ...	...	GILBERT E. BROOKE, M.A., L.R.C.P., D.P.H.
Asst. Health Officer (Rural) ...	...	F. W. WOOLRABE, F.R.C.S., M.R.C.P., (Edinburgh), D.P.H. (<i>Acting</i>).
Asst. Health Officer (Port) ...	...	Both posts filled by the following
Second Asst. Health Officer (Port)		Assistant Surgeons <i>acting</i> :—
		W. D'CRUZ.
		T. RICHARD.
		P. C. FERNANDEZ.
		E. E. AVIET.
		F. CLARKE.

Asst. Health Officer (Quarantine
Station) ...Filled by the following officers
acting:—

P. C. FERNANDEZ.
T. RICHARD.
A. MULLE.
W. D'CRUZ.

1. The year in review has been an anxious one owing to the proximity of Cerebro-spinal fever in several neighbouring ports. Owing to the necessary restrictions imposed, immigration has been somewhat curtailed; and the influence of the war has been felt in the same direction.

Notwithstanding considerable disadvantages common to the last four years, the slow but steady development of the Government Health Office has been maintained; and it is to be hoped that the cessation of hostilities will now permit of wide re-organisation, with the creation of a separate Health Department for the whole Colony as recently recommended by the Housing Commission.

2. In a few weeks Singapore will be celebrating the centenary of its foundation by Sir STAMFORD RAFFLES. I will take the opportunity therefore to briefly review the progress of quarantine and health matters during the past century.

At the foundation of the Colony on 6th February, 1819, no special notice was taken of urban or port health matters; but in the year 1825 Superintending Surgeon ALEXANDER (stationed in Penang) very sensibly suggested that, as Small-pox was being introduced from neighbouring countries, incoming ships should furnish a "health-report" when boarded. Many years, however, elapsed before any definite organisation was thought of—years during which epidemic disease went its way practically unhindered, the only preventive effort being the desultory practice of vaccination amongst some of the local inhabitants. The next phase was reached 25 years later when Chinese immigration had assumed considerable proportions, and its dangers had become insistent. In his Annual Report for 1849/50, Senior Surgeon OXLEY pointed out that, if the voyage from China were unduly protracted, the junks frequently ran short of water and provisions, and hundreds of the coolies died. Only the previous March, 67 Chinese had been landed in a dying state.

A report about that time shewed that 11,484 immigrants had reached Singapore in one year, of whom 7,732 had come by junks, in the following proportions:—Hylam 662, Canton 994, Swatow 1,021, Macao 1,185 and Chong Lim 2,645. OXLEY suggested that a law should be passed to fine nakodahs who brought in sick or destitute persons, and the suggestion resulted in the passing of the India Act, XLI of 1850, on 22nd November of that year. Another quarter of a century passed, when in 1881, the subject was again brought up—this time by the then Master Attendant, who suggested the appointment of a Deputy Health Officer, with a boat and crew, to look after the shipping, especially the junks, which he considered were responsible for the introduction of much infectious disease. This suggestion roused the Principal Civil Medical Officer—Dr. ROWELL—who introduced the subject in his Annual Report for the following year. He said that very few ships arrived in quarantine, but that a first class Apothecary might take up the work: that perfectly effectual measures to exclude epidemic disease from Singapore, by means of quarantine, were naturally impossible, but that the danger of introduction might be reduced by intelligent inspection of ships, and isolation of sources of infection.

St. John's Island Quarantine Station was very little used in those days. A dresser was in charge as Superintendent. It frequently took 5 to 7 days to disinfect a ship!

In 1883, the above suggestions began to take shape, and a Health Officer for boarding ships was first sanctioned. In 1884, a steam-launch was purchased for him; and two years later the first Quarantine and Prevention of Diseases Ordinance (XIX of 1886) was passed, to give him the necessary legal powers.

The Rules under this Ordinance appeared in 1887. As far as I can make out, however, not even by then had any Apothecary been appointed; and in 1888 the Principal Civil Medical Officer was still doing the small amount of town and port health work that was thought necessary.

In the nineties, however, Assistant Surgeon J. A. REARDON was appointed Deputy Health Officer, and so continued until 1900 when J. V. PESTANA relieved him. During that decade systematic examination of immigrants was first instituted—a result brought about by the advent of Plague in Hong-kong in the year 1894.

Such was the position until 1902 when, for the first time, a Port Health Officer was appointed. A small office was given to him, but no clerk, nor even a telephone, was provided.

The new Port Health Officer's staff consisted of one Assistant Surgeon who helped him on ships, acted as krani in the office, and as Sanitary Inspector in rural districts. If a case of Cholera occurred at Tanah Merah, the office had to be closed for 4 or 5 hours, and the inspection of any ships abandoned!

St. John's Island was about half under jungle. Its accommodation consisted of a few attap sheds with mud floors. Its water supply was from 10 wells, which were frequently infected with Cholera. There was only one latrine for the whole island; and not a single disinfectant in use! There were no facilities for disinfecting ships. The sanitation and water supply of the shipping were not thought of. The hours of duty were theoretically supposed to be from sunrise to sunset. No wonder therefore that the first Port Health Officer found the situation to be hopeless and left in two months.

With the picture of 17 years ago, we can, I think, contrast, with justifiable pride, the conditions of to-day. The European Staff consists of a Chief Health Officer, two Assistant Port Health Officers, a Rural Health Officer, and a Resident Health Officer for the Quarantine Station—where there are also an Engineer, a clerk, and four dressers, besides a large subordinate staff. The island has been cleared; the camps have been made permanent in corrugated iron and can house about 4,000; there is a large distilling plant, with a high level service reservoir of 50,000 gallons capacity, and water mains throughout the station; there are seven disinfectors, and full modern equipment of Sanitary conveniences, and administrative buildings. In the

port are two launches, each containing a powerful disinfecting plant to facilitate the prompt disinfection of ships; and the sanitary control of shipping been gradually extended—though by strange anomaly, it does not yet comprise the sanitary administration of Tanjong Pagar Docks and wharves.

In the rural districts, rubber estates, etc., are brought under constant routine inspection; and village sanitation, schools, sale of milk, etc., etc., receive regular attention—for which both the Rural Health Officer and a Sanitary Inspector are now available.

There is a fairly commodious and very busy public office, with a telephone exchange and staff of clerks. An up-to-date consolidated Quarantine Ordinance was enacted in 1915. The nucleus of a Public Health Information Bureau for the Far East is in embryo. Reports of infectious disease in Eastern ports are regularly received and charted—thus allowing a prompt imposition and removal of quarantine restrictions, to the advantage of the shipping world. Some idea of the present magnitude of the shipping work can be gleaned from the following résumé of 16 years' work:—

Visits to vessels	22,814
Crew and Passengers examined	6,034,193
Number landed on Quarantine Station	488,042
Bills of Health issued	24,710
(A revenue of about \$120,000)	

Harbour and Shipping.

3. The number of ships boarded in 1918 was 1,709, of which 26 proved to be infected. The infection was due to Cholera in 12 instances—5 being from Madras, 5 from Batavia, and 1 each from Bandjermasin and Samarang. Small-pox caused 10 infections, of which the origins were:—6 from Madras, and one each from Bangkok, Wei-hai-wei, Amoy and Hongkong. Cerebro-Spinal Meningitis was responsible for 4 instances, 2 being from Hongkong, and one each from Kobe and Bombay. No ships were infected with Plague but a case was found on a local tongkang. Crew to the number of 108,116 were inspected, and passengers 176,082, the numbers being very much the same as during the previous year.

Three Chinese junks were inspected, but no sickness found. A European Inspector (T. H. REDRUP) was engaged to patrol the channel from Penggaran (Johore territory) to Bedoh, in order to board and inspect incoming junks from China during the 5 months' season of the North East Monsoon. By this means it is possible to obviate the nocturnal dumping of infected people along the coast. A launch has been kindly provided by the Johore Government, and the inspections began again on the 1st December; the result will be reported on, next year.

Corpses.—Sixty-nine (69) bodies were viewed—41 being from ships, 27 from sampans and one from Pulau Brani. Permits to bury were given in 65 of the above cases, the remaining 4 being sent either to St. John's or to the Infectious Disease Hospital for post-mortem examination.

Water.—Thirty-nine (39) water-boats were inspected—but no surprise inspections were made, nor were any visits paid to Messrs. Hammer & Company's reservoirs during the year.

Disinfections.—The *Hygeia* and *Crow* were used to fumigate no less than 740 ships. They were also employed to change the quarantine police guard on 12 (monthly) occasions, and to move heavy furniture on 4 occasions.

Considerable anxiety was caused on 12th May by the arrival of s.s. *Wakasa Maru* from Kobe with 1,856 Japanese deck passengers en route from South America. She had had a death from Cerebro-Spinal Meningitis, and came to Singapore with 7 cases on board. She was not allowed to return to Japan—nor would her Captain proceed on his voyage. She was consequently detained for some time at the Quarantine Anchorage, where one died and 2 more cases occurred. The cases and their immediate contacts were then transferred to the hulk *Cheng Hock Kian* where one case died. The Surgeon of the *Wakasa Maru* visited the hulk daily until finally the ship sailed on 4th June, when the cases and contacts were removed to the Quarantine Station.

Restrictions.—Owing to a severe outbreak of Cerebro-Spinal Meningitis at Hongkong, it was thought advisable to prohibit the immigration of deck passengers altogether from that port. That exclusion was in force from 2nd April to 1st October. With a disease of that nature, depending chiefly on "carriers", there is no other method of dealing with the matter, owing to our large immigration, and the impossibility of carrying out bacteriological examinations on a wide scale. The action met with opposition from Hongkong—but wisdom was justified of her children, and a local outbreak was averted, thus probably saving an immense loss to the community and to trade both in human life and money. Hongkong allowed 4 ships to bring deck passengers to Singapore in the face of the Governor's prohibition—the passengers were in each case repatriated. As is usual in these cases, deck passengers endeavour to avoid restrictions by transshipping at some other port. A careful look-out was kept for such wily Cantonese on all boats with Hokiens or Teochews from Amoy and Swatow, but none were found. We caught and dealt with some, however, on nine ships from Bangkok, and three from Saigon. The list of suspected or infected ports during the year comprised the following:—

For Cholera:—Bagan Si Api Api, Bandjermasin, Batavia, Calcutta, Cheribon, Indramjoe, Madras, Manila, Menggala, Negapatam, Pekalongan, Saigon, Samarang, Sourabaya, Tanjong Balai and Tanjong Redib.

For Plague:—Bangkok, Bassein, Belawan Deli, Bombay, Hongkong, Karachi, Moulmein, Muar, Rangoon and Samarang.

For Small-pox:—Batavia, Bombay, Calcutta, Madras, Manila, Palembang and Saigon.

For Cerebro-Spinal Meningitis:—Batavia, Hongkong, Kobe, Osaka and Samarang.

Owing to the severe outbreak of Influenza in South Africa a careful look-out was kept on the shipping from that Colony—but no cases were introduced.

Quarantine Station.

4. The total passengers admitted to St. John's Island were 24,182, and the greatest numbers in residence on any one day were 2,337.

Hospital cases remaining from the previous year were 10, and 353 were admitted during the year 1918. The total deaths amongst those treated were 57 giving a hospital death-rate of 15.7 per cent. Seven others died in the contact camps; three corpses were sent for post-mortem and burial, and one other decomposed corpse was found in the sea.

Two Cholera cases were admitted, of whom one died.

Vaccinations to the number of 5,143 were done on the station.

Of 193 non-infected ships whose passengers were landed on St. John's, 4 subsequently developed infectious disease (including 2 Cerebro-Spinal infections). Of 18 infected ships whose passengers were landed on the Island, one ship developed a further case while in quarantine.

Distillation was kept down again, owing to the high cost of fuel; 19,650 gallons only were distilled. The remainder of our supply was 1,378,496 gallons of Singapore water, pumped up to the service reservoir.

The number of rainy days was 139; and the recorded rainfall amounted to 89.02 inches.

I attach (Appendix I) some interesting notes on the Influenza and Cerebro-Spinal Fever cases as observed and treated at St. John's during the year.

Rural Work.

5. The Assistant Health Officer (Rural)—Dr. SMART—who went on active service early in the war, was replaced by the temporary services of Dr. F. W. WOOLRABE, F.R.C.S., M.R.C.P., who joined us on 13th May.

His long experiences in Sarawak, in the Queensland Quarantine Service, and as Medical Adviser in Siam, have rendered him a valuable asset to the department.

The rubber estates on Singapore Island have once again been taken in hand, and Dr. WOOLRABE'S work should result in great improvement of estate sanitation and general conditions. Mosquito surveys have been steadily carried out. A beginning has been made on village sanitation. He was also most helpful in carrying out the disinfection of the large public offices, etc., during the last Influenza epidemic. In all, he paid 63 visits to estates, and 52 visits to Government Buildings, Schools, etc.,—the results of which, will be found in a short report of his which I attach as Appendix II hereto, with a chart of Influenza cases from 25 Government Departments.

Epidemiology.

6. Singapore, during the year 1918, suffered from an epidemic of Plague, and two slight epidemics of Influenza.

The outbreak of Plague did not assume alarming proportions—it had just begun at the opening of the year, and the last case occurred on 28th September. In all, there were 178 cases with 160 deaths. The opportunity was taken by the Government Health Department to have a general cleaning of various Government Buildings, offices, etc., including rat catching, and rat-proofing. The following prophylactic inoculations were also carried out in March by our staff, with Haffkine's Vaccine:—Marine Department 52, General Post Office 32, Public Works Department 1, Principal Civil Medical Officer 3, Detective Station 3, Import and Export Office 3, Government Veterinary Surgeon 1, Monopolies 40, Chinese Protectorate 30, Port Health Office 6—total 171. A stock of the Vaccine is always kept for current needs, and stored at 50° F., by the courtesy of the Singapore Cold Storage Company.

A mild epidemic of Influenza broke out about the 20th June. It spread widely, but was of a benign type, and I think had the effect of conferring a certain amount of immunity which was of value when a re-crudescence occurred later in the year. The opportunity was again taken to clean up and disinfect most of the Government Offices and Buildings. The following notice was issued to all Heads of Departments:—

"NOTICE TO HEADS OF DEPARTMENTS.

1. During the present epidemic of Influenza it is especially important that all offices should be kept as clean and free from dust as possible.

2. The office staff of peons, sweepers or toties should therefore be instructed to sweep and dust every office on Saturday afternoons, and to apply a "dust-laying disinfectant" to all floors and furniture on Sunday mornings.

3. The process should be controlled by a clerk or responsible official of the department, and periodical visits will be paid by a Government Health Officer, to see that the work is being properly done.

4. The disinfectant should be made of the following:—

Jeyes (or Izal, or Okol)	...	...	...	1 part
Kerosene	...	...	...	2 parts
Crude Oil	...	...	...	3 parts

This should be mixed in buckets and applied with mops and rags.

5. Stocks can be given out at the Port Health Office, if sent for during office hours.

6. A return should be made (by memo. or telephone) daily to the Port Health Office, stating the number of staff who are absent on account of sickness, and the number of new cases since the previous day. If no return is made, it will be concluded that none of the staff are absent.

GILBERT E. BROOKE,
Government Health Officer."

A re-crudescence (or re-introduction) of the epidemic began on 19th October. This lasted for several weeks, but fortunately was not of an alarming type, although the percentage of Pneumonias was considerably higher than previously. For purposes of local action the disease was gazetted as an "infectious disease".

Influenza arrived by shipping from most districts of the Far East. For a few weeks we quarantined all deck passengers amongst whom cases were found, and in this way we were, I think, instrumental in excluding a large amount of the disease. The very virulent strain from South Africa fortunately did not reach us.

We continued, throughout the year, to send weekly leaflets to Eastern Ports, giving returns of local infections and the list of places declared by us to be infected. A sample leaflet is attached. I hope later to improve it.

"IMPORTANT NOTICE TO SHIP MASTERS ARRIVING AT THE STRAITS
SETTLEMENTS IN QUARANTINE."

1. Attention to the following points may save much time and trouble. We want to give you as quick despatch as possible—therefore try to help us.
2. If, during your voyage, serious cases should occur accompanied by bubo, diarrhoea or pneumonia, the surgeon should take a smear of the pathological material on a 3" x 1" micro-slide; fix it by passing a few times over the flame of a spirit lamp; and then keep it carefully for the Health Officer.
3. If a death occurs within 12 hours of reaching port, and you have no surgeon on board, keep the body for the Health Officer to see. If a death or infectious case occurs while you are in port, let the Port Health Officer know as soon as possible.
4. If you come from any of the ports in the list overleaf, hoist the Q flag at the foremast head 1 hr. (Penang: 3 hrs.) before you arrive, and proceed to Q Anchorage.
5. Get your crew lined up as soon as possible after anchoring; and, if you have deck passengers, get them all mustered at one end of the ship before the H. O. arrives.
6. When the Health Officer comes alongside, pay him the compliment of lowering your accommodation ladder. Don't expect him to swarm up a dirty rope ladder.
7. Have all your papers ready: Bill of Health, List of crew, List of passengers, and Manifest of cargo; and get the Surgeon, Chief Officer and Purser to meet the Health Officer as he gets aboard.
8. A ship arriving in a dirty or insanitary state is liable to prosecution.
9. No deck passengers from India or China may land in the Straits Settlements without satisfactory proof of recent vaccination; whilst indigent decrepits, and persons suffering from consumption, leprosy, pox, and chronic "sore-eye," are liable to exclusion if not natives of the Colony.
10. While you have the Q flag flying, allow no one to board or approach your ship without a written permit from P. H. O. The only exceptions are: (a) the Pilot, (b) those on Health Officer's launch; and (in war time) (c) the Examination Service.
11. Disinfection is only obligatory in the case of infected ships and certain suspected ships. Local charges for disinfection are at the rate of \$2.50 for each 100 (or part of 100) registered tons. If the holds are not disinfected, only half fees are charged. The minimum charge is \$25. Double fees are required for night work. A certificate of disinfection (optional) costs \$5.
12. If you are going to a second port in the Colony and are carrying no deck passengers thither, you may be able to get a permit exempting you from quarantine there. Ask the P. H. O. about it, or about any quarantine matters you wish.
13. The Port Health Office is open to the Public from 9-30—5 daily (Exc. Sat. 9-30—1; Sundays and Bank Holidays 10—12). If you want a B/H, apply during those hours. (\$5 revenue stamp).

14. The local laws dealing with shipping, and quarantine, are:—

The Merchant Shipping Ordinance (XXXII of 1910).

The Quarantine and Prevention of Diseases Ordinance (XXXIII of 1915)."

Administrative and Office.

7. A correspondence clerk for the office, and a Sanitary Inspector, were both sanctioned during the year, and will be at work in 1919. These much needed additions to the staff will be a great boon to the department.

The Planters' Association of Malaya took up the subject of preventive quarantine as affecting the planting industry. A Committee consisting of Dr. DAY and Mr. MOOJIART were appointed to investigate the subject and issued their report in the form of an interesting memorandum. It is to be hoped that now the war is over, the subject will be taken in hand. The establishment of coolie depôts at the chief emigration ports of Amoy, Swatow, Hongkong, Madras and Negapatam would, I think, be a valuable step in the right direction, and save much unnecessary quarantine at the ports of arrival. Another matter of great importance in this direction is the Colony's new 'Labour Code' which has been in a gestation phase for several years. It is to be hoped that it will soon emerge to a life of usefulness.

The matter of a General Health Department for the Colony is now under consideration.

APPENDIX I.

Report on Influenza Epidemic and cases of Cerebro-Spinal Meningitis on St. John's Island during 1918.

By W. D'CRUZ, L. M. S., Acting Resident Medical Officer.

Influenza.—From 13th October, 1918, to 8th November, 1918, four Dutch ships s.s. *Camphuys*, *Van Hoorn*, *Van Rees* and *Senang* landed deck passengers infected with Influenza on St. John's Island, from Bandjermasin, Bawean and Batavia, resulting in the disease spreading to a few of the staff. Fifty-seven cases of Influenza were admitted into hospital out of which 18 died:—

			Cases.	Deaths.
s.s. <i>Camphuys</i>	...	...	3	2
s.s. <i>Van Hoorn</i>	...	...	35	13
s.s. <i>Van Rees</i>	...	...	1	—
s.s. <i>Senang</i>	...	...	5	2
Toties and Luggage Coolies	...	...	13	1

In addition to the above cases the Engineer's family and his servants contracted Influenza and were treated in their quarters (ten cases). The K. P. M. s.s. *Van Hoorn* whose passengers, 324 in number, from Bandjermasin and Bawean brought Influenza to St. John's Island. The passengers were landed on 18th October, 1918, and were discharged as follows:—251 deck passengers on 25th October, 1918; 48 deck passengers on 31st October, 1918; and 12 deck passengers on 8th November, 1918. During their stay on St. John's Island, 35 cases of Influenza occurred, out of which 17 developed Broncho-Pneumonia; of these 17 Broncho-Pneumonia cases, 13 died and 4 recovered. On 20th October, 1918, three days after they were landed 12 cases of Influenza were admitted into hospital; on 21st October, 1918, 14 cases; on 26th October, 1918, 8 cases; and on 28th October, 1918, 1 case. Four toties and luggage coolies were also admitted on 21st October, 1918, three days after the *Van Hoorn* deck passengers were landed on St. John's Island, altogether 13 cases occurred among the staff, the last case being admitted on 3rd November, 1918; of these 13 cases one developed Broncho-Pneumonia

and died. *s.s. Camphuys* 57 deck passengers landed on 13th October, 1918, and discharged on 31st October, 1918, three cases of Influenza of which 2 died. *s.s. Van Rees* 66 deck passengers landed 28th October, 1918, and discharged 30th October, 1918, one case of Influenza no deaths. *s.s. Senang* 279 deck passengers landed on 30th October, 1918, and discharged on 4th November, 1918, five cases of which 2 died.

Preventive Measures.—Re-disinfection of infected contacts, infected camps and Government quarters washed out with Sanitas Okol and all bedding put out in the sun. A gargle of Pot. Permang. was given to all contacts, staff and police guard.

APPENDIX II.

Report on Rural and other Government Health Work.

By DR. F. W. WOOLRABE, *Acting Assistant Health Officer (Rural)*.

I joined the service in May but rural work was handicapped by the difficulty of getting a motor car, and afterwards by my want of knowledge of the topography of the Island—a disability that naturally decreased in time.

The estimated rural population for 1917 (the latest figures available) is 44,644 and the death-rate per mille 23.43, against a total population for the Island of 359,459 and a death-rate of 35.71.

The labour force of ten of the principal plantations is as follows:—

PLANTATION.	Chinese.	Javanese.	Indian.	Malays.	Total.	Deaths.	Left from illness.
Bukit Sembawang ...	747	339	226	...	1,352	9	3
Singapore United ...	216	...	143	393	897	19	(4 of which infants).
Bukit Timah ...	95	88	82	...	265	3	...
Pasir Panjang ...	...	...	249	...	249	2	...
Seletar ...	...	...	188	38	226	8	(2 being children).
Nassim ...	133	...	11	6	150	...	...
Ulu Pandan ...	23	41	...	85	149	1	...
Ulu Bri ...	...	...	...	205	205	1	...
Bukit Panjang ...	68	...	62	5	135	2	...
Mandai Tekong (Singapore)	93	...	30	2	125	...	...

These cases include children and women. These figures cannot be taken as more than approximate. Some estates employ or did employ a good deal of contract labour.

Comparing present conditions on most of the estates visited with those noted by Dr. SMART, the result of his thorough and painstaking work is constantly observable.

New wells, curbs to old ones, latrines where there were none before, improved ventilation, etc. More important if less obvious is the fact in places where he notes that anophelines could be found without much looking for, I have found them only after careful search or have not found them at all.

Coolie lines on the larger estates comply fairly well with the departmental requirements as far as structure goes. They are, however, often dirty,

particularly temporary lines. Latrines have been provided on practically all the larger estates, though in some cases the coolie will not use them.

On the smaller estate there is usually a plank and attap bangsal with a mud floor varying from extreme dirtiness to a surprising cleanliness, less commonly the latter: with washing and drinking wells in the nearest valley: with or without latrines.

In the present condition of the rubber industry and with the inflated prices of materials it has not been possible to ask owners to do very much beyond whitewashing and improving ventilation, protecting wells or making new ones, moving latrines and so on.

Some 23 estates send in returns of the labour forces but not very regularly. There has been improvement in that respect lately.

Some of them show successive cases of Malaria notably Bukit Panjang as noted latter. Among the coolies I see, vaccination marks are usually noticeable.

There was one fatal case of Plague at Ulu Pandan probably contracted in town, and one fatal case of Cholera at Pasir Panjang, the origin of which remains a mystery. It cannot be asserted that the limitation of these cases was due to action taken, but fortunately no others occurred.

Bukit Panjang has had a series of cases of Malaria. Enquiry showed that all cases came from one set of lines, close to the factory.

A breeding place of *Anophelines Maculatus* was found close to the lines in a spring-fed pool in a deep and tortuous "parit". The Manager converted the spring into a well and filled in the "parit", intending to pump from the spring. Unfortunately the overflow cut a new channel and old conditions seem about to recur. The Manager proposes to fill the channel with coarse granite hoping to convert the flow into an underground one.

If this succeeds, a difficult problem will have been solved. Fever has diminished in the lines but not disappeared. The stretch of Bukit Timah Road from near Cluny Road to Mandai Road is reported malarious. The Government Quarry at 8th mile is particularly notorious. However, I could find no anopheline larvæ there and not a single anopheline imago was found among those caught both by night and day in the lines. Again I was informed that Mr. LOVERIDGE's quarry at 11½ mile was so malarious that only Hokiens could work there. However, Mr. LOVERIDGE tells me he has very little illness among the 100 coolies quartered there and has had only 9 deaths from all causes in 16 years. A large number of anopheline larvæ were found in No. 2 quarry, but only culicine imagines were found in the lines. The nearest known breeding places to these quarries are at Bukit Panjang village and factory, about 1½ miles from each.

Failure attended efforts to find breeding places to account for Malaria at Bukit Timah Police Station.

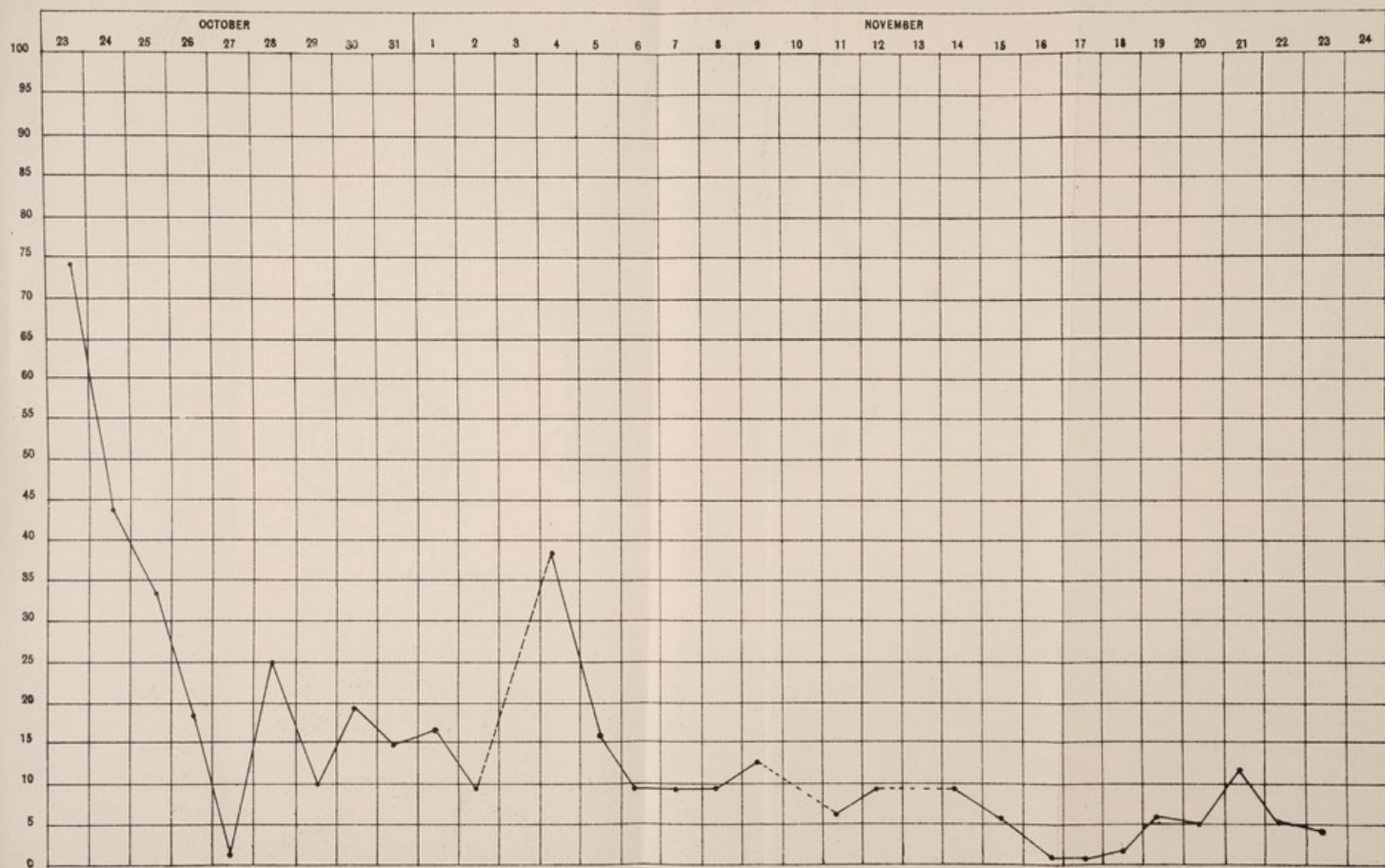
Every parit and pool found for a mile round was repeatedly examined, but only in one, and there only once, were larvæ found, viz.:—in a lotus pool ½ mile away. Arrangements were made by which coolies from the small estates near by could get quinine at the Police Station.

The whole area will be re-examined.

Serangoon Estate, Pulau Ubin, is a notable example of Dr. SMART's successful work. Before his time it was very malarious. He advised that the lines should be moved and built more for the Malayense in about six feet of sea water. The Manager tells me that fever has practically disappeared, but a few cases occur, noted in the returns.

During the Influenza Epidemic, the estates suffered very little. The heaviest incidence seems to have been on those along Chua Chu Kang Road. On some estates there were no cases. This result in the case of estates as near to town as Bukit Timah may fairly be put to the credit of the management. Comparing lines of affected and unaffected estates one is struck by the better ventilation of the latter. Moreover the remote Chua Chu Kang Estates might have been expected to escape rather than near ones. There were, however, a few deaths from Influenza and an aftermath of several from Pneumonia.

CHART SHEWING RETURNS OF INFLUENZA CASES BY 25 GOVERNMENT DEPARTMENTS - OCTOBER - NOVEMBER 1918.





It seems to me that a good deal might be done to instruct estates coolies in some elementary facts of disease. A poster in the lines, with lurid text would be discussed and jested over, and here and there would be remembered.

Venereal disease seems particularly suited for such treatment. No race has a stronger desire for children to carry on family worship than the Chinese. The sterilising effect of venereal disease would come home to them forcibly. Improvement in such matters in the East at any rate seems hopeless without exact knowledge. Let a Chinese realise that Gonorrhœa commonly means no children, and cannot be cured by swallowing any known drug, and he will be inclined to seek treatment and will not knowingly infect others.

The country villages show signs of increasing, and are deserving of attention. They consist usually of a double row of wood and attap sheds often touching each other.

Other houses are scattered about the back yards between pig styes, cattle sheds and fowl runs. If the lie of the land allow there are probably ponds for growing lotus or pig food. The wells at best have a wood curb, oftener none.

These wells are sometimes actually in the road, about a foot from the road drain, with ground water level about a foot below the surface. Sometimes they are behind the houses; and, in one case at least, at the bottom of the gulley taking drainage from two rows of houses as well from cattle sheds, pig styes, and latrines.

Latrines are of primitive type usually. They are sometimes cleaned daily by local gardeners. In other cases the night-soil accumulates on the ground till washed away.

Public Works Department coolies keep the road swept, and usually do it well. Otherwise there is no garbage removal. A great deal of litter lies about, some of it attractive to rats.

House floors are usually of earth. If of wood, they are practically always dangerously low, affording cover for rats. In the same way the low platforms in many shops are dangerous.

Road drains are usually of bad section and uncemented. There are anopheline breeding places in several of the villages. It seems opportune to note these insanitary conditions, particularly those of water supplies. With the sanctioned Sanitary Inspector and a gang of coolies, a good deal can be done to reduce rat food and cover, and to reduce mosquitos.

Some patch work may be possible to wells, and latrines may be moved, but dangerous wells cannot be closed till safe ones are ready. It seems to me that in some cases at least a safe supply can only be approved by a communal well and pump.

A water plant of pump, tank, and one or more standpipes, would suit admirably. The type of tap used at Port Swettenham giving a definite quantity per turn would prevent waste.

Provision of small incinerators would help to rid these villages of the menace of plague.

The advantages are obvious of surveying a village plan to which extensions must conform in each case. In fact such a plan is almost a necessary complement to a communal well.

I have assumed that the crowded districts outside Municipal limits at Siglap and Pasir Panjang will be included in the Municipality in time. They are urban in character, particularly the former and are topographically part of the town.

The Influenza epidemic came under my purview as affecting the rural area and also Government Institutions in the Municipal area. Returns of cases were made by 25 departments and sub-departments from October 23rd.

As will be seen from the attached curve the epidemic was on the decline as far as it affected the public service. The curve is not pursued beyond November 23rd. Few cases were returned after that and would probably include other illness.

An attempt was made from October 17 to check its progress by thorough and repeated oiling of floors, staircases, etc., in the various Government Offices. In addition I personally disinfected the quarters of the Government Hill cases, and such others as were reported to this office. It can hardly be doubted that this oiling had a considerable effect.

In the rural districts as above noted many estates escaped, and most cases were mild. It is noticeable that the lines of affected estates were badly ventilated.

Mosquito inspections were made at practically every rural inspection, and neighbouring waters fished for larvæ, and rooms inspected for imagines, apart from special visits.

It is hoped to complete a mosquito map of the Island which may be of future use. Owners and Managers are informed of conditions found and suggestions are made for rectifying them.

Among places outside the rural area the following received attention.

Government Hill.—A large patch of trees was cut down in the hope of lessening mosquito infestation of the bungalow of the Assistant Colonial Secretary and undergrowth was cleared from what was left. At the same time all drains and likely places were inspected, but no breeding place was found inside the grounds, though culicine larvæ were plentiful in some of the drains outside them.

Keith's Swamp.—A good deal has been done to improve this historic nuisance. The result is that anophelines are now found only at the Silat Road end, where the expense of filling in would not be prohibitive.

Kim Seng Road Swamp.—Millions of *Culex Sitiens* breed there. The water is black with larvæ in places. At the suggestion of the Chief Health Officer I analysed the salt content of the water, which was about one-third the strength of sea water. This raised the interesting question of adaptation to environment. It was found that *Culex Sitiens* larvæ could flourish in pure sea water (not salt solution of sea water strength). The number of laræ varies greatly. At one visit I could hardly find any. This swamp is being filled in gradually.

Pearls Hill.—This area was examined but no breeding place was found.

It has not been practicable to do any systematic examination of schools, a work which will shortly be begun again. An examination of the Reformatory children was made with the idea of determining the spleen rate. However, only one enlarged spleen was detected and no cases of Trachoma.

A small outbreak of Chicken-pox occurred at Pearls Hill School which was the subject of inquiry and also a series of cases of illness among the staff. It was thought these cases—mostly accompanied with sore throats—might be attributable to some local condition. However, no common factor could be found and there was little doubt but that they were coincidental.

A series of cases of illness giving a widal reaction occurred at the Police Barracks, cases obviously atypical, if enteric at all.

No circumstance could be found likely to be responsible for enteric except nearness of latrines to dormitories, though the dormitory incidence did not support this conclusion.

It became evident afterwards that the cases were not enteric. However, the inquiry brought some minor defects to light and drew attention to the proximity of dormitories to latrines, which latter are to be replaced by a wash-down system. A new well supply near Changi Police Station was reported contaminated—analyses of water of this and other neighbouring wells were made, and the well shown to be safe.

Visits were made to Pulau Tekong (twice) and Pulau Ubin. Search in the former island discovered an anopheline breeding place behind the village, possibly the cause of the malaria cases reported from the Police Station, though some of the men appear to have had previous infection.

As far as I could see after walking over a good deal of the island there could be little difficulty in getting rid of any breeding places in Pulau Tekong.

A supposed case of Small-pox was inspected but the rash had another origin, more similar in name than pathology.

QUARANTINE, PENANG.

REPORT BY DR. F. R. SAYERS, B.A., M.D., D.P.H., *Acting Senior Health Officer, Straits Settlements.*

1. *Port.*—Visits were paid to 551 ships, and 45,111 crew units and 128,702 coolies and passengers were examined.

Forty-three ships carried 55,583 "Indian Immigrant Coolies" to Penang. Two hundred and twenty-two "Chinese Immigrant Ships" arrived with 17,131 "Chinese Immigrants" on board.

Not a "Pilgrim Ship" touched at Penang during 1918.

Seven ships were "infected", the cause on five was Cholera and on two Small-pox. All these ships came from Madras and Negapatam.

One of the crew of one of the Cholera infected ships developed Cholera.

The disinfecting launch *Kite* was used 297 times at the request of Shipping Agents.

Certificates of disinfection were issued to all these ships. The total charges for these services amounted to \$9,187.50.

Twenty-one permits "to bury ashore" were issued after inspection for corpses on ships or tongkangs.

Permission to import, tranship or export coffins containing corpses was granted on 16 occasions.

Bills of Health were carried on departure by 612 ships.

For the last three months and on many days during the earlier part of the year Mr. WESTERHOUT, Assistant Surgeon in charge of Chowrasta Dispensary, inspected ships in the absence of the writer on extra-municipal health duties or on inspections of the Quarantine Station and the Leper Asylum, Pulau Jerejak.

Statement A gives particulars of inspections for the past 18 years.

2. *Quarantine Station.*—The total number admitted from 72 ships was 33,481 of which 28,680 were "Indian Immigrant Coolies" and 4,801 were ordinary deck passengers.

The average daily number of inmates was 780.

The following cases were admitted to the Station Hospital:—

						Cases.
Cholera	...	...	...	...	...	80
Plague	...	...	...	...	...	—
Small-pox	...	...	...	...	...	7
Chicken-pox	...	...	...	...	...	35
Measles	...	...	...	...	...	37
Dysentery	...	...	...	...	...	60
Malaria	...	...	...	...	...	77
Pneumonia	...	...	...	...	...	43
Influenza	...	...	...	...	...	64
Other diseases	...	...	...	...	...	578
Total						981

At the Dispensary 1,587 patients were treated.

There were 180 deaths at the Station giving a death-rate 5.37 per mille. Cholera or Influenza was the most frequent cause of death.

The increase in the incidence of Pneumonia at the Station to which attention was drawn in the report for 1917 was maintained. Previously all the cases occurred amongst "Indian Immigrant Coolies" but in 1918 two deck passengers who travelled with these coolies were attacked.

The incidence for 1918 is:—

—	Admitted.	Cases.	Deaths.	Cases per 1,000.
Coolies	28,680	41	21	1'43
Deck-passengers ...	4,801	2	...	0'28
Total ...	33,481	43	21	1'28

Vaccinations with Henleys Lymph were performed on 29,536 inmates. The percentage of success was 72'6.

The superiority of the vaccinations performed on "immigrants" from China over those performed on "immigrants" from India was as marked as in 1917.

Of these "immigrants" 727 were sent to the Quarantine Station and it was found that 229 only were successfully vaccinated giving a percentage of success of 31'49.

The remaining 496 were re-vaccinated at the Station with a percentage of success of 69'12.

The total rainfall was 1,224'75 millimetres on 119 days.

The greatest fall in 24 hours was 86'50 millimetres on 2nd September, 1918.

The water-supply continues to be excellent.

The health of the staff was satisfactory but for illness caused by the Influenza Pandemic which effected 34 of the staff with a fatal result in one case.

Mr. NICKELSEN, Resident Assistant Surgeon, went on leave on 1st July, 1918, and was replaced by Mr. MEHTA who remained in office at the end of the year.

The post of Lay Superintendent remained vacant.

Statement B contains Quarantine Statistics for the past 13 years.

Extra-Municipal.—The Settlement (extra-municipal) was free from "dangerous infectious disease" except for 20 cases of Plague and 144 cases of Small-pox.

Of the plague cases 18 occurred at Gertak Sunggol and its neighbourhood.

A detailed report of the outbreak and its treatment is contained in M. O. P., 66/17.

Of the Small-pox cases 110 were in the Province.

Against Small-pox a considerable amount of preventive work was accomplished including 44,905 vaccinations or re-vaccinations.

During the second half of October the extension of the Influenza Pandemic to the rural districts of Penang Island was evidenced by the increase of the daily death-rate for these districts from an average of 4'8 to 22'25. Measures to diminish the spread of the disease included the dispensing to all applicants of free advice, gargles, disinfectant and quinine from the various hospitals and dispensaries and from a motor car which toured the island daily in charge of the writer or of Mr. SAMUEL, Senior Vaccinator.

Sixty-three cowsheds were visited during the year and under "The Sale of Food and Drugs Ordinance, 1914" the buildings, cows, milkers and milking utensils were inspected.

The writer visited the Dindings in connection with Estate Health Work and the proposed building of a police barrack at Kampong Segari.

The Medical Officer, Province Wellesley, carried out the necessary health work in that district throughout the year. The results are reported separately.

Statement C shows incidence of Cholera, Plague and Small-pox in the Settlement in 1917 and 1918.

STATEMENT A.

PARTICULARS OF INSPECTIONS FOR 18 YEARS.

Year.	Vessels.	Units of crew and passengers inspected.	Total landed on Quarantine Station.
1901	1,309	200,186	2,188
1902	1,000	180,632	5,755
1903	957	180,251	1,688
1904	748	184,691	2,217
1905	869	214,136	10,406
1906	675	204,988	23,288
1907	633	219,839	17,650
1908	1,205	176,119	21,175
1909	503	161,971	23,058
1910	526	217,967	71,876
1911	1,144	277,151	134,957
1912	634	287,373	55,493
1913	818	272,473	53,937
1914	1,040	215,967	48,399
1915	405	148,662	23,176
1916	662	213,726	42,736
1917	367	166,162	37,595
1918	551	173,813	33,481

STATEMENT B.

CONDENSED REPORT OF 14 YEARS' WORK.

Harbour and Quarantine.

Year.	Vessel.	Units of Crews and passengers examined.	Passengers landed on Quarantine Station.	Small-pox treated.	Cholera treated.	Plague treated.	Daily Average Quarantine Station.	Vaccinations.
1905 ...	869	214,136	10,406	10	1	...	171	...
1906 ...	675	204,988	23,288	16	8	2	461	6,490
1907 ...	633	219,839	17,650	4	24	1	116	5,652
1908 ...	1,205	176,119	21,175	51	9	2	366	5,691
1909 ...	503	161,971	23,059	25	2	1	359	5,614
1910 ...	526	217,967	71,876	62	33	2	1,584	12,205
1911 ...	1,144	277,151	134,957	109	387	1	3,740	63,988
1912 ...	634	287,373	55,493	75	4	4	1,111	38,297
1913 ...	818	272,473	53,937	11	12	1	120	37,276
1914 ...	1,040	215,967	48,399	171	9	...	116	32,609
1915 ...	405	148,662	23,176	3	...	...	478	21,562
1916 ...	662	213,726	42,736	11	1	...	817	36,806
1917 ...	367	203,757	37,595	11	12	...	820	36,808
1918 ...	551	173,813	33,481	7	80	...	720	29,536

STATEMENT C.

1917 & 1918. Cases of	Municipal area.	Rural Districts.	Province Wellesley.	Dindings.	Pulau Jerejak.	Settlement.
Cholera ...	{ 1 1	... ...	3 ...	... ...	18 77	22 78
Plague ...	{ 6 31	... 20	... ...	... ...	... ...	6 51
Small-pox ...	{ 23 52	174 33	331 110	... ...	11 7	539 202

APPENDIX G.

GOVERNMENT ANALYST'S DEPARTMENT, SINGAPORE.

REPORT BY DR. FRANKLAND DENT, M.Sc., Ph.D., F.I.C., *Government Analyst, Straits Settlements.*

The following table shows the Revenue and Expenditure for the year 1918, and, for comparison, the Revenue collected during the preceding year:—

Revenue.	1917.	1918.	Expenditure, 1918.	
<i>Fees of Office.</i>	\$ c.	\$ c.		\$ c.
Petroleum Inspection ...	2,880 00	2,765 00	Personal Emoluments	14,042 18
Miscellaneous ...	8,758 50	8,300 50	Stores from England	a 500 00
			Miscellaneous ...	504 32
Total ...	11,638 50	11,065 50	Transport, Allowances	220 94
By sales of Pyridine ...	548 80	955 90	Total ...	15,267 44

(a) Estimated.

Petroleum.**(a) KEROSENE.**

The following table gives a comparison between the quantities tested on importation into the Island of Singapore during the years 1917 and 1918:—

Description of Oil.			1917.			1918.		
			Number of Consignments.	Tins.	Tons.	Number of Consignments.	Tins.	Tons.
<i>Case Oil.</i>								
American Oil.	Devoe's	...	6	59,546	...	2	10,862	...
	S. Arrow	...	9	171,886	...	6	51,584	...
	Crown	...	73	344,190	...	108	483,826	...
Langkat Oil.	Dragon	...	23	106,200	...	25	93,725	...
	Cross	...	13	12,900	...	15	14,600	...
	R. Sun	...	16	28,088	...	12	30,308	...
	L. Glass	...	8	8,000	...	9	8,492	...
Borneo Oil	Fish	...	11	7,400	...	11	10,800	...
	...	...	9	3,178	...	11	5,420	...
<i>Bulk Oil.</i>								
Pulau Samboe			4	...	156.6133	1	...	38.36
Pulau Bukom			3	...	118.5	...	...	...
Total			175	741,388	275.1133	200	709,617	38.36

Ten samples were tested for their flash-points for the purpose of adjusting the readings given by various instruments with those given by the standard one kept in this laboratory.

(b) BENZINE.

The following table gives a comparison between the quantities imported into the Island of Singapore during the years 1917 and 1918:—

Nature of Receptacles.		1917 (287 consignments).		1918 (369 consignments).	
		Number.	Gallons.	Number.	Gallons.
2-gallon cans	...	231,900	463,800	337,564	675,128
4-gallon drums	...	29,000	116,000	11,938	47,752
Total	...	260,900	579,800	349,502	722,880

The receptacles were in all cases inspected to see whether they fulfilled the conditions laid down in the Rules and By-laws under the Petroleum Ordinance.

(c) MINERAL TURPENE.

One thousand nine hundred and forty-four tins were imported into Singapore and tested for flashpoint, as compared with 1,350 tins in 1917.

(d) LIQUID FUEL.

Sixty-six samples were tested for their flash-points.

Thirty-two samples were tested as to whether they were in accordance with the Admiralty specification as regards flash-point and the percentage of water.

(e) TESTING VESSELS FOR DANGEROUS PETROLEUM VAPOUR.

Forty-two vessels were tested for inflammable vapour by means of Redwood's Standard Instrument, either before being allowed to enter Port limits under Rule 23 of the Petroleum Ordinance or to enter Dry Dock under By-law 77 of the Straits Settlements Ports Ordinance, 1912.

(f) TANK INSTALLATION AT PULO BUKOM.

Two inspections were made during the year.

Explosives.

Six consignments of explosives were tested on importation into Singapore in accordance with the Rules under the Arms and Explosives Ordinance, 1913.

All passed the prescribed tests.

The following table gives the details of these and, for the purpose of comparison, those imported and tested during the two preceding years:—

Year.	Number of consignments.	Number of packages of 50 lbs. each.				Total.	
		Dynamite.	Gelignite.	Blasting Gelatine.	Gelatine Dynamite.		
1916	...	6	500	2,260	50	300	3,110
1917	...	2	100	2,111	...	500	2,711
1918	...	6	1,550	3,167	...	1,713	6,430

In addition to the above 30 cases of Detonators were imported.

Minerals, Metals, etc.

Twenty-five samples of local minerals, including amongst others, Wolframite Iron, Copper and Silver-Lead Ores, etc., were assayed during the year.

Fifty-nine samples were sent in for identification, they included Iron Pyrites, Stibnite, Iron Ore, Heavy Spar, Galena, Native Bismuth, Tin Ore and Slag, Pyrolusite, Kaolin, etc.

Eleven samples of metals and alloys were also assayed and reported upon; also a quantity of gold jewellery seized by the Police.

Municipal Gas Works.*

Eight samples of Coal, 4 of Spent Oxide and 1 of a deposit found in a main were sent in by the Municipal Gas Engineer for analysis.

Liquors.

Twenty-three samples of various liquors were sent in for examination and report. They included 5 of Brandy artificially prepared from arrack or some other silent spirit and 1 of Gin consisting of silent spirit flavoured with Aniseed.

Fourteen samples were sent in for estimation of spirit strengths.

(a) METHYLATED SPIRITS.

Five hundred and eighty-five drums, equal to approximately 63,595 gallons of arrack, were methylated for industrial purposes, as against 595 drums and 35 cases, equal to approximately 71,110 gallons, in 1917.

Counterfeit Coins.

Four sets of exhibits for counterfeiting Straits Settlements subsidiary silver coins were sent in by the Police.

Forged Currency Notes.

Nine sets of exhibits were sent in by the Police, of which 1 set each came from Malacca and Muar and the rest from Singapore.

Chemicals and Drugs, Etc.

Twenty-six samples were received for analysis and report.

On several occasions solutions of the hydrochlorides of the Ipecac. Alkaloids were prepared for the Singapore hospitals.

Toxicology.

Eighteen specimens of stomach contents, washings, etc., were received. Of these opium was found in 11 cases, mercury in 2 cases and strychnine and lysol in one case each. In another case 3.7 grains of strong ammonia were recovered.

Four specimens, sent in for the detection of alcohol, yielded in 2 cases 3 grains and 21 grains of absolute alcohol respectively.

Twelve specimens taken from bullocks showed traces of arsenic in 4 cases.

In 1 specimen taken from a dog, no poison could be detected.

Poisons, etc.

Twelve sets of exhibits sent in by the Police included a broken bottle from Johore containing a solution of 3.1 grains of corrosive sublimate, a bottle labelled "Mixture Quinine" containing a solution of 0.65 grain strychnine per fluid ounce.

Clothes saturated with strong nitric acid and sulphuric acid, respectively. Two "blinding" powders were found to consist of finely ground glass and ground rice mixed with the same, respectively. An envelope was found to contain 280 grains of white arsenic.

Urine.

Ten specimens were received for analysis.

Water.

Thirty-five samples were sent in for analysis and report as to their suitability for drinking purposes, 4 samples in connection with industrial processes and 20 samples taken from oil-borings for special investigation.

Milk.

Nine samples were received from the various hospitals, etc., under the control of the Medical Department.

Nine samples taken by the Police from itinerant vendors in various quarters of the town were all found to be adulterated by the addition of water amounting to from 47 per cent to 68 per cent.

In addition, 1 sample of human milk, 1 of buffalo milk, 1 of cow's milk and 1 of condensed milk were received and reported upon. The last was found to be below the standard laid down by the rules under the Sale of Food and Drugs Ordinance.

Miscellaneous.

Other samples, not included under the above heads, which were sent in for analysis and report included:—Seven samples of oil cake, 5 of reinforced concrete, 3 of gambier, 2 each of coconut oil and gutta percha and 1 each of fertilizer, paint, rice, rubber and 1 test meal. A number of clothes, etc., were also sent in, to be tested for blood stains.

GOVERNMENT ANALYTICAL DEPARTMENT, PENANG.

REPORT BY MR. J. C. COWAP, B.SC., F.I.C., *Deputy Analyst, Penang.*

The following table gives the details of Revenue and Expenditure for the Department in 1918. The Revenue for 1917 is given for comparison:—

Revenue.	1917.	1918.	Expenditure, 1918.
	\$ c.	\$ c.	\$ c.
Petroleum Inspection Fees	2,940 00	2,515 00	Personal Emoluments 6,450 30
Miscellaneous ...	383 50	1,005 50	Stores ... 300 00*
Certificate for Export of Petroleum Fees ...	234 50	249 00	Miscellaneous ... 127 61
			Transport & Traveling Allowances ... 156 35
Total ...	3,558 00	3,769 50	Total ... 7,034 26

(*Approximate.)

The number of reports issued on general Analytical work was 232 and 104 reports were made on petroleum tested.

Petroleum.**(a) KEROSENE.**

Forty-six shipments were tested as to the flash point. All samples flashed above the Standard Temperature (73° F.)

Particulars of Kerosene imported and tested are given in the following table:—

Description of Oil.				Number of Consignments.	Tons.	Gallons.	
American Case Oil	...	...	...	1	...	80,000	
American Bulk Oil	...	...	...	1	...	880,000	
<i>East Indian Oil in Tins.</i>							
Crown	...	...	...	18	...	64,000	
Fish	...	...	...			23,800	
Dragon	...	...	...			70,000	
Lamp-Glass	...	...	...			11,800	
Cross	...	...	...	8	...	48,000	
Mineral Turpene	...	...	...			6,175	
<i>East Indian Bulk Oil.</i>							
Sumatra	...	...	...	29	5,938'42	...	
Borneo	...	...	...		2,558'79	...	
Dragon	...	...	...		1,343'15	...	
Total				...	57	9,840'26	1,183,775

(b) DANGEROUS PETROLEUM.

Forty-seven importations totalling 633,400 gallons were made in the year. All the drums were inspected in accordance with the provisions of the Petroleum Ordinance.

(c) PETROLEUM RESIDUE.

Eleven consignments representing 2,484·26 tons and 26,075 gallons were imported and examined. All samples flashed over 150° F.

Explosives.

Two consignments only of explosives were imported and tested during the year. Both consisted of gelignite.

The number of cases was 1,849 and the weight 92,450 lbs.

Spirits.

Six hundred and fifty-four samples of spirit were examined for the purpose of assessing the duty payable on them.

Thirty-six other samples of various liquors were examined for other purposes. These included beer, stout, whisky, gin, brandy, toddy, illicit spirit, wine, etc.

Five samples of a spirit sold as brandy were proved to be grain spirit.

Toxicology.

Specimens, generally human viscera, in eleven cases of suspected poisoning were analysed.

The poisons detected were arsenic (2 cases), opium (2 cases), Datura (1 case), Carbolic acid (1 case), Croton oil (1 case).

In one case a pot of tea which was suspected of having produced violent symptoms of poisoning was shown to contain 5 per cent of epsom salt.

Opium and Chandu.

Thirty-nine reports were made on analyses of opium, chandu or chandu dross undertaken for the Monopolies Department. These analyses necessitated the examination of 181 separate samples.

Blood Stains.

Twenty-four exhibits were received from the Police for examination for blood stains. These exhibits generally consisted of clothing and weapons—Blood was discovered on most of them.

Water.

Fifty-six samples of water were analysed and reported upon from a health or industrial point of view.

A large number of them were condemned as unfit for drinking purposes.

Miscellaneous.

The miscellaneous samples analysed included alloys, copper wire, wolfram and tin ores, many samples of rice, counterfeit coins, guanos, copra powder, toddy, sugar, cloth, bhang, ammonium chloride, cocain, morphine, mica, various medicines, sea salt, bean meal, coir, soda ash, calcium, chloride, etc.

***Staff.**

I was in charge throughout the year.

APPENDIX H.

REPORT ON THE KING EDWARD VII MEDICAL SCHOOL,
SINGAPORE, FOR 1918.(BY DR. G. H. MACALISTER, M.A., M.D., D.P.H. (Cantab.), *Principal*.)Dean (ex-officio) ... S. H. R. LUCY, M.R.C.S., (Eng.), L.R.C.P.
(London), Principal Civil Medical Officer.**Permanent Staff.**

Principal ... G. H. MACALISTER, M.A., M.D., D.P.H. (Cantab.)

Assistant Principal ... { T. D. KENNEDY, M.A. (St. And.), M.B. (Edin.)
J. T. DUNCAN, F.R.C.S. (Acting)

King EDWARD VII Professor J. A. CAMPBELL, M.D. (Edin.), D. Sc. (Edin.)

Tutor ... A. J. THUMBOO, L.M.S. (Singapore.)

Lecturers.

Anatomy & Surgical Anatomy A. J. THUMBOO, L.M.S. (Singapore.)

Biology ... J. A. CAMPBELL, M.D., D. Sc. (Edin.)

Chemistry and Physics ... F. DENT, M. Sc. (Vict. and Leeds), Ph. D.,
(Munich.), F.I.C.

Clinical Medicine ... { J. T. DUNCAN, F.R.C.S., L.R.C.P.
G. H. MACALISTER, M.A., M.D., D.P.H. (Cantab.)

Clinical Surgery ... { C. J. SMITH, M.B., F.R.C.S. (Edin.)
J. R. McVAIL, M.B., B. Ch. (Glas.)

Eye Diseases ... T. W. H. BURNE, M.B., B.S. (London.)

Materia Medica & Therapeutics T. MURRAY ROBERTSON, M.D. (Edin.)

Medical Jurisprudence ... H. J. GIBBS, M.R.C.S. (Eng.), L.R.C.P. (London.)

Mental Diseases ... H. J. GIBBS, M.R.C.S. (Eng.), L.R.C.P. (London.)

Midwifery and Diseases of Women and Children ... L. SMITH, M.B. (Cantab.), M.R.C.P. (London.)

Pathology and Bacteriology ... G. A. FINLAYSON, M.A., M.B. (Aberd.), M.R.C.P. (London.)

Physiology ... J. A. CAMPBELL, M.D., D. Sc. (Edin.)

Practice of Medicine ... D. J. GALLOWAY, M.D., C.M., F.R.C.P. (Edin.)

Practical Pharmacy ... G. W. CRAWFORD, M.P.S.

Public Health ... G. E. BROOKE, M.A. (Cantab.), L.R.C.S., L.R.C.P. (Edin.), D.P.H.

Surgery ... C. J. SMITH, M.B. (Edin.), F.R.C.S. (Edin.)

Tutor to Hospital Assistant ... A. J. THUMBOO, L.M.S. (Singapore.)

Demonstrator in Pathology ... S. N. BARDHAN, B.A., L.M.S. (Calcutta.)

School Council.—Dr. S. H. R. LUCY, on assuming the duties of Principal Civil Medical Officer on July 20th, becomes automatically (Dean) of the School and Chairman of the Council, in lieu of Dr. F. B. CROUCHER.

Dr. P. H. HENNESSY was, on October 3rd, appointed as representative on the Council of the Chief Secretary, Federated Malay States, in lieu of Dr. W. FLETCHER.

School Staff.—The late Principal, Dr. R. D. KEITH, succumbed on October 2nd, to the illness which had led to his retirement in 1917. A subsequent resolution of the Council expressed their feeling of the high services rendered to the School by Dr. KEITH, and their deep regret at his untimely death.

Dr. T. D. KENNEDY, who had been in bad health during the early part of the year, went on leave in April. I regret to state that he has now been invalided out of the service.

Dr. J. T. DUNCAN, who has been acting as Principal and Assistant Principal for the last few years, was transferred in November to the Federated Malay States, for emergency service. He was there taken ill with Influenza and has since that time been in such indifferent health that he too has been invalided home. I feel that this officer's valuable services to the School have not received the recognition they deserved and so take this opportunity of referring to them. During his period of service he was, for the greater part of the time, single handed, and yet, in addition to heavy teaching work, he restored the School records and accounts from chaos to order. He realised early the altered circumstances brought about by the recognition of the School by the General Medical Council of Great Britain and Ireland and took a leading part in laying the foundation of the plans for reform of the School, which it is hoped will bear good fruit in the future. Although his work was less spectacular than that of his predecessors, he worked unsparingly for the best interests of the School throughout the critical period of the war, and it is feared that his exertions predisposed to his present breakdown in health.

Dr. J. A. CAMPBELL, Professor of Physiology, returned from leave in April.

Captain G. H. MACALISTER, Indian Medical Service, was released from military duty at the end of June and reported for duty as Principal of the School in July.

Students.—Twenty-seven students joined for the full course. There are now 114 full course students. There are no dismissals or resignations to report.

Ten students completed their course and obtained the L. M. S. Diploma; of these, five have joined the Straits Service, temporarily or permanently, and two have joined the Federated Malay States Service. Three have gone into private practice.

The total number of diplomas since 1910, amounts now to 95.

Hospitals Assistants.—Fourteen students joined this course and eight have passed out with the certificates. One hundred and thirty-seven Hospital Assistants have now been trained at the School.

Dispensers.—Two students attended this course, and one obtained the certificate.

Dentists.—Seven candidates were successful in obtaining the dental certificate.

Financial.

School Fund:—

Investments	...	\$11,144 13	
Revenue	...	6,483 60	Including Bank Interest.
Student fees	...	3,265 00	
Total Revenue	...	27,863 38	

King Edward VII Memorial Fund:—

Value of Investments	...	\$20,855 87
Revenue	...	31,674 56
Expenditure	...	9,213 88
Bank Balance	...	22,460 68

APPENDIX I.

PATHOLOGICAL DEPARTMENT.

REPORT BY DR. G. A. FINLAYSON, M.B., Ch.B., M.R.C.P., *Government Pathologist.*

Laboratory, Sepoy Lines.

Total number of specimens examined	...	...	3,254
Widal's reaction for "Enterica"			
positive	...	...	167
partial 1 in 20	...	...	26
negative	...	...	665
			858
<i>Malaria</i> :—			
Parasite present	...	...	57
" absent	...	...	115
			172
<i>Diphtheria</i> :—			
K. L. B. present	...	...	15
" absent	...	...	17
			32
<i>Gonococcus</i> :—			
Organism present	...	...	13
" absent	...	...	30
			43
<i>Syphilis</i> :—			
Wassermann reaction, positive	...	...	729
partial	...	...	100
negative	...	...	725
			1,554
<i>Sputum for T. B.</i> :—			
Bacillus present	...	...	15
" absent	...	...	45
			60
<i>Leprosy</i> :—			
Bacillus present	...	...	38
" absent	...	...	39
			77
<i>Plague</i> :—			
Bacillus present	...	...	36
" absent	...	...	26
			62
<i>Varied</i> :—			
Urine examined for pus, organisms, etc.	...	...	93
Stool " ova, amœbæ, etc.	...	...	101
Sections of new growth	...	...	75
Vaccines prepared	...	...	18
Examination of C. S. fluid	...	...	17
" fauces	...	...	55
" pus	...	...	25
Precipitin reaction for human blood	...	...	3
Differential count	...	...	9

Several samples of water supplies were plated and reported upon while a number of rats from the Gaol were examined; none showed plague infection.

Mortuary, Sepoy Lines.

Total number of autopsies 164; 102 were performed for the Coroner.

Return showing immediate cause of death.

Beri-beri	...	...	...	...	11
Lobar Pneumonia	...	...	...	...	5
Broncho-Pneumonia	...	...	...	...	8
Malaria	...	...	...	...	12
Tuberculosis	...	...	...	...	9
Dysentery	...	...	...	...	11
Enteric Fever	...	...	...	...	7
Plague	...	...	...	...	31
Suppurative Peritonitis	...	...	...	...	1
Other septic conditions	...	...	...	...	6
Diseases of respiratory system	...	...	...	...	1
" " nervous	...	...	...	...	2
" " circulatory	...	...	...	...	15
" " alimentary	...	...	...	...	2
" " genito urinary system	...	...	...	...	2
Neoplasm	...	...	...	...	2
Accidents, poisoning, etc.	...	...	...	...	33
Still birth	...	...	...	...	1
Unknown decomposed	...	...	...	...	5
Total					164

Return showing incidence of diseases.

Beri-beri	...	...	...	...	11
Enteric Fever	...	...	...	...	9
Malaria—acute	...	...	...	...	13
" chronic	...	...	...	...	10
Dysentery, amœbic—acute	...	...	...	...	4
" " chronic	...	...	...	...	2
" bacillary—acute	...	...	...	...	2
" " chronic	...	...	...	...	2
" mixed	...	...	...	...	1
Pneumonia—lobar	...	...	...	...	5
Pyæmia	...	...	...	...	1
Neoplasm	...	...	...	...	3
Plague	...	...	...	...	31
Still birth	...	...	...	...	1

A. Nervous System.

Meningitis—tuberculous	...	...	...	...	1
septic	...	...	...	...	1
Cerebral Hæmorrhage (traumatic)	...	...	...	...	1

B. Circulatory System.

Aneurysm of Aorta	...	...	...	...	2
Aneurysmal Dilatation	...	...	...	...	4
Advanced atheroma	...	...	...	...	7
Endocarditis—acute	...	...	...	...	1
" chronic	...	...	...	...	3
Myocarditis	...	...	...	...	5
Congenital malformation of heart	...	...	...	...	1
Splenic anæmia	...	...	...	...	1
Syphilitic aortitis	...	...	...	...	4
Thrombosis—femoral vein	...	...	...	...	1

C. Respiratory System.

Bronchitis—acute	...	...	...	1
Bronchiectasis	...	...	...	1
Broncho-pneumonia	...	...	...	9
Pleuritis—acute	...	...	...	11
" chronic	...	...	...	8
" tuberculous	...	...	...	14
Emphysema, marked	...	...	...	1
Laryngitis syphilitic	...	...	...	1
" tuberculous	...	...	...	8
Tuberculosis of Lung—active	...	...	...	13
" " " quiescent	...	...	...	4
" of mediastinal gland	...	...	...	1

D. Diseases of Digestive System.

Cholangitis, acute	...	...	...	1
Cholecystitis, acute	...	...	...	4
Cyanotic atrophy	...	...	...	3
Fatty liver	...	...	...	1
Calculus, biliary	...	...	...	7
Hepatic cirrhosis	...	...	...	6
Perihepatitis, chronic	...	...	...	1
Gumma of spleen	...	...	...	1
Infarct of spleen	...	...	...	2
Follicular colitis	...	...	...	3
Inguinal hernia	...	...	...	1
Peritonitis, acute	...	...	...	3
" chronic	...	...	...	1
" tuberculous	...	...	...	1
Tuberculosis of gut	...	...	...	7
" mesenteric gland	...	...	...	1
Ulcer of stomach	...	...	...	1

E. Diseases of Genito-urinary System.

Cystitis, acute	...	...	...	1
Nephritis, interstitial	...	...	...	2

H. Affections produced by external causes.

Asphyxia	...	...	...	5
Poisoning	...	...	...	2
Drowning	...	...	...	5
Fracture, skull	...	...	...	6
" spine	...	...	...	1
" ribs	...	...	...	2
Multiple injuries	...	...	...	3
Stab wounds	...	...	...	6
Burns	...	...	...	2
Lacerated cerebral substance	...	...	...	2
Rupture of interval viscera	...	...	...	4

K. Varied Conditions.

Abscess—pyæmic	...	...	...	1
" hepatic	...	...	...	2
" mastoid	...	...	...	1
" appendicular	...	...	...	1

Mortuary, Tan Tock Seng's Hospital.

Total number of autopsies 1015: 85 were performed for the Coroner; 208 died within 24 hours while a further 103 died 24 to 48 hours after admission.

The total does not include the incomplete examinations, thoracic viscera alone, which were carried out in the height of the Influenza epidemic in the latter part of the year.

Return showing immediate cause of death.

Beri-beri	...	...	...	71
Lobar Pneumonia	...	...	...	77
Broncho-pneumonia	...	...	...	120
Tuberculosis	...	...	...	103
Leprosy	...	...	...	4
Enteric Fever	...	...	...	29
Malaria	...	...	...	112
Black water fever	...	...	...	1
Dysentery	...	...	...	173
Plague	...	...	...	17
Suppurative Peritonitis	...	...	...	21
Sapraemia	...	...	...	14
Varied septic conditions	...	...	...	25
Accidental injuries, etc.	...	...	...	42
Diseases of nervous system	...	...	...	15
" " circulatory system	...	...	...	51
" " respiratory	...	...	...	25
" " alimentary system	...	...	...	31
" " genito-urinary system	...	...	...	21
Cerebro-spinal meningitis	...	...	...	2
Ankylostomiasis	...	...	...	15
Schistosomiasis	...	...	...	5
Neoplasm—Malignant	...	...	...	27
Syphilis	...	...	...	5
Splenic Anæmia	...	...	...	3
Senility	...	...	...	4
Unknown	...	...	...	2

Return showing incidence of diseases.

Beri-beri	...	...	...	74
Dysentery, amœbic acute	...	...	...	61
" " chronic	...	...	...	134
" " bacillary acute	...	...	...	20
" " " chronic	...	...	...	11
" " mixed acute	...	...	...	11
" " " chronic	...	...	...	15
Enteric Fever	...	...	...	43
Pigmented Peyer's patches	...	...	...	19
Malaria, subtertian	...	...	...	80
" benign tertian	...	...	...	10
" quartan	...	...	...	4
" mixed infection	...	...	...	2
" unclassified	...	...	...	5
" chronic	...	...	...	62

Malarial pigment	...	...	...	33
Black water fever	...	...	...	1
Ankylostomiasis	...	...	...	38
Schistosomiasis	...	...	...	7
Sapræmia	...	...	...	39
Tuberculosis, general	...	...	...	7
" miliary	...	...	...	1
Plague (one septicæmic)	...	...	...	17
Leprosy	...	...	...	4
Splenic anæmia	...	...	...	5
Lymphatic Leukæmia	...	...	...	1

A. Nervous System.

Cerebral abscess	...	...	...	1
" softening	...	...	...	5
" gumma	...	...	...	5
" hæmorrhage	...	...	...	5
" laceration	...	...	...	1
Hæmorrhage, subdural	...	...	...	2
Meningitis pneumococcic	...	...	...	3
" septic	...	...	...	5
" tuberculous	...	...	...	3
" cerebro-spinal	...	...	...	2
Myelitis	...	...	...	3
Lateral sclerosis	...	...	...	1

B. Circulatory System.

Aneurysm, thoracic aorta	...	...	...	11
" cardiac	...	...	...	2
Aneurysmal dilatation thoracic aorta	...	...	...	7
Atheroma advanced or endarteritis, syphilitic	...	...	...	86
Endocarditis, ulcerative	...	...	...	2
" chronic, aortic	...	...	...	13
" " aortic and mitral	...	...	...	4
" " mitral	...	...	...	4
" " tricuspid	...	...	...	1
Myocarditis syphilitic	...	...	...	6
Gumma of heart	...	...	...	2
Pericarditis, acute	...	...	...	17
" chronic	...	...	...	6
" tuberculous	...	...	...	4
Thrombosis femoral vein	...	...	...	1

C. Respiratory System.

Bronchitis, acute	...	...	...	6
Bronchiectasis	...	...	...	7
Broncho-pneumonia	...	...	...	4
" influenzal	...	...	...	162
Empyema, pneumococcic	...	...	...	19
" tuberculous	...	...	...	3
" hepatic abscess	...	...	...	1
Emphysema, marked	...	...	...	22

Pulmonary collapse	...	...	...	4
" infarct	...	...	...	6
" abscess	...	...	...	5
" gangrene	...	...	...	4
Pyopneumothorax	...	...	...	2
Pleuritis, acute with effusion	...	...	...	13
Pleuritis, acute plastic				
right	...	...	...	35
left	...	...	...	21
double	...	...	...	72
Pleuritis, chronic adhesive				
right	...	...	...	26
left	...	...	...	11
double	...	...	...	93
Pleuritis—tuberculous	...	...	...	124
Lobar Pneumonia, acute				
right lung, upper	...	...	...	2
" middle	...	...	...	1
" lower	...	...	...	3
" upper and middle	...	...	...	3
" upper and lower	...	...	...	1
" middle and lower	...	...	...	5
" complete	...	...	...	2
left lung, lower	...	...	...	11
double right middle and left lower	...	...	...	1
upper, both sides	...	...	...	1
Lobar pneumonia, chronic				
right lung, upper	...	...	...	5
" middle	...	...	...	4
" lower	...	...	...	13
" upper and middle	...	...	...	2
" middle and lower	...	...	...	3
" complete	...	...	...	2
left lung, upper	...	...	...	4
" lower	...	...	...	15
" complete	...	...	...	4
double right middle and both lower	...	...	...	4
both lower	...	...	...	8
both upper	...	...	...	1
right complete and left lower	...	...	...	1

D. Digestive System.

Parotitis, acute	...	...	...	1
Ulcer, œsophageal	...	...	...	2
" gastric	...	...	...	7
" duodenal	...	...	...	1
Duodenal polyp	...	...	...	1
Pancreatic cyst	...	...	...	1
Dilatation of stomach, acute	...	...	...	1
Entero-colitis, acute	...	...	...	13
Appendicitis, acute	...	...	...	2
Prolapsus ani	...	...	...	1
Stricture of rectum—dysenteric	...	...	...	4
Fistula in ano	...	...	...	1
Tuberculosis—gut small	...	...	...	56
" " large	...	...	...	15
" appendix	...	...	...	1
" peritoneum	...	...	...	8

Tuberculosis—spleen	...	...	...	4
" liver ...	...	...	...	6
" suprarenal	...	...	...	1
Cholangitis	...	...	...	11
Cholecystitis	...	...	...	6
Hepatic cirrhosis	...	...	...	41
Fatty liver	...	...	...	15
Gumma of liver	...	...	...	3
Perihepatitis, chronic	...	...	...	28
Calculus, biliary	...	...	...	13
Catarrhal Jaundice	...	...	...	1
Hepatic abscess, amoebic	...	...	...	6
" " septic	...	...	...	1
Perisplenitis, chronic	...	...	...	37
Abscess of spleen	...	...	...	1
Gumma of spleen	...	...	...	1
Infarct of spleen	...	...	...	10

Peritonitis, Acute General.

Peritonitis, Enteric Fever	...	...	...	13
" Dysentery	...	...	...	9
" Gastric Ulcer	...	...	...	1
" Cholecystitis	...	...	...	1
" Splenic Infarct	...	...	...	1
" Psoas abscess	...	...	...	1
" Pneumococcal	...	...	...	3
" Traumatic	...	...	...	1
" acute localized	...	...	...	16
Dysentery	...	...	...	1
Pneumococcal	...	...	...	1
Acute orchitis	...	...	...	1
Peritonitis, chronic general	...	...	...	3

E.—Diseases of Genito-Urinary System.

Cystitis, acute	...	...	...	4
Nephritis—parenchymatous	...	...	...	30
" interstitial	...	...	...	13
Hydronephrosis	...	...	...	3
Pyelitis	...	...	...	2
Pyonephrosis	...	...	...	4
Pyelonephritis	...	...	...	4
Tubercles of kidney	...	...	...	2
" " bladder	...	...	...	1
Extravasation of urine (stricture)	...	...	...	1
Calculus, renal	...	...	...	4
Renal Infarct	...	...	...	4
Nephrolithiasis	...	...	...	4
Uræmia	...	...	...	2
Ovarian cyst	...	...	...	1

H.—Affections produced by external causes.

Asphyxia—strangulation	...	...	...	1
Burns	...	...	...	4
Drowning	...	...	...	2
Poisoning	...	...	...	4
Death under chloroform	...	...	...	2
Fracture, skull	...	...	...	8
" pelvis	...	...	...	1

Fracture, ribs	...	...	...	2
" femur	...	...	...	1
" humerus	...	...	...	1
" tibia and fibula	...	...	...	3
" upper and lower jaw	...	...	...	1
Multiple injuries	...	...	...	5
Rupture of spleen	...	...	...	3
" " gall bladder	...	...	...	1
" " liver	...	...	...	1
Stab wounds—neck	...	...	...	2
" thorax	...	...	...	3
" abdomen	...	...	...	5
" axilla	...	...	...	1
Gun shot wounds	...	...	...	2

K.—Various Conditions.

Abscess, pelvic	...	...	...	1
" ischio-rectal	...	...	...	2
" thigh	...	...	...	1
" mastoid	...	...	...	2
" psoas	...	...	...	2
Cellulitis, acute	...	...	...	6
Gangrene—lower limbs	...	...	...	7
Synovitis, acute knee joint	...	...	...	2
" wrist joint	...	...	...	2
Arthritis, chronic—hip	...	...	...	1
" " shoulder	...	...	...	1
Tuberculous disease of bone	...	...	...	2
" " " joints	...	...	...	2
Kyphotic curvature	...	...	...	1
Undescended testicle	...	...	...	1
Diverticula of gut	...	...	...	1
Horse—shoe kidney	...	...	...	1
Patent Foramen ovale	...	...	...	1
Enlarged Thyroid	...	...	...	1
Anthelmiasis :—				
Necator americanus or	...	...	}	68
Anchylostoma duodenale	...	...		
Ascaris lumbricoides	...	...	...	50
Trichocephalus dispar	...	...	...	12
Glonorchis Sineusis	...	...	...	10
Neoplasms				
Primary carcinoma of liver	...	...	...	17
Malignant growth—lung	...	...	...	6
" " pleura	...	...	...	1
" " cervical glands	...	...	...	2
Carcinoma of stomach	...	...	...	7
" " œsophagus	...	...	...	1
" " colon	...	...	...	1
Epithelioma—pharynx	...	...	...	1
" tongue	...	...	...	1
" scar	...	...	...	1
Sarcoma—orbit	...	...	...	1
" retroperitoneal glands	...	...	...	1
Glioma—brain	...	...	...	1
Osteo sarcoma—humerus	...	...	...	2
" " femur	...	...	...	1
" " palate	...	...	...	1

Remarks.—The only section which might call for comment is the Influenza epidemic. As, however, the pathological lesions have been described in numerous articles in various languages it seems unnecessary to burden a report of this nature with a detailed account of the pulmonary conditions. As recorded in prior records Malaria, Tuberculosis, Pneumonia, Dysentery and Beri-beri lay a heavy toll on the Chinese coolie population. Tuberculosis is now a notifiable disease and it will be of interest in the future to observe the relationship of mortality to incidence of disease.

Staff.—One laboratory assistant, Mr. M. P. SARATHY, having qualified as a dispensing chemist, left the service in the latter part of the year. Owing to the insufficiency of pay and lack of prospects I have been unable to fill the vacancy with a suitable candidate. Mr. BARDHAN'S services have been of great value, particularly in the preparation of material for the medical students.

APPENDIX J.

ANNUAL REPORT ON THE MEDICAL DEPARTMENT, LABUAN, FOR THE YEAR 1918.

REPORT BY DR. T. C. A. CLEVERTON, M.R.C.S., L.R.C.P., *Medical Officer.*

Population and Health.—Table shewing the estimated population, and the birth and death-rates, for the years 1916 to 1918:—

Year.			Estimated Population.	Births.	Deaths.	Birth-rate.	Death-rate.
1916	...	...	6,862	296	202	43'13	29'44
1917	...	...	6,796	210	264	30'90	38'84
1918	...	...	6,848	249	198	36'36	28'91

The Birth-rate was highest during the third quarter, and the death-rate during fourth quarter. Of the total number of deaths, Malaria accounted for 54, Influenza 31, Debility and Age 19, Convulsion 33, Phthisis 26, Unknown and other causes 35.

The mortality under one year of age was 59 as against 92 in 1917.

The following table shews the Infantile Mortality under one year of age:—

Year.			Deaths.	Percentage to total death-rate.	Percentage to total birth-rate.
1916	...	...	62	30'69	20'94
1917	...	...	92	34'84	43'81
1918	...	...	59	29'79	23'69

There were 6 still-births during the year as against 1 in 1917. The causes of deaths amongst infants under one year of age were as follows:—Malaria 16, Convulsions 23, Inanition 7, Influenza 1, Other causes and unknown 12.

There was an epidemic of Influenza which probably caused many deaths recorded under Convulsions and Unknown.

Malaria.—Forty-seven cases were admitted to Hospital during this year as against 46 in 1917. One hundred and ninety-seven cases were treated as out-patients as against 222 in 1917. Of the total number of deaths, 54 were attributed to this disease as against 60 in 1917. A sum of \$644.40 was spent by the Rural Board for clearing empty tins, etc., in connection with anti-malarial measures.

Beri-beri.—This disease has shewn a great decrease during this year. There were 5 admissions with no deaths during this year as against 42 with 4 deaths in 1917. Parboiled rice has been substituted for "kachang" during the year. The number of admissions for the years 1912 to 1918 is as follows:— sixteen for 1912, 23 for 1913, 17 for 1914, 9 for 1915, 21 for 1916, 42 for 1917, and 5 for 1918.

Venereal Diseases.—Eight cases were admitted to Hospital during this year as against 17 in 1917. Only one case was treated as out-patient as against 2 in 1917, and 25 in 1916.

Pulmonary Tuberculosis.—There were 6 admissions with 2 deaths during this year as against 4 with 2 deaths in 1917, and 9 with 9 deaths in 1916. Twenty-six of the total number of deaths were due to this disease as against 38 in 1917. The percentage of deaths was 13.13 of the total death-rate as against 14.39 in 1917.

Dysentery.—There were 2 admissions with no deaths during this year as against 9 with 3 deaths in 1917.

Influenza.—This universal scourge first became definitely evident here during the third week in October. About 50 per cent of the town and suburban population were attacked, but the epidemic was of a mild type and only 5 deaths occurred in these districts from the disease; the epidemic spread up to the country districts at the end of November, and 26 deaths were attributed to this disease up to the end of the year in these districts. The Kadayans, they are suspicious of European medical advice and intolerant of European medicines. Notices were issued regarding the disease but met with no response from the Kadayans.

There were 17 admissions to the Hospital with no deaths, and 71 cases were treated as out-patients.

Port Health Work.—No ships were infected during the year. Three Bills of Health were issued.

Police Force.—Almost all the units were attacked by Influenza.

	1917.	1918.
Number of admissions to hospital ...	23	47
„ „ out-patients ...	282	204
„ „ admissions for Malaria ...	10	21
„ „ out-patients for Malaria ...	58	59

Prisoners.—Very few of the inmates of the Gaol were unattacked by Influenza.

	1917.	1918.
Number admitted to hospital ...	19	18
„ of out-patients ...	48	63
„ admitted for Malaria ...	4	1

Out-patients.—Seven hundred and six cases were treated as out-patients as against 639 in 1917. Nationalities are as follows:—Seven Europeans, 19 Eurasians, 377 Malays, 93 Chinese, 192 Indians, 18 other nationalities. The chief diseases treated were Malaria, Influenza, Bronchitis, Constipation, Injuries, Round-worm and Scabies.

Vaccination.—One hundred and twenty-two children were vaccinated during this year as against 127 in 1917. Of these, 121 were successful and 1 failed.

Ages.—Three to 4 months 4, 4 months to 1 year 78, 1 year and above 40.

Meteorological.—The North-east Monsoon blew from January to the end of March, when the South-west Monsoon began and continued to the end of December. The total rainfall during the year was 3,128 millimetres or 123.14 inches. The rainfall for the years 1916 to 1918 is as follows:—

1916	...	...	...	172.72 inches.
1917	...	...	...	185.82 "
1918	...	...	...	123.14 "

The wettest month was February when 786.5 millimetres or 30.96 inches fell. This month has been in the past years the driest month of the year. The North-east Monsoon is always the dry season in Labuan, but the conditions were reversed during the year under review, which was quite exceptional. The greatest rainfall on any day of the year was 315 millimetres or 12.4 inches, on the 18th February. The weather on the whole was abnormally dry during the last nine months.

The maximum temperature in shade was 92.0 degrees on 13th and 25th August.

„ minimum	„	69.0	„	27th January.
„ maximum mean temperature was		86.5	„	
„ minimum	„	76.0	„	
„ mean temperature was	...	81.2	„	

In spite of the Influenza epidemic this year our total mortality was less in 1918 than it was in 1917, possibly helping to bear out my impression that the large mortality in 1917 was partly due to the abnormal number of rainy days during that year and consequent loss of sunshine.

Hospital.—The total number of admissions during this year was 164 as against 195 in 1917. Of these, 1 was Eurasian, 74 Chinese, 51 Malays, 30 Indians, 8 Other Nationalities. There were 11 deaths giving a percentage mortality of 6.58 as against 8.58 in 1917. The percentage mortality excluding 2 deaths within 24 hours of admission is 5.39. The chief diseases treated were Malaria 47 with 7 deaths, Influenza 17 with no deaths, Pulmonary Tuberculosis 6 with 2 deaths, Venereal Diseases 9 with no deaths, and Beri-beri 6 with no deaths.

Operations.—Only a few minor operations were done under local anaesthesia.

Staff.—The staff remained the same as in 1917, except that Dr. McVAIL relieved the Medical Officer from the 12th November to the 24th November, the Medical Officer taking sick leave during that period.

