

The Straits Settlements medical report.

Contributors

Straits Settlements. Medical Department.

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The Straits Settlements Medical Report for the year 1923.

ERRATA.

Page 3.

Table of estimated population, etc.:—

Dindings.—Estimated population for 1923.

For "130,283" read "13,283".

Malacca.—Estimated population for 1922.

For "17,160" read "157,160".



STRAITS SETTLEMENTS.

The Straits Settlements Medical Report for the year 1923.

I.—ADMINISTRATIVE.

STAFF.

1. The European staff number 85, distributed as follows:—

GENERAL.

Principal Civil Medical Officer, Straits Settlements.

MEDICAL.

One Financial Officer, Medical Department.

Chief Medical Officer, Singapore.

One Financial Officer, Hospitals, Singapore.

Chief Medical Officer, Penang.

Chief Medical Officer, Malacca.

Senior Surgeon, Singapore.

Nine Medical Officers, Singapore.

Six Medical Officers, Penang.

One Medical Officer, Malacca.

PATHOLOGICAL BRANCH.

One Pathologist, Singapore.

One Pathologist, Penang.

COLLEGE OF MEDICINE, SINGAPORE.

Principal.

Professor of Physiology.

Professor of Anatomy.

Professor of Medicine.

Professor of Surgery.

Professor of Midwifery and Gynæcology.

LUNATIC ASYLUM, SINGAPORE.

Medical Superintendent.

Three European Attendants.

One Matron, Class II.

ANALYST'S DEPARTMENT, STRAITS SETTLEMENTS.

Analyst, Singapore.

Deputy Analyst, Penang.

Two Assistant Analysts, Singapore.

HEALTH BRANCH, STRAITS SETTLEMENTS.

Chief Health Officer, Singapore.

Senior Health Officer, Penang.

Four Health Officers, Singapore.

One Health Officer, Malacca.

QUARANTINE STATION.

Lay Superintendent, Singapore.

Lay Superintendent, Penang.

One Sister, Singapore.

HOSPITALS AND DISPENSARIES.

Two Matrons, Class I. (One Singapore and one Penang).
 Four Matrons, Class II.
 Two Assistant Matrons.
 Fifteen Sisters, Singapore.
 Nine Sisters, Penang.
 One Sister, Malacca.
 Two European Attendants and one Financial Assistant.

2. On the departure on leave of Dr. A. L. HOOPS, Principal Civil Medical Officer, Straits Settlements, Dr. J. GRAY, Chief Medical Officer, Singapore, was appointed in his place as Acting Principal Civil Medical Officer, Straits Settlements, Dr. J. S. WEBSTER, Professor of Medicine, College of Medicine, Singapore, as Acting Chief Medical Officer, Singapore, Dr. R. B. MACGREGOR, Medical Officer, Tan Tock Seng's Hospital, as Acting Professor of Medicine, and Dr. E. D. LINDOW as Medical Officer, Tan Tock Seng's Hospital, with effect from 6th December, 1923.

On the retirement of Dr. W. H. FRY, Chief Medical Officer, Penang, from the service on 10th November, 1923, Dr. W. A. TAYLOR, Chief Medical Officer, Malacca, was substantively appointed in the post as from that date and Dr. W. H. FURNIVALL, Medical Officer, Province Wellesley was detailed to act as Chief Medical Officer, Malacca.

On the departure on leave of Dr. G. A. FINLAYSON, Government Pathologist, Singapore, Dr. J. C. TULL, Government Pathologist, Penang, was sent to Singapore to act as Pathologist, Singapore and Dr. A. N. KINGSBURY, a new Medical Officer from Home with bacteriological experience, acted as Pathologist, Penang, from 30th August, 1923.

3. The following Officers were seconded and exchanged respectively:—

- (a) Dr. R. B. HAWES to Kedah on 16th June, 1923.
- (b) Dr. R. D. FITZGERALD to Johore as Principal Medical Officer, Johore, 31st March, 1923.
- (c) Dr. W. M. CHAMBERS of the Federated Malay States was exchanged for Dr. H. P. HODGE to the Federated Malay States.
- (d) Dr. E. V. LUPPRIAN, was seconded as Medical Officer to Negapatam on 11th July, 1923.

4. The following officers were appointed during the year:—

Name.	Appointment.	Date of	
		Embarkation.	Arrival.
E. R. STONE	Medical Superintendent, Lunatic Asylum	—	13-4-23
E. D. LINDOW	Medical Officer	27-4-1923	26-5-23
H. P. HODGE	"	11-5-1923	10-6-23
A. N. KINGSBURY	"	3-8-1923	30-8-23
R. W. C. KELLY	"	27-4-1923	4-7-23
F. S. T. THOMAS	"	13-4-1923	4-7-23
E. V. LUPPRIAN	"	27-5-1923	17-6-23

5. The following officers resigned during the year:—

Name.	Appointment.	Date.
W. W. MARTIN	Port Health Officer, Penang	21-8-1923
*F. B. MACDONALD	Anti-mosquito Officer	23-5-1923
*C. L. STEWART	Health Officer, Singapore	22-12-1923
F. S. T. THOMAS	Medical Officer, Singapore	—

* Completion of Agreement.

FINANCIAL.

The Revenue collected in the Straits Settlements totalled \$962,336.13 and the Expenditure \$889,396.43, being distributed as follows:—

			Revenue.	Expenditure.
			\$ c.	\$ c.
Singapore	...	...	500,406 98	503,426 41
Penang	...	...	380,112 93	286,601 55
Malacca	...	...	80,735 37	82,515 36
Labuan	...	...	1,080 85	16,853 11
Total	...	...	\$962,336 13	\$889,396 43

II.—PUBLIC HEALTH.

(a) General Remarks:—

1. The following table gives the estimated population, with birth and death-rates for years 1922 and 1923—all nationalities:—

SETTLEMENT OR PROVINCE.	POPULATION.		Births.		Deaths.		Birth Ratio per mille.		Death Ratio per mille.	
	Estima- ted 1922.	Estima- ted 1923.								
			1922.	1923.	1922.	1923.	1922.	1923.	1922.	1923.
Singapore	435,614	457,571	12,458	12,876	13,616	12,153	28.60	28.14	31.26	26.56
Labuan	5,844	5,972	211	229	201	171	36.11	38.34	34.39	28.63
Penang	164,495	166,880	5,177	5,464	5,293	5,126	31.47	32.74	32.11	30.72
Province Wellesley	130,478	130,618	4,533	4,039	4,251	3,914	34.74	30.92	32.58	29.97
Dindings	12,546	130,283	352	386	315	290	28.06	29.06	25.10	21.83
Malacca	17,160	160,836	4,992	5,462	4,128	4,341	31.76	33.95	26.26	26.98
Total	906,137	935,210	27,723	28,456	27,804	25,995	30.59	30.43	30.68	27.80

2. *Deaths.*—The deaths from all causes registered in 1923 were 25,995 as against 27,804 in 1922, giving a crude death-rate of 27.80 per mille of population which is the lowest death-rate on record.

INFANTILE MORTALITY.

3. The infantile mortality rate was 200.73 per mille as against 195.22 in 1922. The increase for the last two years results from the high death-rate in Malacca, which exceeds that for any Settlement in the Colony, 1,413 deaths amongst 5,642 births or 258.69 per thousand. It is to be expected that this rate will decrease, when the Malay midwives at present undergoing their training in the hospitals are sent out into the districts. These figures are exclusive of infants born elsewhere than in the Colony.

(i) General Diseases:—

BERI-BERI.

4. Beri-beri was responsible for 904 deaths as against 1,388 deaths in 1922, 1,299 deaths in 1921 and 1,025 deaths in 1920. There were 137 deaths amongst the 962 cases of Beri-beri treated in hospitals.

TUBERCULOSIS.

5. There were 2,683 deaths from Tuberculosis and Phthisis as against 2,966 in the previous year and 3,258 in 1921. One thousand seven hundred and fourteen cases were admitted to hospitals with 789 deaths.

DYSENTERY.

6. Dysentery accounted for 839 deaths as against 1,085 deaths in 1922. It is not possible to classify all deaths under this head into Amœbic or Bacillary as many of the deaths elsewhere than in hospitals are not seen by a medical man. One thousand five hundred and sixty-six cases were treated in hospitals with 454 deaths.

MALARIA.

7. The number of deaths recorded from malaria was 3,430 as compared with 3,877 deaths in the previous year and 4,703 in the year 1921. Five thousand two hundred and ninety-seven cases were treated in hospitals of which 376 ended fatally, as against 6,989 with 567 deaths in 1922.

ANKYLOSTOMIASIS.

8. The total numbers of Ankylostomiasis cases treated and of deaths therefrom in the hospitals of the Colony for the last 5 years are:—

<i>Year.</i>	<i>Remained from previous year.</i>		<i>Admitted during the year.</i>	<i>Total treated.</i>	<i>Deaths.</i>
—	—	—	—	—	—
1919	...	78	1,110	1,188	241
1920	...	69	1,432	1,504	312
1921	...	100	1,844	1,944	278
1922	...	91	2,064	2,155	163
1923	...	109	2,399	2,508	124

LEPROSY.

9. The treatment of leprosy by E. C. C. O. has been continued. Several new forms of treatment are being tried since the meeting of the Far Eastern Association of Tropical Medicine, but the time that they have been given is too short to justify any analysis of the results.

Full reports from Officers in charge of Leper Asylum are contained in Appendix A.

(ii) Communicable Diseases:—

ZYMOTIC DISEASES.

10. The following table gives the number of cases of Zymotic Diseases occurring in the Colony during 1922 and 1923, excluding imported cases:—

SETTLEMENT.	PLAGUE.				CHOLERA.				SMALL-POX.				CEREBRO-SPINAL MENINGITIS.			
	1922.		1923.		1922.		1923.		1922.		1923.		1922.		1923.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Singapore	39	39	53	49	1	1	...	...	260	68	3	1	32	26	10	6
Penang	...	...	...	...	...	...	...	...	3	...	...	...	47	13	3	3
Province Wellesley	...	...	...	...	2	1	...	...	24	8	9	1	3	3	1	...
Dindings	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malacca	...	...	6	6	...	...	...	...	43	4	24	1	3	3	6	5
Labuan	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	39	39	59	55	3	2	...	...	330	80	36	3	85	45	20	14

DIPHTHERIA.

Diphtheria accounted for 10 deaths. Eight cases were treated in hospitals, of these 3 died.

ENTERIC FEVER.

12. There were 52 deaths from Enteric Fever as against 53 in 1922. Ninety-two cases were treated in hospitals with 39 deaths as against 45 deaths in 1922.

PNEUMONIA AND INFLUENZA.

13. Pneumonia claimed 1,710 deaths as against 1,608 and Influenza 162 as against 234 in the previous year. Many deaths from Influenza are doubtless registered as fever not specified. There were 967 cases in hospitals with 85 deaths.

VENEREAL DISEASES.

14.—		1922.	1923.
In-patients		4,421	4,374
Out-patients		3,448	6,476
		7,869	10,850

The great increase in the numbers attending at the out-door dispensaries for venereal diseases is very satisfactory as showing that the Asiatic population realises the value of modern treatment on up-to-date lines.

MISCELLANEOUS.

15. Forty Medical Practitioners were registered during the year. The total on the Register numbers 737. Seventy-nine licences were issued to Chemists and Druggists, and 41 licences to Dentists under the Deleterious Drugs Ordinance; 94 licences were issued under the Poisons Ordinance. The Hospitals Board ambulance in Singapore attended 519 calls for conveying cases to hospitals.

The following gentlemen were appointed members of the Hospitals Board for the year, excluding Government ex-officio members:—

Dr. P. S. HUNTER.	Dr. CHEONG CHEE HAI.
Mr. C. V. BAILEY.	Mr. H. B. BAKER.
Dr. E. A. ELDER.	Dr. A. S. MCKERN.

(b) European Officials:—

Table showing the sick, invaliding and deaths of European Officials of all ranks:—

	1922.	1923.
(1) Total number of Officials on the Establishment	538	567
(2) Average number resident in the Colony	450	487
(3) Total number on sick list	213	215
(4) Total number of days on sick list	1,786	1,991
(5) Total number invalided	2	1
(6) Total deaths	5	3
(7) Total deaths in the Colony	4	3
(8) Average daily number on the sick list	58	59
(9) Average number of days on sick list	489	545
(10) Percentage of deaths to number resident	1.11	.62

(c) Asiatic Officials:—

The figures are not available.

(d) General European population:—

Population.		Births.		Deaths.		Birth-rate per mille.		Death-rate per mille.	
1922.	1923.	1922.	1923.	1922.	1923.	1922.	1923.	1922.	1923.
8,403	8,354	240	297	76	94	18'16	33'01	9'04	10'05

(e) Asiatic population:—

Population.		Births.		Deaths.		Birth-rate per mille.		Death-rate per mille.	
1922.	1923.	1922.	1923.	1922.	1923.	1922.	1923.	1922.	1923.
897,734	926,856	27,483	28,159	27,728	25,901	30'61	30'81	30'88	27'94

III.—HEALTH BRANCH.

The extension of anti-malarial work in the rural districts of Singapore, continues steadily with the resulting improvement in the health of the population. In Malacca health conditions have been satisfactory and in Province Wellesley and the rural districts of Penang, the death-rate is lower than last year.

Details of the work in each Settlement are given in Appendices B and C.

IV.—METEOROLOGY.

Returns for the various Settlements are shown in Appendix D.

V.—HOSPITALS AND DISPENSARIES.

1. Total in-patients treated and mortality in all Hospitals of the Colony for the past six years:—

Year.	Number treated.			Number of deaths.			Percentage of deaths to total treated.			
	E'pean.	Asiatic.	Total.	E'pean.	Asiatic.	Total.	E'pean.	Asiatic.	Total.	
1918	...	3,197	39,836	43,033	143	5,698	5,841	4'47	14'30	13'57
1919	...	2,944	37,812	40,756	139	4,602	4,741	4'72	12'17	11'69
1920	...	3,454	39,343	42,797	165	4,120	4,285	4'77	10'47	10'01
1921	...	2,184	41,309	43,493	74	4,311	4,385	3'39	10'44	10'09
1922	...	2,517	39,682	42,199	105	4,031	4,136	4'17	10'16	9'80
1923	...	2,858	38,835	41,693	92	3,835	3,927	3'22	9'87	9'42

Details for the principal hospitals for the year 1923 are given in Appendix E.

ALL HOSPITALS.

2. The total number of in-patients treated and the total deaths in the Hospitals of the Colony for some of the more important diseases are shown in the sub-joined table with the corresponding figures for the preceding years:—

Diseases.	1919.		1920.		1921.		1922.		1923.	
	Asiatic.	E'pean.	Asiatic.	E'pean.	Asiatic.	E'pean.	Asiatic.	E'pean.	Asiatic.	E'pean.
Malarial Fever	6,446	472	7,539	548	7,681	567	6,989	394	5,297	376
Dysentery	1,708	632	1,451	462	1,452	490	1,497	605	1,566	454
Diarrhoea and Enteritis	420	35	460	23	451	23	390	9	485	22
Beri-beri	1,556	236	363	43	684	184	1,175	168	962	28
Phthisis and Tuberculosis	1,442	686	1,450	698	1,500	717	1,552	722	1,714	789
Enteric Fever	142	63	167	61	174	86	116	45	92	39
Ulcers	3,196	1	4,027	5	4,169	3	3,552	9	2,577	2
Venereal Diseases	3,451	77	3,836	52	4,319	44	4,421	140	4,194	56
Ankylostomiasis	1,183	241	1,501	312	1,944	278	2,155	163	2,508	124

Detailed returns are given in Appendix F.

OUT-PATIENT DISPENSARIES.

3. Out-patients treated at the various out-patient dispensaries throughout the Colony were:—

<i>Year.</i>		<i>Total patients.</i>	<i>Total attendances.</i>
—		—	—
1923	...	74,343	139,656
1922	...	58,005	99,488
1921	...	43,070	—

Three more out-door dispensaries in Singapore were started in 1923 in Joo Chiat Road, Paya Lebar and Pasir Panjang. The attendances are good.

Details for the out-door dispensaries in the Colony are given in Appendix G.

4. Total patients treated and mortality in each Hospital of the Colony for 1923:—

<i>Hospital.</i>	<i>No. of Patients.</i>	<i>No. of Deaths.</i>	<i>Nationality of death.</i>		
			<i>Europeans.</i>	<i>Eurasians.</i>	<i>Asiatic.</i>
General Hospital ...	8,688	422	24	10	388
Tan Tock Seng's Hospital ...	9,596	1,293	1	1	1,291
Lunatic Asylum ...	804	94	2	—	92
Kandang Kerbau Women's Hospital	895	105	—	2	103
PENANG.					
Penang and Dindings Hospitals ...	10,959	1,109	2	2	1,105
Province Wellesley Hospitals ...	3,858	325	—	—	325
MALACCA.					
Jasin and Durian Daun Hospitals ...	4,221	441	3	5	375
LABUAN.					
Civil Hospital ...	192	15	—	—	15

BUILDINGS, ETC.

5. The new Nurses Home, General Hospital, Singapore, is completed and occupied, it is an excellent building. The building of the new General Hospital, Singapore, proceeds rapidly and before the end of 1924, one block of the 1st and 2nd class male wards, one of the 2nd and 3rd class female wards and two of the 3rd class male wards should be in use.

The additions to the General Hospital, Penang are almost completed.

VI.—PRISONS.

Details are given in Appendix H.

VII.—SCIENTIFIC.

(a) *Appendix I.*—Treatment for Leprosy at the Leper Asylum, Pulau Jerejak.

(b) *Appendix J.*—General investigations carried out at Penang.

(c) *Appendix K.*—Note on the Levaditi test for syphilis.

(d) *Appendix L.*—Report on a case of Cutaneous Gonococcal infection.

VIII.—MISCELLANEOUS.

- (a) *Appendix M.*—Report on the Lunatic Asylum, Singapore.
 (b) *Appendix N.*—Report on the Government Analyst's Department.
 (c) *Appendix O.*—Report on the Pathological Department.
 (d) *Appendix P.*—Report on the King Edward VII College of Medicine, Singapore.
 (e) *Appendix Q.*—Account of the Fifth Congress of the Far Eastern Association of Tropical Medicine.

J. GRAY, M.D.,

*Acting Principal Civil Medical Officer,
 Straits Settlements.*

APPENDIX A.

LEPER ASYLUM, SINGAPORE.

REPORT BY E. D. LINDOW, M.R.C.S., L.R.C.P.

1. *Male Camp.*—McNair Road:—

Remained on 31st December, 1922	...	...	32
Admitted during 1923	...	...	90
			122
Discharged	...	...	3
Transferred to Pulau Jerejak	...	...	55
Absconded	...	...	10
Died	...	...	7
Remaining on 31st December, 1923	...	...	47
			122

The immediate causes of death were:—

Ankylostomiasis	...	...	1
Pulmonary Tuberculosis	...	...	2
Sapraemia from septic ulceration	...	...	3
Asphyxia from hanging, suicidal	...	...	1
			7

2. *Female Camp.*—Temporarily at Kandang Kerbau Hospital:—

Remained on 31st December, 1922	...	...	42
Admitted during 1923	...	...	4
			46

Discharged	...	...	...	...	—
Transferred	...	...	...	...	—
Absconded	...	...	...	...	—
Died	...	...	...	...	7
Remaining on 31st December, 1923	...	...	...	...	39
					—
					46
					—

The immediate causes of death were:—

Ankylostomiasis	...	...	...	...	1
Pulmonary Tuberculosis	...	...	...	...	2
Sapraemia from septic ulceration	...	...	...	...	2
Acute parenchymatus nephritis	...	...	...	...	1
Broncho pneumonia	...	...	...	...	1
					—
					7
					—

3. *Health of Camps.*—Generally speaking the health of the camps has been fairly satisfactory. The health of the male camp has definitely improved, but that of the female camp remains stationary and new accommodation is urgently needed.

4. *Treatment.*—Except for slight alterations the same lines of modern treatment were adopted as in the previous year. Injections were given twice weekly at first, and if no ill effects were noticed they were increased to three times weekly, starting early in February. The majority of patients tolerated the change very well, until the end of July, when resulting reactions increased more frequently and more patients were attacked. This was probably due to the cumulative action of the drug, and injections were reverted to twice weekly. Injections of Sodium Hydncarpate were given in both camps, and given intravenously as a routine, but when substituted for E. C. C. O. it was given subcutaneously, as those patients who were receiving E. C. C. O. were mainly those in whom it was difficult to secure good veins for intravenous injections. In October, the dosage of Sodium Hydncarpate powders were increased from 2-5 grains, but owing to certain cases showing intolerance of the increase, those patients were given 3 grains. E. C. C. O. on the other hand was given intramuscularly, and a few cases were selected for treatment by the infiltration method, directly into the nodules themselves. Partly owing to the requests of the patients themselves and partly owing to the severe reaction seen last year after intravenous injections of E. C. C. O., this method was discontinued in 1923. During the period between February and August, when the intensive degree of treatment was adopted, resulting reactions were fairly common, with varying degrees of intensity. The mildest form was characterised by slight fever with generalised pains. A certain number of the reactionary cases developed a tender erythematous rash, usually conspicuous on the legs.

The worst case was seen in a woman in whom the rash extended all over the face and limbs. Bullæ and vesicles containing clear fluid then formed and the tenderness was so extreme that the patient was in great distress. In all these reactionary cases symptomatic and local treatment together with a temporary cessation of injections usually sufficed.

Return of injections administered:—

			Male.	Female.
			—	—
Sodium Hydnocarpate	...	...	3,315	1,860
E. C. C. O.	...	...	867	1,867
Oscol Stibium	...	...	77	2
Sodium Bismuth Tartrate	...	...	21	—
Neosalvarsan	...	...	8	—
			4,288	3,720

Results of treatment.—The following table gives an idea of the results obtained in 1923:—

			Male.	Female.
			—	—
Cases cured	...	...	1	—
Cases showing definite improvement	...	...	4	2
Cases showing slight improvement	...	...	23	11
Cases getting worse	...	...	3	7
Deaths	...	...	7	7

The following comparisons of those patients mentioned in past reports may be of interest:—

- (1) F. SCOTT.—Admitted January, 1918, showed an improved condition at end of 1922. During 1923, received 104 injections Sodium hydnocarpate and 12 of oscol stibium. Very prone to reactions, smears still positive. Eyesight becoming impaired by frequent conjunctivitis, iritis, and spring catarrh. No improvement during the year.
- (2) CHUA BOON CHONG.—Admitted April, 1922. Received 64 Sodium hydnocarpate, 37 E. C. C. O. in 1923. Smears positive ulcers reappearing, anaesthesia increasing and now present in both upper and lower limbs from elbows and knees downwards. Cases has taken a retrograde course and is getting worse.
- (3) LIM TUAH.—Was apparently cured at end of 1922, received 10 injections of E. C. C. O., and discharged as cured in February, 1923. Has shown no signs of recurrence.
- (4) LIM SIEW NGO.—Admitted April, 1921. Received 47 injections of sodium hydnocarpate and 51 of E. C. C. O. in 1923. Condition at end of 1922—smears negative. Pinkish tinge over both cheeks. Small perforating ulcers both feet.

Condition at end of 1923—smears negative. Ulcer of left foot healed, macular patches on body and limbs. Tinge deeper, nostrils thickened anaesthesia on posterior aspect of left forearm.

Conclusion.—Definitely improved since admission although worse than in 1922.

- (5) CHUA CHIA HOO.—Age 7, admitted April, 1921. Received during 1923—53 sodium hydnocarpate, 53 E. C. C. O. Condition at end of 1922. Smears negative—skin of face glistening pinkish tinge of cheeks. Anaesthesia found on dorsum of right hand from wrist downwards, and posterior aspects of left forearm and hand. Smear from left forearm positive.

Conclusion.—Definitely improved since admission although worse than in 1922.

- (6) **SELIMA**.—Admitted June, 1919. Received during 1923, 47 injections of sodium hydnocarpate and 52 E. C. C. O. Condition at end of 1922. Smears positive. Thickened and nodular appearance of hands and slight thickening of skin of face. Condition at end of 1923. Nodular patches, slightly raised on right cheek and neck. Ears nodular, and nodules on body and limbs. This case is unfortunately getting steadily worse.

- (7) The case showing most improvement is:—

LAW AH KUM.—Admitted November, 1922. Received in 1923—50 injections of sodium hydnocarpate, 52 E. C. C. O. Condition on admission. Macular rash on posterior aspects of forearms and dorsum of feet. Skin over these areas thickened and anæsthetic. Tremors of legs and hands. Power of locomotion poor. Condition January, 1923. Rash on feet disappeared, skin still thickened and insensitive. Rash and anæsthesia of forearms both present. Tremors less and muscular power better. Condition at end of 1923. Smears negative. Rash completely subsided. No tremors, muscular power good. Anæsthesia confined only to lower limbs, from lower third of legs downwards.

The following summary drawn up from patients remaining at the end of 1923, indicates a fair standard of the results obtained from treatment:—

	<i>Under six months treatment.</i>		<i>Six to twelve months treatment.</i>		<i>Twelve to twenty-four months treatment.</i>		<i>Over two years treatment.</i>	
	M.	F.	M.	F.	M.	F.	M.	F.
Cure ...	—	—	1	—	—	—	—	—
Definite improvement ...	3	—	2	—	1	1	—	3
Fair or slight improvement ...	8	1	8	1	3	1	3	11
No improvement ...	13	—	1	1	—	2	1	14
Condition getting worse ...	—	—	2	—	1	—	—	5
Deaths ...	7	2	—	—	—	—	—	5

FEMALE LEPER WARD, PENANG.

REPORT BY W. A. TAYLOR, M.B., CH.B., *Chief Medical Officer.*

Forty patients remained in Hospital at the end of 1922—12 being Perak Lepers and 28 Colonial Lepers.

2. During the year, 13 female lepers were admitted—from Perak 6 and 7 from the Colony—making a total of 53 cases treated in all.

3. There were 10 deaths during the year—5 Perak Lepers and 5 Colonial Lepers—with a death-rate of 18·86.

4. The average daily number of sick for the year was 38·65.

5. During the year 32 lepers were under treatment with injections of E. C. C. O. some receiving injections intramuscularly and others intravenously. The latter route for injections could not be continued for long owing to poor condition of the veins.

Towards the latter part of the year a course of injections of Thymol in Cod Liver Oil was begun.

In addition to above treatment Chaulmoogra Oil was given internally in gelatine capsules.

6. *Buildings and Grounds*.—Minor repairs and whitewashing to all buildings were carried out during the year.

A temporary attap-shed with cooking places was erected during the latter half of the year—for use by those lepers who preferred cooking their own food.

LEPER ASYLUM, PULAU JEREJAK.

1. *Statistics.*—

Remained on 31st December, 1922—

Colonial	...	...	...	...	208
Perak	...	...	...	...	167
Selangor	...	...	...	...	86
Kedah	...	...	...	...	37
					— 498

Admitted during 1923—

Colonial	...	...	...	...	99
Perak	...	...	...	...	54
Selangor	...	...	...	...	34
Kedah	...	...	...	...	3
					— 190

Total inmates ... 688

Discharged during 1923—

Colonial	...	...	...	...	1
----------	-----	-----	-----	-----	---

Absconded during 1923—

Perak	...	...	...	...	3
Selangor	...	...	...	...	4
Kedah	...	...	...	...	1
					— 8

Transferred during 1923—

Nil.

Deaths during 1923—

Colonial	...	...	...	...	58
Perak	...	...	...	...	45
Selangor	...	...	...	...	25
Kedah	...	...	...	...	12
					— 140

Remaining on 31st December, 1923—

Colonial	...	...	...	...	248
Perak	...	...	...	...	172
Selangor	...	...	...	...	91
Kedah	...	...	...	...	28
					— 539

Staff.—The health of the staff has been good. Dr. F. R. SAYERS was visiting Medical Officer.

3. *Inmates.*—The health has been good.

4. *Treatment for Leprosy.*—Four hundred and sixteen cases have been under special treatment. One case was discharged, apparently cured and one case is awaiting discharge apparently cured. Ten others have shown definite improvement. Better results would be obtained if the cases admitted were not so chronic in nature. I append a Table (D) showing the duration of disease previous to admission.

5. The Tables appended are:—

- (a) Giving the number of admissions, total number of deaths, and daily average for 1923.
 (b) Giving the nationality of inmates.
 (c) Showing the occupation of the inmates previous to admission.
 (d) Showing the duration of disease previous to admission.

TABLE A.

Showing the number of admissions, total number of deaths, the total number of inmates and the daily average for the year 1923.

Year.	Remained from previous year.	Admissions.				Total.	Deaths.	Percent- age of Deaths.	Daily average patients.
		Colonial.	Perak.	Selangor.	Kedah.				
1923.	498	99	54	34	3	688	140	20'34%	517'66

TABLE B.

Showing the nationalities of inmates for 1923.

Nationality.	Colonial.	Perak.	Selangor.	Kedah.	Total.
Bengalee ...	2	1	...	...	3
Cantonese ...	88	98	40	4	230
Eurasian ...	8	1	...	...	9
Phillipino ...	1	...	...	...	1
Hockchew ...	...	1	1	...	2
Hokkien ...	55	26	7	4	102
Hooicchew ...	3	1	...	...	4
Hylam ...	27	3	5	4	39
Hylockhong ...	1	...	...	...	1
Kheh ...	38	46	47	3	134
Tamil (Islam) ...	4	...	...	...	4
Malay ...	2	...	1	...	3
Tamil (Hindu) ...	29	37	6	14	86
Teochew ...	49	7	3	11	70
Total ...	307	221	120	40	688

TABLE C.

Showing the occupations of inmates for 1923.

Occupations.	Colonial.	Perak.	Selangor.	Kedah.	Total.
Attendant ...	...	...	1	...	1
Barber ...	3	...	1	...	4
Beggar ...	2	...	...	...	2
Blacksmith ...	5	...	2	1	8
Boatman ...	4	...	...	...	4
Boy ...	2	...	...	...	2
Butcher ...	1	...	1	...	2
Cake-seller ...	2	1	1	...	4
Carpenter ...	18	7	8	...	33
Cart-driver ...	3	3	...	...	6
Cart-puller ...	2	...	...	...	2
Cobbler ...	...	1	...	...	1
Conductor ...	2	...	...	...	2
Contractor ...	...	1	...	...	1
Cook ...	5	1	1	...	7
Detective ...	1	...	...	...	1
Dhoby ...	2	...	...	...	2
Dresser ...	1	...	...	...	1
Engine-driver ...	1	1	...	...	2
Estate cooly ...	...	10	3	7	20
Fireman ...	1	...	...	...	1
Fisherman ...	4	1	...	...	5
Fitter ...	2	...	1	...	3
Gardener ...	6	15	1	1	23
General cooly ...	129	57	20	19	225
Goldsmith ...	1	1	1	...	3
Grass-cutter ...	4	3	2	...	9
Grave-digger ...	1	...	...	...	1
Hawker ...	14	8	4	...	26
Mason ...	7	2	8	1	18
Mining cooly ...	2	62	32	2	98
Motor-car driver ...	2	...	1	...	3
Musician ...	1	...	...	...	1
Nil ...	39	10	4	5	58
Painter ...	7	1	...	...	8
Rickshaw puller ...	2	...	1	...	3
Rubber Tapper ...	13	19	14	1	47
Sailor ...	1	...	...	...	1
School boy ...	3	2	...	...	5
Shoe-maker ...	1	1	...	...	2
Shop-keeper ...	2	2	1	1	6
Stone-breaker ...	1	...	1	...	2
Syce ...	1	...	...	...	1
Tailor ...	3	...	...	...	3
Tindal ...	1	1	...	...	2
Toty ...	...	1	...	...	1
Vegetable planter ...	3	2	7	...	12
Watchman ...	1	1	...	...	2
Wood-cutter ...	1	7	4	2	14
Total ...	307	221	120	40	688

TABLE D.

Duration of disease previous to admission, Leper Asylum, Pulau Jerejak.

—				1922.	1923.
1 Year	...	...	...	4	5
2 Years	...	...	...	8	5
3 "	...	...	...	71	53
4 "	...	...	...	65	34
5 "	...	...	...	39	38
6 "	...	...	...	15	32
7 "	...	...	...	20	5
8 "	...	...	...	12	5
9 "	...	...	...	1	3
10 "	...	...	...	14	10
Total No Admissions				249	190

APPENDIX B.

HEALTH BRANCH.

I.—SINGAPORE.

REPORT BY FREDERICK R. SAYERS, M.D., D.P.H., *Acting Chief Health Officer, Singapore.*

(i)—STAFF.

Owing to various causes many changes were made in the staff of the Health Branch, Singapore, with the result that there was an inevitable diminution in the work of the Branch and in its efficiency. Of 5 Health Officers, 2 Assistant Health Officers and 6 Sanitary Inspectors who held certain position in February, but 1 Health Officer, 1 Assistant Health Officer and 1 Sanitary Inspector remained in the same position at the end of the year.

(ii)—RESUMÉ OF PORT AND QUARANTINE WORK, 1923.

BY W. D'CRUZ, L.M.S., SINGAPORE, *Acting Health Officer (Port).*

Shipping.—

Tonnage entering Singapore	...	...	10,254,150
Visits to Ships	...	...	1,360
Crew examined	...	...	108,829
Passengers examined	...	...	250,754
Ships infected	...	...	10
Pilgrim ships for Jeddah examined	...	...	21
Outgoing pilgrims examined on board vessels	...	...	9,202
Number of Chinese Immigrant ships	...	...	202
Number of Chinese Immigrants examined	...	...	159,019
Water Boats examined	...	...	48
Undertakings issued to cabin passengers	...	...	85
Corpses inspected in harbour	...	...	49
Fumigations by disinfecting launches	...	...	663

Quarantine Station.—

Passengers sent to Quarantine Station	...	7,374
Greatest number of passengers admitted to Quarantine Station in one day	...	2,542
Total sick treated in Quarantine Station Hospital		131
Deaths on Quarantine Station	...	10
Death-rate amongst hospital cases	...	6.1%
Vaccinations on Quarantine Station	...	4,264
Water distilled on Quarantine Station	...	Nil.
Singapore water used on Quarantine Station	...	1,078,080 gallons.

(iii)—RESUMÉ OF RURAL WORK, 1923.

By P. C. FERNANDEZ, L.M.S., SINGAPORE, *Acting Health Officer (Rural)*.

	District C. Pasir Panjang.	District D. Bukit Timah.	District E. Seletar.	District F. Paya Lebar.	District G. Siglap	District H. Marine.	Totals or Means.
DATA.							
Estimated Population	8,162	10,373	8,704	15,329	20,386	9,904	72,858
" No. of Houses	1,748	836	721	3,462	3,356	...	10,123
" inhabitants per house	4.6	12.4	12.0	4.4	6.0	...	...
No. of Police Stations	2	3	1	2	4	...	12
" Malay Vernacular Schools	1	...	...	...	4	...	5
" Markets	...	...	...	...	1	...	1
" Incinerators	5	3	3	5	9	...	25
Registered Dairies and Milk Sellers	...	1	...	4	17	...	22
" Piggeries	132	20	32	86	161	...	431
WORK DONE.							
No. of Dog Licensed 1923	262	364	379	536	968	...	2,509
No. of Dogs Destroyed	163	178	146	176	307	...	970
Plague cases	...	...	...	...	1	...	1
Cholera cases	...	...	...	...	...	...	...
Small-pox cases	...	...	...	...	...	...	...
Vaccinations performed in Rural Areas	426	292	89	273	611	(18 town)	1,709
Malarial admissions to Hospitals	8	138	34	65	19	...	264
Expenditure on Anti-malarial works including Expenditure on oiling	...	...	...	...	...	...	\$74,118.65

(iv)—RURAL AREAS, SINGAPORE, 1923.

EXTRACTS FROM REPORT ON SANITATION BY P. C. FERNANDEZ, L.M.S.,

SINGAPORE, *Acting Health Officer (Rural)*.

1. The Rural Districts of Singapore, contain an area of 188.5 sq. miles with an estimated population of 72,861. The average density of the population is about 400 persons to the sq. mile, but portions of the North and North-west of the island are practically uninhabited being for the most part mangrove swamps while parts of Siglap District are thickly populated.

For convenience of health administration the rural area is divided into 5 Sanitary Districts, namely:—

Pasir Panjang District including Pulo Brani, Pulo Bukum Kechil and Tanjong Kling; Bukit Timah District; Seletar District; Paya Lebar District including Pulo Ubin; and Geylang—Siglap District including Pulo Tekong.

2. The following table shows comparative figures (population, deaths, births and infantile mortality) with those of 1922:—

		Popula- tion.	Total Deaths.	Death Rate.	Total Births.	Birth Rate.	Infantile Mor- tality Rate.
1922	...	70,432	1,984	28.17	2,043	29.01	209.5
1923	...	72,861	2,019	27.71	1,864	25.58	265.6

3. Infectious Diseases in Rural Area:—

					Cases.
Plague	...	...	...	...	1
Measles	...	...	...	...	7
Chicken-pox	...	...	...	...	5
Diphtheria	...	...	...	...	2
Typhoid fever	...	...	...	...	2

4. Sanitation:—

The pail system of latrine was strongly recommended to the villages and this type was more largely used than in previous years.

A three sided cow dung receptacle was provided in Paya Lebar District for the reception of dung from the neighbouring cattle-sheds with facilities for daily removal.

A small septic tank was built in Paya Lebar District and worked satisfactorily.

The majority of the latrines built to discharge over a tidal stream at Geylang Serai in Siglap District have been demolished and pail latrines have been substituted.

5. Plans:—

Out of 109 plans submitted a total of 74 were passed during the year including 11 submitted in the previous year.

6. Vaccination:—

7. Disinfection:—

Period.	VACCINATION.		RE-VACCINATION.		RESULTS.		Failed.	Not seen.	No. of Prosecutions.
	Adult.	Child- ren.	Adult.	Child- ren.	Perfect.	Modified.			
1923 ...	Nil.	1385	304	20	1549	Nil.	93	67	Nil.

Thirteen houses in the Rural Areas and 21 Government Buildings in Singapore City, were disinfected during the year.

8. During the year 970 diseased and unregistered dogs were destroyed.

9. During the year Bukit Timah and Pasir Panjang, Out-door Dispensaries and Health centres were opened. An office and quarters for the District Sanitary Inspectors are provided in each building. Two shop houses in Joo Chiat Road were hired by Government to form a temporary Out-door Dispensary and Health centre for Siglap District.

A room in the dressers' block of the Female Lunatic Asylum was altered for use as a small Out-door Dispensary for Pasir Panjang District.

(v)—ANTI-MOSQUITO MEASURES.

EXTRACTS FROM REPORT BY J. S. DE VILLIERS, D.R.S.I. (LONDON),

Anti-mosquito Inspector.

1. Details of Work done:—

(a) Bukit Timah District—

(1) *Mosquito Surveys.*—Mosquito surveys were regularly carried out around the Bukit Timah Reformatory and Mandai areas. A mosquito index of the village of Bukit Timah was kept from August.

(2) *Oiling*.—Oil spraying was carried out weekly wherever necessary for fully a half mile around the village of Bukit Timah and for a quarter mile around the Reformatory School and the Bukit Timah Quarry.

The average amount of oil used per week was:—

75 gallons of Solar Oil;

37 gallons of Crude Oil;

the proportions used being 2 parts Solar oil to 1 part Crude oil.

Oil was provided by the Federated Malay States Railway authorities for spraying over Railway Reserves at Bukit Timah.

(3) *Drainage*.—Dangerous breeding places were sub-soil drained. 24,111 feet of cement sub-soil pipes were laid.

(4) *Labour*.—An average force of 3 mandores, 1 mason and 40 coolies were employed.

(b) Paya Lebar District—

(1) *Mosquito Surveys*.—Mosquito surveys were made for a mile on each side of the Serangoon Road from the 5th to the 6th mile.

(2) *Oiling*.—Oil spraying was carried out weekly where necessary for a quarter of a mile on each side of the Serangoon Road from the 5th to the 6th mile. The average amount of oil used each week was:—

84 gallons of Solar Oil; and

42 gallons of Crude Oil.

(3) *Drainage*.—Dangerous breeding places from the 5th mile Serangoon Road to the 6th mile were sub-soil drained. 28,537 feet of cement pipes were laid.

(4) *Labour*.—An average force of 3 mandores, 1 mason and 45 coolies were employed.

(c) Geylang—Siglap District—

(1) *Mosquito Surveys*.—Mosquito surveys were made along the East Coast Road and along Joo Chiat Road.

(2) *Oiling*.—Oil spraying was not necessary as other anti-mosquito measures were successful.

(3) *Drainage*.—Sub-soil drainage was not necessary as *Anopheles maculatus* was not discovered. Breeding places were abolished mainly by open drainage.

(4) *Labour*.—One mandore and 20 coolies were employed.

(d) Pasir Panjang District—

(1) *Mosquito Surveys*.—Mosquito surveys were made along the Pasir Panjang Road from the $4\frac{1}{2}$ to the $7\frac{1}{2}$ mile and for a half mile around Labrador Bungalow.

(2) *Oiling*.—Oil spraying was carried out weekly where necessary for a quarter of a mile around the Admiralty Oil Tanks and at Labrador Bungalow.

The average amount of oil used per week was:—

Solar Oil 12 gallons.

Crude Oil 6 gallons.

(3) *Drainage*.—An open cement drain was constructed along the Pasir Panjang Road at the $5\frac{1}{2}$ mile opposite the Poey Seng Keng properties. The length of this drain was 1,140 feet. No sub-soil drainage was put in.

(4) *Labour*.—An average force of 1 mandore and 10 coolies were employed. Two masons were employed for 3 months.

(e) Seletar District—

(1) *Mosquito Surveys*.—Mosquito surveys were made along the Seletar Road from the 12th to the 15th mile and for a mile around Woodlands.

(2) *Oiling*.—Oil spraying was carried out weekly where necessary for a quarter of a mile around Woodlands Police Station. The average amount of oil used per week was:—

Solar Oil 16 gallons.

Crude Oil 8 gallons.

(3) *Drainage*.—Dangerous breeding places were sub-soil drained at Woodlands. 2,441 feet of cement sub-soil pipes were laid.

(4) *Labour*.—One mandore and 20 coolies were employed at Woodlands for 5 months.

(f) Singapore City—

Mosquito Surveys.—Mosquito surveys were carried out over the following areas:—

(a) Government Hill.

(b) Goodwood Hill.

(c) Nassim Hill.

(d) Fort Canning.

(e) General Hospital.

(f) Tan Tock Seng Hospital.

(g) Bukit Timah.

(2) *Oiling*.—Oil spraying was carried out weekly where necessary in the following areas:—

(a) Goodwood Hill.

(b) Tanglin Hill area.

(c) Government Hill.

(d) General Hospital.

(e) Fort Canning.

The amount of oil used each week was:—

65 gallons of Solar Oil.

32 gallons of Crude Oil.

(3) *Drainage*.—The dangerous breeding places were sub-soil drained in the following areas:—

(a) Goodwood Hill.

(b) Balmoral Road.

(c) Scots Road.

(d) General Hospital.

(e) Tan Tock Seng Hospital.

(f) Government Hill.

(g) Mackenzie Road.

(h) Fort Canning.

4,200 feet sub-soil pipes were laid.

(4) *Labour*.—An average force of 2 mandores and 33 coolies were employed.

2. Statistics:—

A Review of Malaria Admission to Singapore Hospitals.

	1921.		1922.		1923.	
	Total cases.	No. per 1,000 population.	Total cases.	Total per 1,000 population.	Total cases.	No. per 1,000 of population.
District Pasir Panjang	15	1'9	10	1'2	8	'98
Bukit Timah	133	13'6	16	16'5	138	13'30
Seletar (excluding Woodlands)	14	1'8	17	2'01	33	3'09
Woodlands	12	30'0	10	26'1	1	2'03
Paya Lebar	45	3'7	65	5'2	47	3'07
Pulo Ubin	31	12'4	43	16'7	18	6'07
Geylang Serai and Siglap	5	0'3	6	0'3	19	'9

3. Financial:—

Of the amount voted for Anti-mosquito Works for the year \$74,118.65 was expended and \$2,960.15 was recovered from owners or occupiers of lands on which Anti-mosquito works were carried out.

II.—PENANG.

REPORT BY J. I. BAEZA, M.B., Ch.B. (EDIN.) D.P.H. (OXON.) F.R.C.S. (EDIN.),
Acting Senior Health Officer.

1. I arrived in the Settlement on the 11th June and took over the duties of Acting Senior Health Officer on the 20th June, from Dr. F. R. SAYERS.

For Public Health Administration, the Settlement outside Municipal Limits is divided into 9 districts, which are under the supervision of the Senior Health Officer.

A Sanitary Inspector is attached to each of the rural districts. In addition there is a Chief Sanitary Inspector for Penang Island. In each rural district, there is a gang of coolies whose principal work is in connection with the village sanitation and anti-malarial measures.

2. *Shipping*.—During the year 442 ships were boarded and inspected and the number of crew and passengers examined were 54,317 and 128,032 respectively as compared with 59,945 and 137,634 respectively in 1922.

3. Six ships "infected". Of these 1 was from Calcutta infected with Plague; 1 from Calcutta and 1 from Madras with Cholera; and 2 from Jeddah and 1 from China with Small-pox.

4. Fourteen pilgrim ships and 6,471 pilgrims were examined previous to their sailing for Jeddah.

5. Six pilgrim ships with 5,010 pilgrims which arrived from Jeddah were inspected on their arrival. Two of these were infected with small-pox.

6. Immigrant ships bringing 14,667 Indian Immigration coolies from Madras and Negapatam were boarded and they and 9,462 coolies or passengers were examined.

7. Three hundred and nineteen Immigrant ships from Chinese ports, and 26,416 immigrants were examined.

8. Ten corpses were inspected on ships or tongkangs in the harbour. Permit to bury were issued after each inspection.

9. Nineteen water-boats supplying the shipping of the port were examined and certified to be clean.

10. The disinfecting launch *Kite* was in use on 11 occasions for the fumigation of ships.

11. Statistics concerning 10 years' work:—

<i>Years.</i>	<i>Vessels.</i>	<i>Units of Crew and Passengers inspected.</i>
1914	1,040	215,067
1915	405	148,662
1916	662	213,726
1917	367	203,757
1918	551	173,813
1919	493	210,839
1920	432	207,424
1921	461	197,448
1922	480	197,579
1923	442	182,349
Total	5,333	1,950,664

12. The duties of the Port Health Officer were continually performed by Assistant Medical Officer, Mr. J. H. L. WESTERHOUT throughout the year.

13. *Office Work*.—Bills of Health to the number of 646 were issued and \$3,215 were received for them. Three bills of Health were issued free of charge to His Majesty's Ships-of-war.

Fees amounting to \$1,762 were charged for the use of the disinfecting launch *Kite*. These certificates of disinfection were issued and \$90 received for them.

14. Permits to import, tranship or export human remains were granted in 20 instances, and \$190 received for them. One permit was issued free of charge.

15. The Revenue of the Health Branch was therefore \$5,257.

16. Exemption permits were issued to 198 ships ("T. S. Certificates").

17. Three Bonds for the surveillance of passengers on shore were entered into by relatives or friends of passengers and were lodged in the Health Office.

"Passengers Undertakings" to the number of 121 were issued to passengers to secure their observation by a Health or Medical Officer ashore.

(i)—QUARANTINE STATION—PULAU JEREJAK.

1. During the year 24,129 coolies or passengers from 98 ships were admitted. Of these 14,667 were Indian Immigration coolies and 9,462 were ordinary deck-passengers.

2. The greatest number of suspects in residence on any one day was 2,432 on 24th August, 1923, and the smallest number was 1 on 3rd February, 1923. The Station was occupied daily throughout the year. The average daily number present was 478.71.

3. From 6 infected ships 3,370 contacts were detained.

4. From 93 non-infected ships 20,759 suspects were detained. None of them developed the particular dangerous infectious disease in connection with which they were quarantined, but 80 developed Influenza.

5. Influenza, Small-pox and Cholera were the Infectious Diseases present.

6. During the year 23,359 vaccinations and revaccinations were performed as compared with 26,675 in 1922.

7. In the Station Hospitaal 755 patients were treated. At the Dispensary 706 minor ailments were attended to.

8. There were 43 deaths in the Hospital, of which 6 occurred within 48 hours of admission. Excluding these, the Hospital death-rate per mille was 49.00 and the Station death-rate 1.53 per mille.

9. Return of Diseases, Deaths at Station Hospital:—

<i>Diseases.</i>	<i>Cases of.</i>	<i>Deaths from.</i>
Chicken-pox ...	17	—
Dysentery ...	80	9
Influenza ...	84	2
Influenza pneumonia ...	12	5
Pneumonia ...	9	3
Malaria ...	173	3
Measles ...	35	—
Small-pox ...	2	1
Cholera ...	9	2
Other diseases ...	334	18
Total ...	755	43

10. The total rainfall was 22.16 c.m. in 102 days. The maximum fall in any one day was 100 m.m. on the 1st October, 1923.

11. The quality of the water supply continued to be excellent throughout the year as shown by routine chemical analysis.

12. The temporary latrines in the attap camps were converted into the trench type with automatic flush.

13. Four permanent camps to accommodate 25 passengers in each were commenced during the year, and are now nearly completed.

14. The replacement of salt water by fresh, for the baths was commenced during the latter part of the year.

15. Statistics concerning 10 years' work:—

Year.	Number admitted.	Average daily number present.	Vaccination performed.	Cholera cases.	Plague cases.	Small-pox cases.
1914 ...	48,399	116	32,609	9	Nil.	171
1915 ...	23,176	478	21,562	Nil.	"	3
1916 ...	42,736	817	36,806	1	"	11
1917 ...	37,595	820	36,808	12	"	11
1918 ...	33,481	720	29,536	80	"	7
1919 ...	50,733	1,189	39,941	264	"	6
1920 ...	43,733	932	41,230	8	"	4
1921 ...	19,653	353	10,377	3	"	42
1922 ...	31,247	567	26,675	Nil.	"	6
1923 ...	24,129	478	23,359	9	"	2
Total ...	354,882	6,470	298,903	386	...	263

(ii)—Rural Areas.

Districts.	Estimated Population.	Births.	Deaths.	Infantile Deaths.	Crude Birth Rate per mille.	Crude Death Rate per mille.	Infantile Mortality per mille.
Penang (outside Municipal Limits) ...	38,914	1,436	1,185	194	36.90	30.45	135.10
Province Wellesley ...	130,618	4,039	3,914	640	30.92	29.97	158.46
Dindings ...	13,283	386	290	43	29.06	21.83	111.40
Total ...	182,815	5,861	5,389	877	32.06	29.48	162.36

2. There were 10 cases of Dangerous Infectious Diseases. The Return shows details for each District. Cases of Influenza are not included.

	Penang, North East District.	Penang, South West District.	Province North District.	Province Central District.	Province South District.	Dindings.	Total.
Cerebro Spinal Fever ...	...	...	...	1	...	...	1
Cholera ...	...	...	...	...	...	...	...
Plague ...	...	...	...	...	...	...	...
Small-pox ...	...	...	9	...	...	...	9
Typhus ...	...	...	...	...	...	...	...
Yellow Fever ...	...	...	...	...	...	...	...
Total ...	...	...	1	1	...	...	10

3. Vaccinations or Re-vaccinations against small-pox amongst Infants and Adults were performed as follows:—

District.	Total.
Quarantine Station, Pulau Jerejak ...	23,359
Penang, North-eastern ...	815
Penang, South-western ...	1,246
Province Wellesley, Northern ...	2,431
Province Wellesley, Southern ...	2,916
	<u>30,767</u>

(iii)—PENANG ISLAND.

1. There are 3 villages areas, Tanjong Tokong, Ayer Itam and Sungei Glugor in the North-east District and five, viz.:—Balek Pulau, Bayan Lepas, Teluk Kumbar, Sungei Pinang and Teluk Bahang in the South-west District.

2. Two hundred and seventy-three notices concerning cowsheds, latrines, milk, nuisances, pigstyes, and white-washing of buildings were issued during the year, and of these 268 were complied with.

3. The total number of prosecutions were 78, of which there were 76 convictions.

4. Sanitary coolies were employed to clear up villages under the immediate supervision of the Sanitary Inspectors.

5. All villages areas have now been supplied with incinerators.

6. *Anti-malarial Works*.—Oiling, and the training of streams, was carried out by six anti-malarial coolies, more especially in the Tanjong Bungah and Ayer Itam areas.

Assistant Surgeon, D. C. RICHARDS who was a part time Officer of the Health Department up to 18th June, 1923, was on that date transferred to the Department as a whole time Officer.

Various mosquito surveys have been carried out by him during the year.

7. Mr. RICHARDS has also carried out injections of N. A. B. for the treatment of Yaws on two days a week in various villages of Penang Island, during the period March to October. The table below shows a record of the treatments by nationalities and the amount of N. A. B. used.

The work has been very encouraging, but the Malays especially so soon as their lesions show signs of improvement, cannot be persuaded to continue with the treatment and I fear that in 1924, a fairly large number of relapses will be encountered.

(iv)—TREATMENT OF YAWS AND SYPHILIS IN BALIK PULAU DISTRICT IN 1923.

1.	The total number of injections given	...	...	1,887
	The total number of persons treated	...	...	1,180
	The average number of injections given per person	...	...	1.6
2.	The number of persons who had only one injection each	...	...	638
	The number of persons who had only two injections each	...	...	410
	The number of persons who had only three injections each	...	...	104
	The number of persons who had only four injections each	...	...	23
	The number of persons who had only five injections each	...	...	5
3.	The number of injections given for Syphilis	...	...	255
	The number of injections given for Yaws	...	...	1,621
	The number of injections given for Debility, etc.	...	...	11
				1,887
4.	The total number of visits made	...	...	37
	Average number injected per visit	...	...	51
5.	Number of injections given to Malays, males 1,040	}	...	1,391
	Number of injections given to Malays, females 351			
	Number of injections given to Chinese, males 338	}	...	440
	Number of injections given to Chinese, females 102			
	Number of injections given to Tamils, males 44	}	...	51
	Number of injections given to Tamils, females 7			
	Number of injections given to Eurasians, males 4	}	...	5
	Number of injections given to Eurasian, female 1			
				1,887

(v)—DINDINGS.

Health work in the Dindings is confined practically to anti-malarial drainage at Lumut.

				<i>Population.</i>
2.	Drained area	...	...	1,044
	Undrained area	...	...	11,129

3. *Total cases of Malaria for Dindings.*—In-patients—151 of which 20 occurred in the drained area.

Total out-door cases were 92 of which 14 occurred in drained area.

4. *Deaths*.—Police Registers show 48 deaths from Demam Panas: Of these 4 are certain deaths from Malaria, from the drained area. Two of these 4 cases came from a Ravine at a time when that ravine was undrained.

IV.—MALACCA.

By F. WOOLRABE, M.R.C.P., F.R.C.S., D.P.H., *Health Officer, Malacca.*

Population.—The estimated population of Malacca Territory was 161,356.

Mortality.—The weekly mortality curve showed a maximum crest (116) in 2nd week of June and 2 minor crests, in 2nd week of January (105) and 1st week of May (104).

Crude Death-rate.—26·9 per mille.

Birth-rate.—33·85 per mille.

Rainfall.—The rainfall curve gives a maximal crest in April and a sub-maximal one in October, a minimal trough in February with a sub-minimal one in June. The maximal mortality crest is therefore 2 months later than that of maximum rainfall.

The maximal Malaria Mortality crest (21) was in 2nd week of February with 2 nearly crests in 4th week of January and 1st week of February. The next most notable peak was in 1st week of November. The main peak of the Convulsions Mortality Curve was in the last week of October (38), with 2 minor peaks in 3rd week of June (37) and in 3rd week of December (35).

The 2 lowest troughs were in 4th week of September and 2nd week of October (12 each).

The whole curve slopes to the June peak with a fall to the September and October troughs then a sudden rise to the maximum and after a fall a general rise occupying most of November and December. This curve is entirely discrepant from the total curve. The headings of Malaria, Fever and Unspecified Fever, and Convulsions account for 64·17 of total death against 62·98 in 1922.

The figures for the last 3 years are:—

	<i>Malaria.</i>	<i>Fever & Unspecified Fever.</i>	<i>Convulsions.</i>	<i>Total.</i>
	—	—	—	—
1921	... 834	753	1,294	2,881
1922	... 765	796	1,040	2,601
1923	... 44	1,039	1,307	2,786

The continued improvement in the Malarial figures will be noticed, while those of Fever and Unspecified Fever show an increase. This suggests that part of the improvement may be due to greater facilities of treatment.

As before pointed out however the Malarial death-rate is not a true index of Malarial incidence.

The number of deaths from Tetanus was 27 against 45 in 1922 of these 25 were within the Municipal area.

Milk.—One sample was forwarded for examination and contained no added water.

Water.—Forty samples of water were examined chemically. Monthly analyses were made of the Municipal Water Supply from Ayer Kroh and of the Bukit China Wells. Only two of the latter now supply water to the Town and were regularly pinked. One of them showed signs of contamination and was temporarily closed. It has not been necessary to use the subsidiary supply at Ayer Kroh, though this has been occasionally pumped to keep it in running order.

The water supply of estates is generally good, but there is no improvement in that of villages.

Estates.—Two hundred and forty-eight visits were made to estates. (Estate Mortality Returns attached).

Anti-malarial Work.—Several successful attempts to improve sanitation permanently have been made.

Police Stations.—Eleven visits were made to Police Stations.

Dairies.—Two visits were made to 2 dairies.

Villages.—Eighty-five visits were made to villages.

Schools.—Eighty visits were made to Schools.

School children.—There are 86 Vernacular Schools in the Settlement of which 73 are boys and 13 girls' schools, with a roll call of just under 6,000 pupils. Four thousand and eight school children were medically examined. This number does not include about 150 pupils of the High School and St. Francis School who were examined to complete the roll of the previous year, but does include the Anglo Chinese School. The medical examination of school children were confined to Vernacular Schools (with the above exceptions) and the results have been embodied in separate reports (attached).

Infective Disease.—

Cholera.—No cases of Cholera occurred.

Small-pox.—Twenty-four cases occurred with one death.

There were two invasions entirely distinct. The first was part of an outbreak which occurred at the end of 1922 and continued with 18 cases and one death in 1923. They were all grouped about the North-west frontier.

The last of these cases occurred on 6th April, 1923. The other outbreak followed a case infected in Sumatra and concealed at Telok Mas for 34 days. The first discovered case was found on 9th August, 1923, having been concealed for about 20 days. There were 6 cases in this outbreak with no deaths. The fact that at least 2 infective cases remained for so many days only 7 miles from Malacca Town without causing a larger outbreak is a proof of the effective vaccination of the population.

Chicken-pox.—Sixty-six cases were notified. There were of course others.

Plague.—Six cases of Bubonic Plague with 6 deaths occurred in Malacca Town.

Cerebro-spinal Meningitis.—Six cases occurred with 5 deaths, all cases being Indians. This supports the view that carrier incidence is higher among Indians than Chinese. No contact case occurred.

Diphtheria.—One fatal case occurred in Town of a child aged 6. There were no contact cases.

Influenza.—The cases that occurred were of a mild type and sporadic.

Measles.—Measles of a mild type, but sometimes followed by Broncho pneumonia, was prevalent in the latter part of the year.

Vaccination.—The total vaccinations from all known sources were 20,367. Of these 1,025 were done by the Sanitary Inspectors who are not Government vaccinators. Besides the above many estate coolies were vaccinated by Estate Medical Officers and dressers. A proof of the efficient state of vaccination is noted under "Small-pox".

Quarantine Camp at Mata Kuching.—This received 3 cases of plague, 11 of chicken-pox and none of small-pox.

Ankylostomiasis.—The policy of former years, viz., persuasion and instruction was followed. On most of the large estates regular examination and treatment of coolies is successfully carried out. Owing to the habits of Tamil coolies it is only by such a system that estates can be kept free from Ankylostomiasis.

Sanitation.—The small incinerators introduced by Mr. BIRD, late District Officer of Alor Gajah proved so useful that a more permanent type has been adopted for nearly all villages. A serious and successful effort to get in touch with small estates was the appointment of two Chinese Visiting Medical Officers who are winning the confidence of the small owners and their coolies.

Estate Mortality Return for the year 1923.

Name of Estate.	Total admissions into Estate Hospital.	DEATHS.					Total number in Labour Force.
		Dysentery.	Malaria.	Phthisis.	Pneumonia.	Ankylostomiasis.	
Bukit Kajang Estate	282	2	2	...	2	...	462
Batulang Estate	262	...	...	...	4	1	243
Asahan Estate	224	...	7	1	1	1	619
Bertam and Krubong Estate	35	1	...	...	...	...	215
Diamond Jubilee Estate	326	1	4	...	1	...	875
Devon Estate	392	1	...	1	1	4	674
Chempadak Estate	280	...	1	...	...	...	108
Gadek Estate	71	...	3	1	1	...	173
Garing Estate	119	...	...	...	2	...	166
Jasin Estate	12	...	2	...	1	...	193
Jasin Lallang Estate	205	...	4	1	...	...	419
Kemuning Estate	85	1	1	...	...	...	311
Lendu Estate	79	...	1	...	...	...	232
Merlimau Estate	621	2	2	...	6	1	775
Pegoh Estate	200	2	2	...	1	1	548
Rim Estate	175	...	3	...	1	1	442
Rembia Estate	275	...	1	...	...	...	227
Serkam Estate	122	...	...	...	1	...	444
Tebong Estate	359	2	5	3	3	3	740
Tebolang Estate	238	1	1	...	4	...	220
Union Estate	7	...	...	...	...	...	48
Ayer Panas Estate	76	3	...	...	...	...	456
Malaka Pinda Estate	294	...	...	...	1	...	120
Total	4,739	16	39	7	31	8	8,710

APPENDIX C.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

I.—SINGAPORE BOYS SCHOOLS.

REPORT BY R. W. C. KELLY, M.R.C.S., L.R.C.P., *Medical Officer in charge of Schools.*

The Medical Inspection of Schools for the year was carried out by the following officers, Dr. R. B. HAWES for the first half of the year and Drs. HODGE and myself for the second half. The following schools were inspected and medical cards filled for each pupil:—

1. Outram Road School.
2. Anglo-Chinese School.
3. St. Anthony's Boys' School.
4. Raffles Institution.
5. Geylang English School.
6. Pearls Hill School (in part).

Routine inspection in all amounted to 2,573 and in addition Geylang English School was visited owing to an outbreak of eczema of the scalp among some of the boys; and St. Joseph's Institution was also visited owing to the presence of a boy who reported sick at the Government Dispensary at North Canal Road and was found to be suffering from Leprosy. This boy was sent to the Hospital at Tan Tock Seng. Routine inspection of the boys revealed the following defects.

1. *Dental caries.*—This is by no means a condition limited to the local schools, but is more or less a world wide factor among school children. Out of a total of 2,573 boys examined 1,573, i.e., 61 per cent were found to have caries ranging from that of a single tooth to that of the complete set. The Chinese I have found to be the greatest sufferers, which possibly may be due to one of the two factors firstly errors in diet, and secondly neglect in the care of the teeth, or more probably a combination of both. Indians have in the majority of cases sound teeth.

2. *Enlarged Tonsils.*—I take this item next, as in my opinion a large proportion of these cases are definitely due to a septic condition of the mouth produced by dental caries. One finds various degrees of enlargement ranging from a slight hypertrophy of the tonsillar elements to a meeting of the two tonsils in the middle line; and in my reports on individual schools I classified them as plus 1, 2, or 3. The two former being conditions which were still amenable to medication, and plus 3, when it has reached a very chronic stage in which there was no hope of improvement without surgical measures. Out of the total numbers examined 264 boys were found to have enlarged tonsils.

3. *Defective Physique.*—Three hundred and thirty-eight boys were found to be of poor physique. Now that a whole time physical director has been appointed a great improvement in this direction may be expected.

4. *Defective Vision.*—There were 299 cases of defective vision in one or both eyes, i.e. 11.62 per cent, and on completion of the medical examination the Principals of Schools were asked to try and persuade the boys and their parents to have these defects remedied; and to report to the Ophthalmic Surgeon at the General Hospital or consult their own family practitioner if they so wished. It was also pointed out that all such boys ought to be placed near to the black board. There is unfortunately no system by which boys of obviously poor parents can be supplied with glasses free of charge. Cases of conjunctivitis were told to report at the Government Dispensary at North Canal Road or any other Government Dispensary.

5. *Uncleanliness.*—This was particularly noticeable in some of the schools which cater mostly for the younger boys, and when I found that repeated warnings had not the desired effect, a system of compulsory bathing under the supervision of a teacher was resorted to with marked results.

6. *Surgical Conditions*.—The numbers here are best given in tabulated form as follows:—

Forward dislocated of head of Radius	...	...	1
Fracture of Radius	...	...	3
Fracture of Metacarpal (2nd)	...	...	1
Cubitus Varus	...	...	1
Cubitus Valgus	...	...	1
Hernia Inguinal	...	...	26
Hernia (Umbilical)	...	...	4
Hydrocele	...	...	3
Varicocele	...	...	8
Phimosis	...	...	27
Patent Inguinal canals	...	...	7
Undescended Testicles	...	...	8
Tubercular hip	...	...	1

7. *Medical Conditions*.—

Anterior Poliomyelitis (old lesion)	...	...	1
Facial Paralysis	...	...	1
Bronchitis	...	...	8
Skin	...	...	196

II.—SINGAPORE GIRLS' SCHOOLS.

REPORT BY L. S. O'MAY, M.B., CH.B., *Lady Medical Officer*.

Six schools were examined, namely:—

	<i>Children.</i>
The French Convent School	827
The Raffles Girls' School	353
The Methodist Girls' School	439
The Fairfield Girls' School	390
The St. Anthony's Convent School	275
The Singapore Chinese Girls' School	133
	2,417

Visits.—Each school received 2 visits during the year. The first visit was devoted to individual examination of the girls, and the second one was made to note the improvements achieved.

Vaccination.—Nearly all the children had been vaccinated during the years 1921 and 1922, with the exception of 3 per cent who had not been vaccinated since infancy.

General Nutrition.—

Adequate	...	...	50%
Fair	...	...	40%
Poor	...	...	5%
<i>Pediculi Capitis</i>	...	...	7% (prevalent in St. Anthony's Convent School).

Clothing.—

Insufficient	...	...	13% (chiefly in the lower forms).
Dirty	...	...	10%
<i>Enlarged Spleen</i>	...	...	Nil.

Diseased conditions.—

Dental Caries	...	...	...	50%
Pyorrhœa	...	...	...	2%
Gingivitis	...	...	...	3%
Sordes	...	...	...	38%
Adenitis	...	...	...	2%
Enlarged Tonsils	...	...	...	35%
Skin Affections	...	...	...	11%
Anæmia	...	...	...	29%
Otorrhœa	...	...	...	2%
Partial Deafness	...	...	...	75%
Defective Vision	...	...	...	8%

External eye diseases.—

Trachoma	...	...	...	37 Children or 15%
Conjunctivitis	...	...	...	39 „
Phlyctenular Conjunctivitis	...	...	...	2 „
Strabismus	...	...	...	16 „
Total blindness 1 eye	...	...	...	1 child
Cataract	...	...	...	1 „
Goitre	...	...	...	1 „
Tubercular glands	...	...	...	2 children
Tubercular hip-joint	...	...	...	1 child
Pthisis	...	...	...	1 „
Valvular Heart Disease	...	...	...	1 „

Deformities.—

Kyphosis	...	...	...	1
Hallux Valgus	...	...	...	1
Pes Equinus	...	...	...	1
Supernumerary digits	...	...	...	1
Cleft Palate	...	...	...	1

The improvements noted during my second visit were as follows:—

Diseased condition of the teeth treated, 16½ per cent of the cases noted during the first visit—

Defective vision corrected	...	...	...	56%
General condition improved	...	...	...	16½%

In this respect the Methodist Girls' School ranked first as having shown the greatest percentage of improvements in all three conditions. Much credit was due to the Principal who encouraged the children to go for treatment.

1. *Suggestion and Treatment.* The dental condition must not be expected to show much improvement unless more effective methods are adopted to eradicate this disease. As matters stand the children are notified that they ought to have their treated whether the condition be caries, sordes, pyorrhœa, or gingivitis. Very frequently the main reason given against this was the expense.

2. *Skin conditions.*—Children suffering from scabies, sores, ulcers, etc., could be more effectually treated if a school nurse was provided. The girls began attending at the Kandang Kerbau Out-door Dispensary for treatment, but the majority of them do not persevere, and as a result their condition is not improved at the next inspection.

3. *School hours.*—The customary school hours are from 8 A.M. to 1 P.M. except in the 2 schools of the French Convent and the Portugese Convent where they attend from 9 A.M. to 4 P.M. It would, I feel sure, be better from a health point of view if they could be changed to 8 to 1 as elsewhere especially for the younger children.

III—PENANG SCHOOLS.

REPORT BY W. A. TAYLOR, M.B., Ch. B.

No.	School.	Number Examined.	General Condition Not Good.	Vaccination Needed	Cardiac.	Anæmic.	Respiratory System.	Scabies.	Ulcers.	Ringworm.	Yaws.	Syphilis.	Poor Eyesight, 1 Eye less than 6/8.	Conjunctivitis.	Granular Conjunctivitis.	Discharge from Ears.	Enlarged Tonsils & Adenoids.	Teeth more than 3 bad.	Enlarged Spleen.	Deformities.	Specific Infectious Disease.	Ankylostomiasis.
<i>Boys.</i>																						
1	Penang Free School ...	674	8	1	2	4	...	2	...	...	...	...	54	...	...	...	108	78	1	1	...	...
2	Government English School ...	511	50	10	...	101	...	5	...	...	1	...	100	...	...	...	109	154	4	1	...	...
3	St. Xavier's Institution ...	1,316	...	20	...	2	...	...	...	...	...	...	46	1	...	...	171	111	...	...	...	...
4	St. Xavier's Pulau Ticus ...	120	...	20	...	9	...	...	...	...	...	...	...	...	...	...	13	22	1	...	...	...
5	A. C. S. Maxwell Road ...	748	8	26	...	4	10	6	...	1	...	...	31	1	...	...	86	32	...	...	...	...
6	A. C. S. Chulia Street ...	543	4	22	...	5	6	...	...	...	...	...	49	1	...	1	64	91	4	...	...	...
7	St. Anthony's School, B. P.	41	1	...	...	1	...	1	...	...	...	...	2	1	...	...	2	6	...	...	...	4
TOTAL ...		3,953	71	106	2	126	89	29	13	1	1	...	282	4	...	1	553	494	10	2	...	4
<i>Girls.</i>																						
1	Convent ...	695	...	31	...	...	6	1	1	...	...	...	50	1	...	3	91	138	1	...	...	...
2	Anglo Chinese Girls' School ...	303	...	2	...	1	...	...	...	...	...	...	10	...	...	...	60	47	...	...	1	...
TOTAL ...		998	...	33	...	1	6	1	1	...	...	...	60	1	...	3	151	185	1	...	1	...

PENANG MUNICIPAL AREA.

No.	School.	Number Examined.	General Condition Not Good.	Vaccination Needed.	Cardiac.	Anemic.	Respiratory System.	Scabies.	Ulcers.	Ringworm.	Yaws.	Syphilis.	Poor Eyesight, 1 Eye less than 6/8.	Conjunctivitis.	Granular Conjunctivitis.	Discharge from Ears.	Enlarged Tonsils & Adenoids.	Teeth more than 3 bad.	Enlarged Spleen.	Deformities.	Specific Infectious Disease.	Ankylostomiasis.
<i>Malay Boys' School.</i>																						
1	Carnarvon Street	53	4	13	...	3	...	5	1	7	...	...	1	1	...	...	5	7	2	1	...	...
2	Chaurasta	271	8	40	...	8	...	31	2	14	...	...	7	...	1	...	17	35	6	1	...	17
3	Kampong Java	197	1	32	...	4	...	28	3	13	...	...	1	3	...	1	40	7	...	...	1	10
4	Dato Kramat Road	135	5	17	...	5	...	6	1	2	...	...	0	...	...	...	5	25	9	...	...	16
5	Kelawei Road	113	2	22	...	2	...	10	...	7	...	...	2	1	3	...	5	12	6	...	...	9
6	McAlister Road	84	...	13	...	2	...	20	3	5	...	...	2	...	...	...	5	9	7	...	...	7
7	Jelutong	81	2	11	...	3	...	8	2	4	...	...	1	...	...	1	15	5	19	...	...	12
TOTAL		934	22	148	...	28	5	108	18	52	7	...	23	7	3	3	99	100	49	2	2	71
<i>Malay Girls' School.</i>																						
1	Chaurasta School	68	4	4	...	2	...	...	...	...	...	...	...	...	...	...	11	30	7	...	...	...
2	Kelawei	47	1	3	...	...	1	...	...	...	...	...	20	...	...	...	7	14	...	...	...	...
TOTAL		115	5	7	...	2	1	...	...	...	...	...	20	...	...	...	18	44	7	...	...	...

PENANG RURAL AREA.

No.	School.	Number Examined.	General Condition Not Good.	Vaccination Needed.	Cardiac.	Anæmic.	Respiratory System.	Scabies.	Ulcers.	Ringworm.	Yaws.	Syphilis.	Poor Eyesight, 1 Eye less than 6/8.	Conjunctivitis.	Granular Conjunctivitis.	Discharge from Ears.	Enlarged Tonsils & Adenoids.	Teeth more than 3 bad.	Enlarged Spleen.	Deformities.	Specific Infectious Disease.	Ankylostomiasis.
<i>Malay Boys' School.</i>																						
1	Titi Tras	59	...	1	...	1	...	9	...	2	13	...	...	6	...	...	...	...	3	...	...	1
2	Batu Ferringhi	26	...	1	...	...	...	3	1	...	1	...	...	...	...	...	...	2	4	...	...	3
3	Kampong Paya	16	...	1	...	3	...	1	...	...	...	...	5	...	...	...	...	7	10	...	...	...
4	Balik Pulau Chinese	64	...	5	1	...	...	2	...	...	...	...	...	...	1	...	...	5	17	...	...	...
5	Relau	97	10	2	...	10	...	15	2	10	26	...	...	3	...	...	...	10	51	...	...	15
6	Sungei Rusa	117	10	2	...	10	...	12	...	...	...	...	...	...	...	...	...	7	26	...	...	19
7	Ayer Itam V. S.	47	5	1	1	4	...	17	1	3	7	1	1	...	...	...	...	7	7	...	...	6
8	Sungei Korok	73	4	3	...	4	...	1	...	...	...	...	...	...	...	...	...	3	7	...	...	2
9	Pondok Upoh	29	1	...	...	...	...	8	...	1	7	...	...	...	...	...	...	1	6	...	...	1
10	Balik Pulau Kongsi	73	8	...	...	...	...	25	...	6	4	...	...	...	...	...	...	1	54	...	...	17
11	Bayan Lepas	104	6	4	...	6	...	12	1	5	12	...	...	2	...	...	...	4	23	...	...	2
12	Sungei Batu	31	3	1	...	3	...	12	...	3	16	...	...	...	...	...	...	1	13	...	...	...
13	Telok Bahang	47	0	1	...	9	...	11	...	9	3	...	...	...	...	...	...	2	33	...	...	...
14	Permatang Damar Laut	52	0	4	...	5	...	7	...	1	9	...	...	...	...	...	...	2	23	...	...	...
15	Sungei Nibong	71	1	2	...	1	...	6	...	...	5	...	...	...	...	...	...	2	18	...	...	...
16	Batu Maung	37	3	1	...	3	...	1	...	...	...	...	...	...	...	...	...	2	3	...	...	...
17	Tanjong Tokong	43	3	2	...	2	...	8	5	3	6	...	...	...	...	...	...	3	22	...	...	...
18	Pulau Bentong	68	3	4	...	2	...	19	1	...	7	...	...	...	...	...	...	3	6	...	...	...
19	Telok Kumbang	74	3	2	...	4	...	5	...	...	...	...	...	...	...	...	...	1	11	...	...	...
20	Sungei Glugor	51	2	1	...	2	...	11	...	2	6	...	...	...	...	...	...	4	11	...	...	...
21	Genting	72	2	4	...	...	...	11	...	1	13	...	...	...	...	...	...	5	14	...	...	...
Total		1,251	81	57	2	78	6	204	17	52	171	1	20	18	1	1	50	127	347	...	...	105
<i>Malay Girls' School.</i>																						
1	Kongsi V. G. S.	40	...	1	...	...	...	...	...	...	...	...	24	...	...	...	8	22	...	...	...	...
2	Sungei Batu	31	5	4	...	11	...	...	...	...	2	...	8	...	...	...	6	9	6	...	...	...
3	Sungei Rusa	36	1	3	...	7	...	...	...	...	1	...	21	...	...	...	6	21	14	...	...	...
4	Telok Kumbang	40	...	...	1	15	...	...	...	...	...	...	5	...	...	...	4	6	14	1	...	...
5	Bayan Lepas	57	1	2	...	11	2	...	...	...	2	...	22	...	...	...	7	13	9	...	...	...
Total		204	7	10	1	44	2	...	...	...	5	...	80	...	...	...	31	71	43	1	...	...

THE DINDINGS, MALAY BOYS' SCHOOL.

No.	School.	Number Examined.	General Condition Not Good.	Vaccination Needed.	Cardiac.	Anæmic.	Respiratory System.	Scabies.	Ulcers.	Ringworm.	Yaws.	Syphilis.	Poor Eyesight, 1 Eye less than 6/8.	Conjunctivitis.	Granular Conjunctivitis.	Discharge from Ears.	Enlarged Tonsils & Adenoids.	Teeth more than 3 bad.	Enlarged Spleen.	Deformities.	Specific Infectious Disease.	Ankylostomiasis.
1	Bras	84	4	10	1	...	1	6	...	...	...	...	...	1	...	...	...	10	19	...	...	...
2	B. Luas	26	...	1	...	...	...	1	...	...	2	...	...	...	...	...	...	7	7	...	...	...
3	Pangkor	37	7	...	...	2	...	3	...	2	...	...	...	...	...	...	...	10	11	...	...	...
	TOTAL	147	11	11	1	2	1	10	...	2	2	...	...	1	...	1	...	27	37	...	...	...

PROVINCE WELLESLEY, ENGLISH AND TAMIL SCHOOL.

No.	School.	Number Examined.	General Condition Not Good.	Vaccination Needed.	Cardiac.	Anæmic.	Respiratory System.	Scabies.	Ulcers.	Ringworm.	Yaws.	Syphilis.	Poor Eyesight, 1 Eye less than 6/8.	Conjunctivitis.	Granular Conjunctivitis.	Discharge from Ears.	Enlarged Tonsils & Adenoids.	Teeth more than 3 bad.	Enlarged Spleen.	Deformities.	Specific Infectious Disease.	Ankylostomiasis.
<i>English School.</i>																						
1	Anglo Chinese School (Bukit Mertajam)	48	...	4	...	2	...	7	3	5	...	...	...	...	...	1	7	6	1	...	...	...
2	St. Ann's School	57	...	3	...	2	3	2	...	...	...	...	...	1	...	...	11	21	...	...	...	...
3	St. Mark's School	74	1	...	...	8	...	1	13	1	...	...	...	1	...	...	24	1	2	...	...	...
4	St. Paul's School	19	...	1	...	1	...	2	2	1	...	...	...	...	...	...	...	...	...	...	...	...
5	Anglo Chinese School (Nilong Tebal)	140	...	26	...	1	1	4	...	3	...	...	...	...	...	...	...	5	12	...	...	...
	TOTAL	338	1	34	...	14	4	16	18	10	...	...	...	2	...	7	42	33	15	...	...	...
<i>Tamil Schools, Estate etc.</i>																						
1	Bertam Estate	39	18	26	...	3	1	5	...	2	...	...	2	6	...	...	15	12	...	...	...	...
2	Malakoff Estate	15	8	5	...	2	2	1	...	...	1	...	1	...	...	...	4	2	...	...	...	...
3	Caledonia Estate	27	...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Batu Kawan Estate	32	...	8	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
5	St. Anthony's School	21	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...
	TOTAL	133	26	53	...	6	3	7	...	2	1	...	5	6	...	...	19	14	3	...	...	...

PROVINCE WELLESLEY NORTHERN DISTRICT MALAY SCHOOLS.

No.	School.	Number Examined.	General Condition Not Good.	Vaccination Needed.	Cardiac.	Anæmic.	Respiratory System.	Scabies.	Ulcers.	Ringworm.	Yaws.	Syphilis.	Poor Eyesight, 1 Eye less than 6/8.	Conjunctivitis.	Granular Conjunctivitis.	Discharge from Ears.	Enlarged Tonsils & Adenoids.	Teeth more than 3 bad.	Enlarged Spleen.	Deformities.	Specific Infectious Disease.	Ankylostomiasis.
Boy's.																						
1	Ara Rendang	121	39	43	...	44	4	12	...	...	18	...	2	14	...	...	45	41	8	...	...	...
2	Bagan Ajam	41	6	25	...	3	1	5	...	...	3	...	...	1	...	...	6	5	3	...	...	...
3	Sungei Dua	72	1	1	...	...	...	7	...	1	2	...	...	4	1	...	29	13	10	...	...	...
4	Bagan Jermal	37	...	6	...	...	...	1	...	...	3	...	...	4	...	...	6	0	1	...	...	...
5	Bagan Tuan Keehil	108	2	24	...	5	5	12	...	...	4	...	...	...	...	3	26	8	20	...	...	...
6	Kuala Prai	115	3	4	...	11	...	12	1	1	3	...	5	...	...	9	15	6	3	...	...	...
7	Permatang Sinioh	81	...	...	...	...	...	5	...	...	2	...	...	...	...	...	3	1	5	...	...	...
8	Permatang Bertam	117	11	...	...	7	...	11	...	1	9	...	...	1	...	...	3	5	...	1	...	...
9	Paya Keladi	74	15	4	1	10	1	8	1	1	7	...	...	...	...	...	...	12	...	...	...	...
10	Padang Menora	118	5	1	...	5	1	...	...	...	10	...	...	...	...	...	...	2	3	...	...	...
11	Pulau Mertajam	104	1	2	...	3	...	6	5	...	5	...	1	...	...	...	3	...	13	...	...	...
12	Tasek Glugor	76	2	8	...	1	...	1	...	1	8	...	2	...	...	...	...	...	1	...	...	...
13	Telok Ayer Tawar	88	14	10	...	9	...	3	2	1	6	...	...	1	...	...	...	...	12	...	...	...
14	Permatang Bingai	53	5	...	...	2	...	2	1	...	13	...	2	...	...	...	...	2	9	...	2	...
15	Permatang Tuh Jaya	92	3	2	1	11	1	4	1	1	4	...	2	...	...	...	...	3	5	...	...	...
16	Bagan Belat	63	...	2	...	1	...	1	...	...	4	...	...	...	...	...	...	1	20	...	...	...
17	Penaga	106	1	7	2	11	...	5	1	...	1	...	...	...	...	1	...	5	20	...	...	...
18	Permatang Buloh	85	...	2	...	6	...	2	...	...	7	...	...	...	...	...	2	4	5	...	...	...
19	Sungei Puyu	116	3	26	...	5	...	1	...	...	11	...	...	...	...	...	1	11	15	...	1	...
20	Sungei Tembus	40	...	4	...	1	...	3	...	...	...	...	...	...	...	...	1	4	10	...	...	...
21	Lahar Minyak	65	...	12	1	5	...	4	...	...	2	...	...	...	...	...	...	3	10	...	...	...
22	Kota Aur	44	...	3	...	2	...	4	1	...	3	...	...	...	...	...	1	4	11	...	...	...
Total		1,916	113	193	7	143	13	117	15	5	129	...	15	32	9	14	143	135	185	4	...	1
Girl's.																						
1	Bagan Ajam	27	1	1	...	...	...	2	...	...	...	...	...	...	...	...	10	1	2	...	...	...
2	Bagan Jermal	42	1	12	...	...	2	4	1	...	2	...	...	4	...	1	14	...	4	...	...	...
Total		69	2	13	...	...	2	6	1	...	2	...	...	4	...	1	24	1	6	...	...	...

PROVINCE WELLESLEY, CENTRAL AND SOUTHERN DISTRICT, MALAY BOYS' SCHOOLS.

No.	School.	Number Examined.	General Condition Not Good.	Vaccination Needed.	Cardiac.	Anæmic.	Respiratory System.	Scabies.	Ulcers.	Ringworm.	Yaws.	Syphilis.	Poor Eyesight & Eye less than 6/8.	Conjunctivitis.	Granular Conjunctivitis.	Discharge Ears.	Enlarged Tonsils and Adenoids.	Teeth more than 3 bad.	Enlarged Spleen.	Deformities.	Specific Infectious Disease.	Ankylostomiasis.
CENTRAL DISTRICT.																						
<i>Malay Boys' School.</i>																						
1	Permatang Pauh	74	8	3	...	11	4	3	1	2	2	...	6	5	...	...	25	9	7	...	...	...
2	Permatang Toh Kandu	65	4	4	...	4	...	4	1	...	3	...	...	...	...	...	1	1	1	...	...	...
3	Sungei Rambai	115	...	14	...	7	...	6	3	...	3	...	...	...	...	...	1	1	5	...	...	...
4	Kuban Semang	76	...	18	...	4	...	2	...	...	2	...	...	...	...	...	...	2	6	...	...	...
5	Permatang Pasir	84	1	10	...	10	...	...	...	...	3	...	...	...	...	...	...	4	...	...	...	...
6	Jahlan Bahru	93	...	...	...	1	...	...	...	...	2	...	...	...	...	...	...	3	10	...	...	...
7	Tanah Liat	58	...	8	...	4	...	5	...	...	2	...	...	...	...	...	...	5	3	...	...	...
8	Machang Babok	26	...	...	...	...	...	3	...	...	3	...	...	...	...	...	...	...	...	...	...	...
9	Cherok To Koon	56	...	4	...	1	...	...	...	...	2	...	...	...	...	...	...	...	3	...	...	...
10	Alma	46	...	9	...	2	...	5	...	...	2	...	...	...	...	...	...	...	3	...	...	...
11	Juru	66	...	22	...	2	...	5	...	...	2	...	...	...	...	...	...	2	3	...	...	...
12	Gua Pahu	104	1	24	...	6	...	1	...	...	2	...	...	...	...	...	3	5	7	...	...	...
TOTAL		863	14	116	1	52	4	35	10	2	41	...	6	8	...	...	32	40	56	5	...	...
SOUTHERN DISTRICT.																						
<i>Malay Boys' School.</i>																						
1	Bukit Tambun	48	...	4	...	2	1	3	...	...	3	...	...	...	...	...	...	...	5	...	...	...
2	Changkat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Nibong Tebal	51	...	12	...	1	1	...	1	...	...	...	...	...	...	...	...	3	22	...	...	...
4	Permatang Toh Mahad	35	...	6	...	...	1	...	...	...	...	...	...	...	...	...	...	...	18	...	...	...
5	Pulau Kra	31	1	...	...	3	2	1	...	1	2	...	...	...	...	...	2	4	1	...	...	...
6	Sungei Aceh	157	...	32	...	...	2	10	...	...	3	...	2	...	...	...	...	3	74	...	...	...
7	Sungei Bakap	105	...	...	...	6	...	3	...	...	3	...	...	...	...	...	...	1	23	...	...	...
8	Sungei Duri	70	...	9	...	1	...	4	...	...	5	...	...	...	...	...	...	...	11	...	...	...
9	Sungei Kechil	33	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	10	...	...	...
10	Tasek Junjong	76	...	6	...	1	1	4	...	...	2	...	...	...	...	...	...	3	9	...	...	...
TOTAL		666	1	70	...	14	9	27	1	1	18	1	2	...	...	...	2	14	173	...	...	...

NUMBER OF THE SCHOOLS PENANG ISLAND, PROVINCE WELLESLEY AND DINDINGS.

	Total Number of Schools.	Number Examined.	General Condition Not Good.	Vaccination Needed.	Cardiac.	Anemic.	Respiratory System.	Scabies.	Ulcers.	Ringworm.	Yaws.	Syphilis.	Poor Eyesight, 1 Eye less than 6/8.	Conjunctivitis.	Granular Conjun- ctivitis.	Discharge from Ears.	Enlarged Tonsils & Adenoids.	Teeth more than 3 bad.	Enlarged Spleen.	Deformities.	Specific Infectious Disease.	Ankylostomiasis.
Penang Island	...	44 7,455	186	361	4	199	109	342	49	105	184	1	485	20	5	9	902	1,021	457	5	3	180
Province Wellesley.	...	56 3,926	157	479	8	229	35	208	45	20	191	1	28	52	9	22	262	237	438	9	...	1
Dindings	...	3 147	11	11	1	2	1	10	...	2	2	...	...	1	...	1	...	27	37	...	...	...
Total	103	11,528	354	851	13	430	145	560	94	127	377	2	513	83	14	32	1,164	1,285	932	14	3	181

IV.—MALACCA SCHOOLS (EXCLUDING VERNACULAR SCHOOLS).

REPORT BY F. W. WOOLRABE, M.R.C.P., D.P.H.

Number of pupils examined	...	...	...	219
General condition less than fair	...	...	...	21
Vaccination marks absent or unsatisfactory	...	...	...	13
Uncompensated cardiac lesions (Dilatation)	...	...	...	1

Skin.—

Scabies	...	...	...	...	9
Ringworm	...	...	...	...	3
Abscess	...	...	...	...	1

Throat and Nose.—

Cleft palate and hare lip	...	...	...	...	1
Enlarged tonsils	...	...	...	...	22

Eye.—

Strabismus	...	...	...	...	2
------------	-----	-----	-----	-----	---

Ear.—

Deafness including slight cases	...	...	...	...	1
Discharged	...	...	...	...	—

Teeth.—

Decayed	...	...	...	...	84
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Spleen.—

Palpable	...	...	...	...	1
----------	-----	-----	-----	-----	---

Anæmia	...	...	...	...	1
--------	-----	-----	-----	-----	---

Treatment.—Cases visit the Government Dispensary.

Report on Medical Examination of Vernacular Schools, Malacca:—

Number of pupils examined	...	...	...	2,745
General condition less than fair	...	...	...	125
Vaccination marks absent or unsatisfactory	...	...	...	252
Uncompensated cardiac lesions	...	...	...	3

Skin.—

Scabies	...	...	...	...	374
Yaws	...	...	...	...	55
Ringworm	...	...	...	...	9

Throat and Nose.—

Cleft palate and hare lip	...	...	...	3
Nasal obstruction	...	...	...	2
Enlarged tonsils	...	...	...	307

Eye.—

Visual acuity less than 6/9	...	...	...	3
Trachoma	...	...	...	7

Teeth.—

Decayed (3 or less)	...	...	...	827
Decayed (more than 3)	...	...	...	99

Spleen.—

Palpable	...	...	...	80
Anæmia	...	...	...	17

Treatment.—A dresser visited after each inspection for revaccination and treatment of skin diseases and yaws. Yaws treatment was most satisfactory.

V.—LABUAN SCHOOLS.

Fifty-six Pupils of the *Government English School* were examined, whose average age was 12·8 years. Only two of these showed Splenic enlargement, a percentage of very nearly 3·6.

Twenty-nine of these boys or just over half of the total were distinctly under weight.*

Sixty-six Pupils of the *Vernacular School* were examined with an average age of 10·4 years. Twelve of these showed enlargement of the Spleen, giving a percentage of very nearly 18·2.

Fifteen of these boys or less than $\frac{1}{4}$ of the whole number were distinctly under weight*. The boys attending the English School live chiefly in or near the town. The boys from the Malay Vernacular School live chiefly in country districts.

Treatment.—All pupils found suffering from diseases requiring treatment were offered treatment. Many of these presented themselves, but it was found difficult to get all of them to have their badly carious teeth extracted. All of those found unvaccinated have now been vaccinated.

* *i.e.*, 20 per cent less than normal weight in relation to height.

The following Table gives details summarised for both schools in Labuan.

Schools Examined.	Pupils N o. E x a - mined.	General condition not good.	Vaccination needed.	Cardiac Disease.	Diseases of Respira- tory system.	Scabies.	Sores.	Ringworm.	Yaws.	Eczema.	Poor eye sight 1 eye less than 6/8.	Conjunctivitis.	Discharge from ears.	Enlarge tonsils and Adenoids.	Caries of more than 3 teeth.	Enlarged spleen.	Deformities.	Mental deficiency.
2	122	13	23	1	5	3	2	1	1	3	1	2	2	45	9	14	2	1

APPENDIX D.

METEOROLOGICAL RETURN FOR THE YEAR 1923

Singapore.

	TEMPERATURE.						RAINFALL.		WINDS.			REMARKS.
	Mean Solar Maximum.	Mean Minimum on Grass.	Absolute Shade Maximum.	Absolute Shade Minimum.	Absolute Range.	Monthly Mean Shade Temperature.	Amount in m. m.	Degree of Humidity.	General Direction.	Average Force.	Total amount of Evaporation in m. m.	
	°F	°F	°F	°F	°F	°F	M. M.	%		Not re-coved.		
January ...	134.6	71.4	89	70	19	79.0	401.09	85	N., N.W.	3.70	44.99	up to 10th May. not recorded.
February ...	154.6	71.3	92	70	22	79.2	47.00	77	N., N.W.	2.79	68.93	
March ...	154.5	71.8	92	71	21	79.5	250.77	83	N., N.W.	2.11	62.62	
April ...	151.9	80.1	92	73	19	81.0	80.97	80	N., N.E.	2.05	66.15	
May ...	146.6	71.6	93	73	20	80.8	111.83	80	S., S.W.	2.19	20.42	
June ...	143.8	71.6	91	71	20	80.9	109.91	83	E. S.	2.21	...	excepting last 21 days of May and 30 days of June.
July ...	136.0	70.0	90	70	20	79.7	231.63	83	S., S.W.	3.44	50.39	
August ...	139.2	71.2	90	71	19	80.8	144.55	77	S.E., S.W.	2.73	59.27	
September ...	133.6	72.4	91	72	19	80.0	134.71	80	S., S.W.	2.03	56.12	
October ...	138.0	71.3	91	72	19	79.6	87.73	82	S., S.W.	1.87	54.42	
November ...	139.5	73.1	92	71	21	79.5	107.31	83	S.W., W.	2.44	47.84	
December ...	114.5	71.4	91	71	20	78.8	214.00	86	N., N.W.	2.50	35.38	
Mean ...	140.5	72.2	93	70	23	79.9	1,981.50	81	—	566.53		

Penang and Dindings.

METEOROLOGICAL RETURN FOR THE YEAR 1923.

	TEMPERATURE.						RAINFALL.		WINDS.		REMARKS.
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean Shade.	Amount in m.m.	Degree of Humidity.	General Direction.	Average Force.	
	F.	F.	F.	F.	F.	F.		F.			
January ...	153	68	94	68	26	79.6	127	85.1	N.		
February ...	154	70	93	70	23	78.6	66	85.1	N.W.		
March ...	152	69	95	69	26	81.9	155	84.6	N.W.		
April ...	152	69	92	70	22	84.8	119	78.7	S.		
May ...	152	68	94	70	24	83.1	451	84	N.W.		
June ...	152	68	93	70	23	81.9	369	87	S.		
July ...	148	69	92	69	23	82.8	147	84.8	N.W.		
August ...	150	69	92	69	23	82.8	248	89.3	N.E.		
September ...	159	69	92	68	24	81.4	560	87.9	N.W.		
October ...	155	69	92	70	22	80.3	711	86.8	N.W.		
November ...	156	69	98	70	28	83.0	375	83	N.W.		
December ...	155	69	94	70	24	83.3	117	82.6	N.W.		
Mean ...	159	68	98	68	28	81.9	3,443	84.9	N.W.		

METEOROLOGICAL RETURN FOR THE YEAR 1923.

Malacca.

	TEMPERATURE.						RAINFALL.		WINDS.		REMARKS.
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean Shade.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
	F.	F.	F.	F.	F.	F.	M.M.	%			
January ...	113.0	—	87	72	15	—	226.00	83	N.		
February ...	124.0	—	89	73	16	—	54.00	80	N.		
March ...	132.0	—	90	72	18	—	131.00	76	N.		
April ...	140.0	—	90	73	17	—	343.00	79	N.		
May ...	132.0	—	89	73	16	—	267.00	80	N.W.		
June ...	131.0	—	89	72	17	—	91.00	81	N.W.		
July ...	131.0	—	89	72	17	—	143.00	82	N.W.		
August ...	130.0	—	89	72	17	—	180.00	83	N.W.		
September ...	132.0	—	89	72	17	—	257.00	85	N.W.		
October ...	131.0	—	90	72	18	—	242.00	85	N.W.		
November ...	131.0	—	90	71	19	—	304.00	83	N.W.		
December ...	127.0	—	89	71	18	—	169.00	84	N.E.		
Mean ...	...	—	...	...	...	—	...	...	...		

METEOROLOGICAL RETURN FOR THE YEAR 1923.

Labuan.

	TEMPERATURE.						RAINFALL.		WINDS.		REMARKS.
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in m.m.	Degree of Humidity.	General Direction.	Average Force.	
	F.	F.	F.	F.	F.	F.	M. M.	%			
January ...	135.9	—	84.9	75.5	9.4	80.2	236.8	82	N.	2	
February ...	126.1	—	86.2	76.0	10.2	81.1	175.0	83	N., N.W.	2	
March ...	...	—	86.1	75.2	10.9	80.6	105.0	83	N., N.W.	2	
April ...	...	—	89.4	77.0	12.4	83.2	324.0	81	N.	2	
May ...	...	—	88.8	76.9	11.9	82.8	222.0	81	N.	2	
June ...	142.8	—	89.5	77.9	11.6	83.7	98.5	78	N.	2	Light wind many calm days.
July ...	141.1	—	87.2	75.7	11.5	81.4	236.5	81	N.	2	
August ...	144.0	—	88.4	77.0	11.4	82.7	319.0	81	N., N.W.	2	
September ...	144.6	—	86.3	75.6	10.7	80.9	273.5	84	N.	2	
October ...	143.6	—	86.4	75.6	10.8	81.0	449.0	84	N., N.W.	2	
November ...	149.4	—	86.4	76.0	10.4	81.2	274.5	84	N.	2	Light winds many calm days.
December ...	147.4	—	86.6	76.9	9.7	81.7	244.0	81	N., N.E.	3	
	1,274.9	—	1,046.2	915.3	130.9	980.5	2,957.8	983		25	
Mean ...	141.6	—	87.1	76.2	10.9	81.7	246.5	81.9		2	

IV.—Resume of Singapore Meteorology 1923.

	—	Inches.	Barometer mb.	SHADE TEMPERATURE F°.				Mean sea Temp.	Highest wet Bulb.	M. M.
				Highest Max.	Lowest Min.	Mean Max.	Mean Min.			
January	...	...	1,015.0	89.0	70.0	84.6	73.8	79.0	81.0	401.09 (Wettest month.)
February	...	...	1,015.6	92.0	70.0	88.8	72.7	74.0	81.0	47.00 (Driest month.)
March	...	...	1,015.7	92.0	71.0	88.5	73.4	84.0	85.0	250.77
April	...	...	1,013.6	92.0	73.0	89.7	75.0	83.0	85.0	80.97
May	...	...	1,014.9	93.0	73.0	88.2	75.4	87.0	82.0	111.83
June	...	...	1,013.6	91.0	71.0	89.1	75.6	83.0	86.0	109.91
July	...	...	1,014.2	90.9	70.0	87.5	74.3	85.0	85.0	231.63
August	...	...	1,014.1	90.0	71.0	84.8	75.8	85.0	82.0	144.55
September	...	...	1,014.8	91.0	72.0	84.6	75.0	82.0	80.0	134.71
October	...	...	1,015.6	91.0	72.0	88.2	73.6	85.0	82.0	87.73
November	...	...	1,015.2	92.0	71.0	88.2	73.5	83.0	81.0	167.31
December	...	...	1,014.8	91.0	71.0	86.7	72.6	85.0	81.0	214.00
Totals or Means or Extremes	...	...	1,014.7	93.0	70.0	87.4	74.2	83.0	86.0	1,981.50

METEOROLOGICAL.

Rainfall.—

Penang	... District Hospital	3443	Millimetres.
Province Wellesley	Butterworth	2745	"
	Bukit Mertajam	2916	"
	Sungei Bakap	2253'50	"
	Penaga	2535	"
Dindings	... Lumut	1692'25	"

Wettest month.—

m.m.

Penang	... Prison	711'00	October.
Province Wellesley	Butterworth	673'25	October.
	Bukit Mertajam	671'00	October.
	Sungei Bakap	431'00	October.
	Penaga	605'00	October.
Dindings	... Pangkhor	1210'00	December.

Driest month.—

Penang	... Balik Pulau	29'50	January.
Province Wellesley	Butterworth	49'25	February.
	Bukit Mertajam	133'50	March.
	Sungei Bakap	53'00	February.
	Penaga	43'00	March.
Dindings	... Lumut	45½	July.

Average day temperature.—

F

Penang Island	...	...	82'3
Province Wellesley	...	...	90'6
Dindings	...	...	87'3

Average night temperature.—

Penang Island	...	...	81'2
Province Wellesley	...	...	72'9
Dindings	...	...	73'8

APPENDIX E.

I.—SINGAPORE.

General Hospital.

REPORT BY J. S. WEBSTER, M.B., D.P.H., Acting Chief Medical Officer.

1. *Singapore.*—Dr. JOHN GRAY, Chief Medical Officer, Singapore, was in charge until his departure on leave on April 10th; from that date until his return on October 26th the post was filled by Drs. W. A. TAYLOR and J. S. WEBSTER. The latter again took over on December 6th.

2. *Work done.*—A comparative table from 1918 to 1923 is attached:—

Year.	Number of patients treated in 1st and 2nd Class Wards.	Died.	Percent-age.	Number of patients treated in 3rd Class Wards.	Died.	Percent-age.
1918	1,206	59	4'89	4,683	499	13'01
1919	1,558	83	5'32	4,771	470	9'85
1920	1,812	91	4'96	5,925	518	8'74
1921	1,638	87	5'37	6,532	579	7'94
1922	1,832	76	4'14	6,010	451	7'50
1923	2,002	62	3'10	5,836	360	6'17

3. *Maternity Wards*.—Dr. J. S. ENGLISH, Professor of Midwifery was in charge. There were 567 admissions as compared with 540 in 1922.

The nationalities of the cases were as follows:—

	1922.	1923.
Europeans	122	117
Eurasians	27	25
Chinese	276	262
Tamils	52	77
Sikhs and Northern Indians	32	37
Japanese	23	38
Other Nationalities	8	17
Total	540	567

4. The work of the X-ray Department continues to increase; 2,907 radiograms were taken during the year as against 1,077 in 1922 and 734 in 1921. Dr. J. S. WEBSTER, was in charge of this Department, and of the medical wards. One hundred and fifteen Barium meals were administered. Some apparatus for the equipment of an electrical department has been purchased during the year.

5. *Chief Diseases*.—The chief medical diseases treated in the wards are stated below and compared with the previous years:—

<i>Diseases.</i>	1923.	1922.	1921.	1920.	1919.	1918.
Malaria ...	463	542	760	977	766	1,067
Enteric Fever ...	27	46	68	6	65	118
Phthisis ...	161	130	217	210	209	160
Dysentery { amœbic bacillary }	84 21	115	120	123	205	84
Venereal Disease ...	736	420	615	621	432	373
Beri-beri ...	62	85	90	20	65	95
Pneumonia (Lobar) ...	98	167	213	174	137	119
„ (Broncho) ...	60	106	122	152	62	92
Ankylostomiasis ...	157	401	439	172	143	195

6. Dr. J. S. ENGLISH took charge of the Gynæcological cases in December.

7. The construction of the new hospital is proceeding apace. The first unit to be completed was the Attendants' Quarters on Outram Road, which was occupied in August; this was followed by the Sisters' Quarters (one half) which was completed and taken over in October; two bungalows for Senior Attendants were finished and occupied in December. On December 15, the Female block was handed over and opened for the reception of patients. The following units are nearing completion:—

Block D for 1st Class male patients.

Blocks C and D for 3rd Class male patients.

The 3rd Class Kitchen block.

The married Dressers' Quarters.

Despite the disturbance of the ground by the building operation no mosquito larvæ have been found on the hospital grounds.

The new theatre for the Maternity block has also been completed, and is now in use.

8. Mr. K. BLACK, F.R.C.S., England, Ophthalmic Surgeon, reports as follows:—There were 319 new cases treated in the Eye Clinic at the General Hospital during the course of the year. Each attended on an average three times for diagnosis and treatment, making approximately 900 attendances.

The number of serious eye cases admitted to the hospital is increasing. Remarkable success has been obtained in gonorrhœal ophthalmia from intra-muscular injections of sterile milk, together with 30 per cent solution of Magnesium Sulphate irrigations of the conjunctival sac.

9. Mr. C. J. SMITH, F.R.C.S., Edin., Senior Surgeon, was in charge of the Surgical Wards until August 13, when he went on leave. After that date the surgical work was carried out by Mr. K. BLACK, F.R.C.S., Eng.

Surgical Report, General Hospital, 1923, by Mr. K. BLACK, F.R.C.S., England, Acting Senior Surgeon:—

<i>Pathological condition and nature of operation.</i>	<i>Total No. of cases.</i>	<i>Cured.</i>	<i>Relieved.</i>	<i>Died.</i>
<i>Amputation.—</i>				
Forearm or hand ...	4	4	—	—
Foot or leg ...	2	2	—	—
<i>Operations on Muscles, Tendons, Ligaments and Fasciæ.—</i>				
Uniting divided tendon ...	4	4	—	—
<i>Operation on Lymphatic System.—</i>				
Excision of Lymphatic Glands ...	39	39	—	—
<i>Operations on Heart and Blood Vessels.—</i>				
Aneurysm, Excision of Sac ...	1	1	—	—
Transfusion of Bloods ...	1	1	—	—
Excision of Varicose Veins of Legs ...	4	4	—	—
<i>Operations on Bones.—</i>				
Sequestrotomy ...	3	3	—	—
Wiring or pegging fractures ...	9	9	—	—
Plating fractures ...	5	5	—	—
Bone Grafting ...	1	—	1	—
<i>Operations on joints.—</i>				
Arthrotomy ...	3	3	—	—
Arthrectomy ...	3	3	—	—
<i>Operations on Skull.—</i>				
Trephining ...	5	4	—	1
<i>Operations on Ear.—</i>				
Excision of Tumours ...	1	1	—	—
Radical Mastoid Operations ...	3	3	—	—
<i>Operations on Lips, Mouth and Salivary Glands.—</i>				
Repair of Hare Lip ...	9	9	—	—
Repair of Cleft Palate ...	3	3	—	—
Excision of Carcinoma of Cheek ...	2	2	—	—
Excision of Jaw ...	3	2	—	1
Excision of Tongue ...	4	4	—	—
Enucleation of Tonsils and removal adenoids ...	58	58	—	—
Excision Parotid Tumours ...	1	1	—	—

<i>Pathological condition and nature of operation.</i>	<i>Total No. of cases.</i>	<i>Cured.</i>	<i>Relieved.</i>	<i>Died.</i>
<i>Operations on Oesophagus.—</i>				
Oesophagoscopy ...	1	—	1	—
<i>Operations on Nose and Nasal Sinuses.—</i>				
Turbineotomy ...	8	8	—	—
Submucous Resection of Septum ...	7	7	—	—
Opening Masillary Antrum ...	6	6	—	—
Opening Frontal Sinus ...	1	1	—	—
<i>Operations on Eyes.—</i>				
Removal foreign body ...	2	2	—	—
For Pterygium ...	1	1	—	—
Plastic for entropion ...	2	2	—	—
Excision Lachrymal Sac ...	1	1	—	—
Iridectomy ...	1	1	—	—
Extraction of Cataract ...	8	8	—	—
Evisceration of Eye ...	4	4	—	—
Eneucleation of Eye ...	1	1	—	—
<i>Operations on Breast.—</i>				
Excision of Adenoma ...	2	2	—	—
Excision of Cyst ...	1	1	—	—
Complete Amputation ...	6	6	—	—
<i>Operations on Thorax.—</i>				
Stab Wounds, Exploration ...	3	2	—	1
Resection Rib for Empyema ...	4	4	—	—
<i>Operations for Hernia.—</i>				
Radical Cure of Hernia ...	57	57	—	—
For Strangulated Hernia ...	6	5	—	1
Removal of foreign body from Hernia ...	1	1	—	—
Secondary suture of Abdominal Hernia ...	2	2	—	—
<i>Abdominal Operations.—</i>				
Exploratory Laparotomy ...	33	24	—	9
Gastro-jejunostomy ...	4	3	—	1
Gastrectomy ...	2	—	2	—
Perforated Duodenal Ulcer ...	1	1	—	—
Splenectomy ...	1	1	—	—
Liver Abscess, Opening and drainage ...	1	1	—	—
Cholecystostomy ...	7	4	—	3
Cholecystectomy ...	2	2	—	—
Cholecysto-duodenostomy ...	1	1	—	—
Intestinal Anastomosis ...	4	3	—	1
Acute Intestinal Obstruction ...	2	—	—	2
Acute and Chronic Appendectomy ...	88	22	—	6
Resection of Intestine ...	2	2	—	—
Colotomy ...	1	1	—	—
Plication of Colon ...	1	1	—	—

<i>Pathological condition and nature of operation.</i>	<i>Total No. of cases.</i>	<i>Cured.</i>	<i>Relieved.</i>	<i>Died.</i>
<i>Operations on Rectum and Anus.—</i>				
Excision of Hæmorrhoids ...	19	19	—	—
Partial Excision of Rectum ...	2	2	—	—
Isebio-rectal Abscess ...	7	7	—	—
<i>Operations on Kidneys, Ureters and Bladder.—</i>				
Nephropexy ...	1	1	—	—
Ligature Ureter ...	1	1	—	—
Transplantation of Ureters ...	1	—	—	1
Litholapaxy ...	2	2	—	—
Suprapubic Cystotomy ...	4	4	—	—
<i>Operations on the Male Generative Organs.—</i>				
Amputation of Penis ...	1	1	—	—
Hydrocele, radical cure of ...	13	13	—	—
Epididymectomy ...	1	1	—	—
Excision Testis ...	1	1	—	—
Removal of Urethral Calculus ...	2	2	—	—
Prostatectomy ...	1	1	—	—
Excision of Varicocele ...	2	2	—	—
<i>Operations on the Female Generative Organs.—</i>				
Ovariectomy ...	9	9	—	—
Salpingectomy ...	7	6	—	1
Laparotomy and correction of displaced uterus ...	8	8	—	—
Hysterectomy ...	14	10	—	4
Ectopic Gestation, Removal of ...	8	8	—	—
Perineorrhaphy ...	7	7	—	—
Amputation Uterine cervix ...	1	1	—	—
Total ...	555	519	4	32

In addition there were 2,519 Minor Operations, making a gross total for the year 3,074 operations with 32 deaths, or a mortality percentage of 1 only.

The minor operations include 10 Sigmoidoscopies and 98 Cystoscopies; in many instances of the latter, ureteral catheterisation with the injection of Silver Nitrate into the renal pelvis was performed.

There were 20 Uterine Curettings and 7 Minor Amputations.

FREE MATERNITY HOSPITAL.

REPORT BY J. S. ENGLISH, M.D., L.M. (Rot.), *Professor of Midwifery.*

During 1923, 904 women were admitted and 797 women were delivered an increase over last year of admitted 239 and delivered 151.

Many of the 107 patients who are discharged undelivered were admitted for Antenatal complications and relieved.

There were born 412 males and 393 females. The nationalities of the mothers were as follows:—

Chinese	...	...	...	...	685
Ceylonese	...	...	...	...	3
Sikh	...	...	...	...	3
Annamites	...	...	...	...	2
Japanese	...	...	...	...	11
Tamils	...	...	...	...	72
Eurasians	...	...	...	...	13
Portuguese	...	...	...	...	3
Malays	...	...	...	...	5

There were 5 Adult deaths due to:—

Septicæmia	...	...	...	...	1
Sloughing of Vagina	...	...	...	...	1
Embolism of lungs	...	...	...	...	1
Embolism of Coronary Artery	...	...	...	...	1
Shock	...	...	...	...	1

There were 45 still-born babies, of these 12 were macerated, and 21 premature babies died.

There were 298 complicated cases.

During the year the accommodation was taxed to its utmost capacity, many patients having to be sent away from time to time.

TAN TOCK SENG'S HOSPITAL.

REPORT BY E. D. LINDOW, M.R.C.S., L.R.C.P.

1. *Work done.*—

Remained on 31st December, 1922	...	...	690
Admitted during 1923	...	...	8,906
			9,596
Discharged	...	...	7,602
Died	...	...	1,300
Remained on 31st December, 1923	...	...	694
			9,596

2. The average of daily sick was 672.91 as compared with 689.20 in 1922.

3. The percentage of deaths to total treated was 13.54 compared with 13.92 in 1922.

4. The total number of deaths was 1,300, of these 216 died within 24 hours of admission. Deducting these the death-rate was 11.29 per hundred. Of this total 379 or 23 per cent were accounted for by Tuberculosis.

5. Average stay in hospital of those discharged was 23.86 days, of those dying 14.09, and of those remaining 115.55 days.

6. *Malaria.*—Total number of cases treated 1,596 with 134 deaths, a rate of 8.4 per cent.

Types of Malaria.—

			<i>Cases treated</i>	<i>Deaths.</i>
			—	—
Benign Tertian	...	...	196	2
Sub-tertian	...	...	624	102
Quartan	...	...	76	2
Mixed	...	...	64	3
Chronic	...	...	272	23
Unclassified	...	...	364	2
			1,596	134

NOTE.—Unclassified includes all cases which were clinically Malaria and responded to treatment, but in which the parasites were not found.

Blood examinations were carried out in all fever cases, and the figures given below represent the number of specimens examined not the number of cases:—

Sub-tertian	...	...	...	...	807
Benign tertian	...	...	...	...	221
Quartan	...	...	...	...	90
Mixed	...	...	...	...	118
Negative	...	...	...	...	3,717
					4,953

Seasonal Incidence of Malaria.—The curve shown is what is naturally to be expected. The monthly admissions were lowest in February and April 117, increasing steadily to reach the maximum in June 202, then declining gradually to 118 in October, and remaining stationary until the end of the year.

7. *Dysentery.*—Number of cases treated 404, of which 162 died, giving a death-rate or 40·09 per cent compared with 58·09 per cent in 1922.

Types of Dysentery.—

			<i>Cases.</i>	<i>Deaths.</i>
			—	—
Amœbic	...	...	184	74
Bacillary	...	...	185	65
Chronic	...	...	17	12
Mixed	...	...	18	11
			404	162

8. *Beri-beri.*—The numbers of admission have decreased from 780 in 1922 to 483 this year. The number of deaths was 64 giving a percentage of 13·25 compared with 14·57 in 1922. Eighty-one cases were transferred to Pasir Panjang.

Comparative figures for five years:—

		1919.	1920.	1921.	1922.	1923.
		—	—	—	—	—
Cases	...	700	136	297	730	483
Deaths	...	78	14	75	107	64
Percentage Mortality	...	11·14	10·0	25·25	14·57	13·25

The highest monthly admissions were during December and January, the wet months, viz., 50 and 49 respectively, and the lowest in May 24, otherwise the curve was practically constant.

9. *Enteric Fever*.—There were 43 cases treated, and 20 deaths, a rate of 46·57 per cent compared with 68·75 per cent in 1922.

10. *Venereal Disease*.—One thousand two hundred and fifteen cases compared with 1,307 in 1922, with 91 deaths compared with 65.

			Cases.	Deaths.
			—	—
Syphilis Primary	...	...	283	Nil
Syphilis Secondary	...	...	676	2
Syphilis Tertiary	...	...	256	89
			—	—
			1,215	91
			—	—

Included in tertiary syphilis are those cases involving the central nervous system, circulatory system, respiratory system and those complicated by Hepatic Cirrhosis and Chronic Nephritis.

			Cases.	Deaths.
			—	—
Chancroid	...	...	115	Nil
Gonorrhœa, urethritis	...	...	104	Nil
Gonorrhœa, other manifestations	...	...	77	Nil

The further increase in number of deaths due to Syphilis is due to the fact that they are classified according to the cause, *i.e.*, Syphilis instead of being classified under the name of the organ affected.

Treatment of Syphilis.—

Mercurial preparations	...	...	...	1,515 given.
Arsenical preparations	...	...	...	899 „

Sodium Bismuth Tartrate was extensively tried 1,663 injections being given. The preparation is standardized to contain 0·2 gram. in 1 cc. The initial dose being 1 cc. gradually increased to 2 cc. Results are comparable with treatment by Mercury only, over which it has the advantage of being painless. The great disadvantage is that in most cases, after 5 or 6 injections, the patient develops a severe stomatitis, thus the true value of the drug cannot be ascertained.

11. *Helminthiasis*.—The stools of all patients were examined microscopically on admission, as a routine, with the following results:—

			Cases.
			—
Ankylostoma ova	...	...	1,195
Ankylostoma ova and Round-worm	...	...	239
Ankylostoma ova and Whip-worm	...	...	176
Ankylostoma ova, Whip-worm and Round-worm	...	...	89
Round-worm only	...	...	935
Round-worm and Whip-worm	...	...	270
Whip-worm only	...	...	580
Negative	...	...	5,347
			—
			8,831
			—

Percentage of infection with:—

Ankylostomes, including Mixed infections.	...	19.2%
Round-worms		17.4%
Whip-worms		12.7%

The total number of stools examined was 9,554 with the following results:—

				Cases.
				—
Ankylostoma ova	...	...	...	1,273
Ankylostoma ova and Round-worm ova	...	...	...	247
Ankylostoma ova and Whip-worm ova	...	...	...	189
Ankylostoma ova, Whip-worm and Round-worm	...	...	...	94
Round-worm ova	...	...	...	987
Round-worm ova and Whip-worm	...	...	...	281
Whip-worm ova	...	...	...	618
Amœbæ	...	...	...	158
Negative	...	...	...	5,707
				9,554

12. *Ankylostomiasis*.—There were 329 cases where ankylostomiasis was the principal disease with 19 deaths, a rate of 5.77 per cent compared with 9.52 per cent in 1922.

Treatment of Ankylostomiasis.—During the first half of the year Carbon tetrachloride was used for treatment of case, the next four months oil of chenopodium was used, and then mainly Carbon tetrachloride at the end of the year.

Analysis of 277 cases:—

	Average No. of worms.	Cure.
One dose of Oil of chenopodium	... 23	77%
One dose of Carbon tetrachloride	... 24	72.5%

The largest number of worms passed by one patient was 446 after one dose of carbon tetrachloride.

In cases where two treatments were given:—

Oil of chenopodium expelled 66 per cent of worms after 1st treatment.

Carbon tetrachloride expelled 70 per cent of worms after 1st treatment.

Ninety per cent of cases are cured with two treatments of either drug, and some patients show marked resistance as shown by the two following cases:—

Case 1.—

1st day, Carbon tetrachloride, 63 worms passed, Ova persist.

8th day, Chenopodium, 34 worms passed, Ova persist.

13th day, Chenopodium, no worms passed, Ova persist.

22nd day, Carbon tetrachloride, 2 worms passed, Ova persist.

29th day, Chenopodium, 14 worms passed, Ova persist.

36th day, Chenopodium, 72 worms passed, Ova persist.

This patient declined further treatment and left hospital:—

Case 2.—

1st day, Chenopodium, 2 worms, Ova persist.
5th day, Chenopodium, 169 worms, Ova persist.
9th day, Chenopodium, 14 worms, Ova persist.
18th day, Chenopodium, 27 worms, Ova persist.
29th day, Carbon tetrachloride, 11 worms, cured.

Deaths.—Six cases died within two weeks of treatment with carbon tetrachloride, in three of which death was obviously not connected with the treatment. Of the three remaining two died of beri-beri and one from Ankylostomiasis. These cases did not show the degenerative changes associated with carbon tetrachloride poisoning.

Six cases died within two weeks of treatment with Oil of Chenopodium. One, an old man of 64 with Chronic Parenchymatous Nephritis may have been adversely affected by the drug.

Conclusions.—Carbon tetrachloride and Oil of chenopodium are both equally good anthelmintics, equally efficient, and the risks attached to each equally great. The majority of patients show very little ill effects with either drug, but they generally prefer Carbon tetrachloride as its taste is not so objectionable, and it involves no preliminary preparation, and is cheaper.

13. *Tuberculosis.*—Seven hundred and eight cases were treated, of which 621 were pulmonary. There were 379 deaths, a death-rate of 53·53 per cent compared with 57·01 pr cent in 1922. Two thousand six hundred and twenty-three specimens of sputum were examined. Positive 529 and negative 2,094.

14. *Ulcers.*—Nine hundred and fifty-eight cases were treated. Tartar Emetic was discontinued as its value seemed very doubtful. A few cases have been treated with Tinc Iodi 2½ per cent, 1 cc. in 10 cc. distilled water, given intravenously, with promising results.

15. *Plague.*—There were 12 cases of plague, 11 Bubonic, 1 Septicæmic, 5 died and 7 were transferred to the Middleton Hospital. Thirty-six smears were examined, 5 positive and 31 negative.

16. *Medico legal.*—Eighty-nine bodies were sent by H. M. Coroner for post-mortem examination. Seven cases died on their way to hospital, and 1,153 were brought by the Police for treatment. Two hundred and seven cases were sent for observation as to insanity, 130 were certified.

17. *Dressers.*—All dressers are accommodated on the premises. They all receive regular instructions and examinations were held at intervals. A large number of applications were made for these appointments.

18. Dr. R. B. MACGREGOR was in charge until 7th, December, 1923, when Dr. E. D. LINDOW took over from him.

Mr. K. BLACK, F.R.C.S., England, was in Surgical charge until 11th August, 1923, when he was relieved by Dr. W. M. CHAMBERS.

SURGERY—NATIVE HOSPITAL—1923 REPORT BY W. M. CHAMBERS, M.D.,
Acting Surgeon.

Nature of Operation.		No. of Cases.	Results.
<i>Gynaecological Operations.—</i>			
Oophorectomy	...	1	C
Salpingectomy	...	2	C
Curetting	...	2	1C 1R
Hysterectomy	...	3	2C 1D
Removal Neoplasm broad ligment	...	1	D
Amputation of breast	...	3	C
<i>Abdominal Operations.—</i>			
Laparotomy	...	12	3C 6D 3R
Draining Liver abscess	...	7	5C 2D
Cholecystotomy	...	4	2C 1D 1R
Splenectomy	...	1	D
Repair ruptured Spleen	...	1	C
Gastro Jejunostomy	...	8	4C 3D 1R
Re-section of bowel	...	1	D
Appendectomy	...	4	C
Draining Appendix abscess	...	4	2C 2D
Hernia (1) Radical cure	...	17	C
(2) Strangulated	...	6	C
<i>Thorax.—</i>			
Exploratory operation	...	3	1C 2D
Re-section of Rib	...	3	2C 1D
<i>Lymphatic Glands.—</i>			
Dissection	...	4	1C 1D 2R
<i>Blood Vessels.—</i>			
Ligature of arteries	...	3	C
Mæmorrhoids	...	8	C
<i>Bones and Joints.—</i>			
Trephining	...	10	7C 3D
Bone plating	...	4	C
Wiring bone	...	1	C
Amputations upper limb	...	5	4C 1R
Amputations lower limb	...	8	4C 1D
Opening and scraping antrum of highmore	...	1	C
Sequestrectomy	...	3	C
Radical mastoid	...	1	C
Lengthening tendons	...	1	R
<i>Skin and connective tissue.—</i>			
Removal Neoplasm	...	3	C
Skin grafting	...	4	C
Repair cut throat	...	1	D
For Hare lip	...	5	C
<i>Genito Urinary.—</i>			
Radical cure Hydrocele	...	15	C
Urethrotomy	...	7	C
Removal Scrotum	...	1	C
Repair rupture bladder	...	1	D
Radical cure acute endemic Funiculitis	...	1	C
Supra pubic cystotomy	...	1	C
Orchidectomy	...	2	C

<i>Nature of Operation.</i>	<i>No. of Cases.</i>	<i>Results.</i>
<i>Eye Operations.—</i>		
Iridectomy	3	2c 1R
Removal pterygium	2	C
Cataract extraction	4	C
Enucleation eye ball	3	C
Total Major Operations performed in 1923 ...		242
Mortality		32
Death-rate		13.2%
Total Minor Operations performed in 1923 ...		1,554
tion of ureters		111
tion of ureters		62, 49
Total number of all operations ...		1,796
Total Mortality		33
Total death-rate		1.83%

BERI-BERI HOSPITAL, PASIR PANJANG.

REPORT BY E. R. STONE, M.B., B.Ch., *Medical Superintendent.*

1. There remained on December 31, 1922, seventy-five patients.
2. During 1923, ninety-five were admitted giving a total treated of one hundred and seventy.
3. Of this number sixty were discharged relieved; two were discharged unimproved, two were transferred, twenty-two absconded and fourteen died.
4. There remained on December 31, 1923, seventy patients.
5. The average daily number was 56.25.

BLIND WARD, PASIR PANJANG

REPORT BY E. R. STONE, M.B., B.Ch., *Medical Superintendent.*

1. There remained on 31st December, 1922, forty-five patients.
2. During 1923, ten males were admitted.
3. There remained on 31st December, 1923, thirty-nine patients.
4. The average daily number was 37.74.
5. The ten admissions consisted of:—

Corneal opacity seven; Trachoma one; Staphyloma one; Cataract one.

KANDANG KERBAU HOSPITAL FOR FEMALES.

REPORT BY MRS. L. S. O'MAY, M.B., Ch.B., *Lady Medical Officer.*

Structural alterations in preparation for the transfer of the Free Maternity Hospital to this building began in July, one ward being put out of use then. On December 15, the remaining patients were transferred to the General Hospital and the Kandang Kerbau Hospital was closed for alterations.

In-patients.—

Remained 31st December, 1922 ...	...	93
Admitted 1923 ...	...	802
Total treated ...	...	895
Discharged ...	...	636
Transferred ...	...	1
Absconded ...	...	9
Died ...	...	105
Remained 15th December, 1923 ...	...	51

The nationalities of the patients treated were:—

Chinese	...	...	...	...	460
Indians	...	...	...	...	170
Malays	...	...	...	...	65
Eurasians	...	...	...	...	48
Others	...	...	...	...	59
					802

The average daily number was 87.42 against 88.61 in 1922.

The percentage of deaths was 11.73. Of these deaths 28 occurred within 24 hours of admission.

Children.—Of these 802 in-patients 228 were children. The ages of these were as follows:—

One year or less	...	...	...	...	46
One to two years	...	...	...	...	24
Two to fourteen years	...	...	...	...	158
					228

Of these 228 children 35 (15.3 per cent) died, 19 (8.3 per cent) of these deaths being within twenty-four hours of admission.

Operations.—

Major and minor numbered	...	...	...	...	76
Deaths	...	...	...	...	3

Malaria.—

Numbered	...	...	...	...	23
----------	-----	-----	-----	-----	----

Ankylostomiasis.—

Numbered	...	...	...	...	17
----------	-----	-----	-----	-----	----

Venereal Diseases.—

Numbered	...	...	...	...	155
----------	-----	-----	-----	-----	-----

Microscopical examination.—

Numbered	...	...	...	...	2,457
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	<i>Operation Returns.</i>	<i>Cases.</i>	<i>Deaths.</i>
Laparotomy for removal of Sarcoma Broad Ligament	...	1	1
Laparotomy for pyosalpinx (tubes, ovary, Appendix removal)	...	3	—
Hysterectomy for Cancer Uterus	...	4	1
Removal of Cancer Breast	...	1	—
Re-section of Bowel for Intussusception	...	1	1
Plating of Fractured Tibia	...	1	—
Plastic operation Harelip	...	1	—
Carried forward	...	12	3

<i>Operation Returns.</i>			<i>Cases.</i>	<i>Deaths.</i>
—	<i>Brought forward</i>	...	12	3
Removal Tumour Ear	...	...	1	—
Operation for Pterygium	...	...	2	—
Enucleation of Tonsils	...	...	2	—
Sequestrotomy	...	...	5	—
Incision for Cellulitis Face	...	...	1	—
Incision for Abscess	...	...	18	—
Abscess Jaw incised and scraped	...	...	1	—
Bubo incised	...	...	1	—
Sinus scraped and incised	...	...	2	—
Fistula incised and scraped	...	...	3	—
Incision and scraping for Tubercular Adenitis	...	...	3	—
Paracentesis Abdomen	...	...	19	—
Extraction of Teeth	...	...	6	—
			76	3

II.—PENANG.

REPORT BY W. A. TAYLOR, M.B., CH.B., *Chief Medical Officer.*

Vaccination.—Two thousand six hundred and eight vaccinations were performed by the Government Vaccinators in Penang (outside Municipal Limits) and 5,572 in Province Wellesley.

Malaria.—In Penang Island the deaths reported as malaria for the past five years have been:—

					<i>Deaths.</i>
					—
1919	...	...	...	...	752
1920	...	...	...	...	672
1921	...	...	...	...	620
1922	...	...	...	...	224
1923	...	...	...	...	156

The average death-rate per annum from malaria in quinquennial periods has been:—

					<i>Deaths</i>
					—
1901 - 1905	...	...	...	...	244
1906 - 1910	...	...	...	...	843
1911 - 1915	...	...	...	...	590
1916 - 1920	...	...	...	...	716
1921 - 1923 (4 years)	...	...	...	...	332

The more important cases treated with deaths from the Hospitals in Penang for the same periods were:—

Diseases.	1919.		1920.		1921.		1922.		1923.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Phthisis ...	320	176	299	189	445	180	287	137	445	203
Malaria ...	2,107	175	2,557	150	2,342	121	2,119	107	1,715	103
Dysentery { amœbic bacillary }	493	192	367	105	334	96	412	150	{ 441 133 }	{ 59 43 }
Diarrhœa ...	161	20	157	10	147	4	49	2	110	12
Ankylostomiasis ...	207	42	261	46	614	68	660	40	1,303	19
Venereal Diseases ...	764	31	1,002	24	1,149	13	1,041	17	1,218	41
Influenza ...	472	177	937	118	145	7	177	22	112	7
Tetanus ...	1	1	6	2	4	4	6	3	8	2
Plague ...	5	4	...	...	...	...	...	...	...	...
Cholera ...	285	190	...	...	3	...	...	...	9	2
Small-pox ...	352	108	19	9	45	7	9	2	2	1
Enteric Fever ...	13	4	13	5	8	3	39	1	11	1
Cerebro-Spinal Fever	...	...	...	...	20	9	44	4	10	1
Diphtheria ...	...	...	...	...	2	2	23	1	6	3

Beri-beri.—As usual there were few cases and deaths.

Years.	Cases.	Deaths.
—	—	—
1920 ...	25	6
1921 ...	31	10
1922 ...	9	2
1923 ...	35	9

Venereal Diseases.—The number of venereal diseases treated represents but a small proportion of those infected.

A large proportion of those admitted suffering from other diseases were found to be infected with venereal diseases.

GENERAL HOSPITAL, PENANG.

The numbers treated in the General Hospital during the past five years were:—

<i>Years.</i>		<i>1st and 2nd Class Wards.</i>	<i>Deaths.</i>	<i>Percent- age.</i>	<i>3rd Class Wards.</i>	<i>Deaths.</i>	<i>Percent- age.</i>
1919	...	462	21	4.58	2,994	291	9.75
1920	...	485	36	7.42	2,901	254	8.75
1921	...	398	21	5.27	2,826	220	7.78
1922	...	428	25	5.84	2,418	176	7.27
1923	...	426	14	3.28	2,642	281	10.6

Of the above 14 deaths in the First and Second Class Wards 8 took place within 48 hours of admission. Of the 281 deaths in the Asiatic Wards 71 were within 48 hours: deducting these the death-rates were 1.43 and 8.16 respectively. The number of Police admitted during the year was 193 as compared with 240 in 1922 and 322 in 1921.

The number of free patients treated in the wards of General Hospital was 1,149 compared with 1,304 the previous year, the majority of these cases were "Police Cases".

Four children were admitted and treated free.

KING EDWARD THE VII MATERNITY HOSPITAL, PENANG.

The accommodations for both European and Asiatic patients proved inadequate several times during the year. Additional accommodation is being provided this year.

Table showing the number and nationalities of all patients admitted:—

Particulars.	Europeans.	Eurasians.	Chinese.	Malay.	Siamese.	Indian.	Japanese.	Ceylonese.	Javanese.	Jew.
No. of patients admitted ...	40	10	451	2	3	181	2	2	2	1
" of babies delivered ...	34	8	393	...	1	130	2	2	1	1
" of still-born cases ...	...	1	18	1	1	18	...	...	...	...
" of deaths ...	...	...	12	...	1	5	...	...	...	...
" of abortion cases ...	...	...	1	...	...	1	...	...	...	...
" admitted and left before confinement ...	...	1	26	...	...	27	...	...	1	...
" admitted for curetting ...	4	...	1	...	...	...	...	...	...	...
" of babies admitted ...	...	...	68	...	...	8	...	...	...	...
" do. died ...	...	...	37	...	...	5	...	...	...	...
" of patients for examination ...	2	...	...	...	...	...	...	...	...	...

Out-door attendances numbered 227. The chief diseases treated were gastric and digestive troubles and bronchitis.

Fifteen midwives were trained during the year, their nationalities being:—

European	...	...	...	...	...	1
Chinese	...	...	...	...	...	11
Malay	...	...	...	...	...	3

DISTRICT HOSPITAL.

REPORT BY A. N. KINGSBURY, M.B., B.S., *Acting Government Pathologist.*

During 1923, a total of 5,371 patients were treated in the hospital, including those in the wards on the night of December 31, 1922. The corresponding figures for 1922 and 1921 were 6,022 and 6,596 respectively. Chinese accounted for 55 per cent, Tamils for 40 per cent, and Malays for 1 per cent only of the admissions. The remaining 4 per cent included English, French, Eurasians, Philipinos, Japanese, Siamese, Javanese, Malayalams, Telugus, Bengalese, Sikhs, Ceylonese and Singhalese.

The average daily number of patients in the hospital was 351.1 as compared with 298.3 for 1922 and 307.0 for 1921. There were 555 deaths.

The number of minor operations performed during the year was 639 compared with 534 in 1922 and 613 in 1921. Intravenous injections numbered 3,487 and intramuscular 741. The latter were mainly mercury or bismuth. Quinine was rarely administered by this route.

The principal diseases treated were:—

<i>Diseases.</i>	<i>Cases.</i>	<i>Deaths.</i>	<i>Rate for 1923.</i>	<i>Rate for 1922.</i>
—	—	—	—	—
Malaria ...	981	50	5.1%	6.8%
Ankylostomiasis ...	1,178	7	0.59%	2.5%
Syphilis ...	762	35	4.6%	4.6%
Ascariasis ...	1,044	—	0.0%	0.75%
Dysentery { Amœbic	343	55	25%	45%
{ Bacillary	34	9		
Pulmonary Tuberculosis	289	129	45%	73%
Lobar Pneumonia ...	149	86	58%	59.8%
Ulcers (non-venereal)	671	—	0.0%	—

(Out-door patients treated in Ophthalmic Ward, District Hospital, Penang):—

<i>Diseases.</i>	<i>Cases.</i>
—	—
Conjunctivitis ...	9
Pterygium ...	2
Cataract ...	4
Entropion ...	2
Total ...	17

(Operations performed in the Ophthalmic Ward, District Hospital):—

<i>Operations.</i>	<i>Cases.</i>
—	—
Cataract Extraction	12
Corneal Ulcer Cauterized	3
Pterygium Excision and Cauterized	1
Entropion Plastic Operation	4
Total	20

(REPORT ON THE OPHTHALMIC WARD, DISTRICT HOSPITAL, PENANG).

1. One hundred and thirty-one patients were treated during the year. Of whom 114 were in-patients and 17 out-patients.

2. Twenty operations were performed with satisfactory results during the year.

Return of sick of Ophthalmic Ward, District Hospital, Penang:—

<i>Diseases.</i>	<i>Cases.</i>
—	—
Conjunctivitis	19
Trachoma	8
Pterygium	4
Keratitis	14
Keratitis Interstitial	1
Corneal opacity	7
Corneal Ulcer	17
Iritis	7
Iritis Syphilitic	2
Optic atrophy	3
Retinitis	1
Cataract	15
Panophthalmitis	1
Disorganised eye	5
Amblyopia	3
Blepharitis	2
Trichiasis	1
Ptosis eye	1
Leucoma	1
Entropion	2
Optic Neuritis	1
Total	115

Hospital Staff.—The Government Pathologist Dr. J. C. TULL was in charge of the hospital until he left for Singapore in September, 1923. Since then the Acting Government Pathologist, Dr. A. N. KINGSBURY has been in charge. Dr. J. PORTELLI was attached to the hospital until September.

BALIK PULAU HOSPITAL.

REPORT W. A. TAYLOR, M.B., CH.B., *Acting Chief Medical Officer.*

Admission.—One hundred and eighty-nine patients were admitted during the year. Seventeen patients remained over for preceding year. The total was therefore 206 for the year.

2. The average daily sick was 14.93 as compared with 14.98 of 1922.

3. The principal diseases treated were:—

Ulcers	...	...	...	...	54
Malaria	...	...	...	...	21 with 1 death.
Dysentery (1 Amœbic case)	...	...	...	...	13 with 5 deaths.
Syphilis	...	...	...	...	11
Ankylostomiasis	...	...	...	...	11

4. There were 17 deaths during the year and the percentage of deaths to total treated was 8.25 as compared with 11.4 in 1922.

III.—LUMUT HOSPITAL (DINDINGS).

REPORT BY W. A. TAYLOR, M.B., CH.B., *Chief Medical Officer.*

Building.—The New Pengkalen Bharu Out-door Dispensary was completed by the end of November.

Work done.—There were 492 admissions for the year which with 16 remaining from the previous year made a total of 508 as compared with 516 of the previous year.

The average number of patients were 16.1 as compared with 20.22 of the previous year.

The principal diseases treated.—

				Cases.	Deaths.
Ankylostomiasis	...	...	...	33	2
Dysentery	...	...	...	9	3
Malaria	...	...	...	133	4
Pneumonia	...	...	...	32	5
Phthisis	...	...	...	11	3
Venereal Diseases	...	...	...	37	1
Ulcers	...	...	...	22	—
Influenza	...	...	...	4	—

Blood film of all fever cases and those of enlarged spleens were examined:—

Fifty-six Intravenous N. A. B. (Str. '9 grm. and '45 grm.) were given for syphilis cases.

One hundred and forty-six Intravenous N. A. B. (Str. '45 grm. and '2 grm.) were given for Yaws.

Deaths.—There were 28 deaths. Of these 8 died within 48 hours of admission. Percentage of deaths to total treated 5.5, percentage of deaths excluding those dying within 48 hours of admission 3.9.

Public Health.—Regular visits were paid to anti-malarial works. The weekly oiling of ravines was supervised. The Public Works Department and Sanitary Board Staff were kept in close touch with as regards cutting the grass short in ravines, the disposal of town refuse and the sweeping of drains. Visits to the market, eating and sundry shops were regularly paid and the cleanliness of these places was visited upon.

IV.—PROVINCE WELLESLEY.

REPORT BY L. W. EVANS, M.R.C.S., L.R.C.P., *Medical and Health Officer.*4. *Hospital Statistics—*

A.—Zymotic Diseases:—

		1922.	1923.	Deaths.
		—	—	—
Chicken-pox	...	23	7	—
Cholera	...	2	—	—
Cerebro-spinal Meningitis	...	3	—	—
Enteric	...	1	3	3
Small-pox	...	—	9	1

Small-pox.—An outbreak was notified on 19th September.

It was traced to a Malay, HAJI NAPIER who returned from Mecca to his home at Bukit Beraped, Central Division about August 25.

Two days later he developed small-pox eruption, which he did not report. Five cases resulted in his house and one in his brother's. He was prosecuted and fined.

B.—Prevalent Diseases in Butterworth and Bukit Mertajam Hospitals.

<i>Diseases.</i>	<i>Admissions.</i>	<i>Death-rate %.</i>
—	—	—
Malaria Benign Tertian	180	1.1
Malaria Sup-tertian	89	9.0
Malaria Quartan	3	66.6
Dysentery Amoebic	34	2.06
Dysentery Bacillary	11	27.3
Phthisis	69	49.25
Venereal Diseases	254	1.18
Ankylostomiasis	188	14.4

The total number of in-patients in these two Government Hospitals was 2,539 (against 2,661 in 1922). Of this number, 340 were Estate coolies. Thus 13.4 per cent of our hospital patients come from Estates.

The number of patients admitted to Government Hospitals from Estate not situated in the Province (for purposes of inspection) was:—

Henrietta Estate	...	...	26
Lunas Estate	...	...	112

The total number of Deaths in the two Hospitals was 191 giving a death-rate of 7.52 (1922—8.11 per cent).

D.—Prevalent Diseases in Estate Hospitals:—

Name of Estate Hospital.	Total Cases.	Malaria.	Diarrhoea and Dysentery.	Ankylostomiasis.	Pyrexia.	Ulcer.	Deaths from all Causes.	Average monthly labour force.
Malakoff	257	52	29	19	...	29	2	417
Bertam	271	7	14	3	33	63	9	1,380
Bukit Tamban	10	...	...	2	1	...	...	248
Prye	5	...	...	...	...	...	...	407
Total	543	59	43	24	34	92	11	2,452

Treatment of Yaws.—

One thousand three hundred and eighty-two cases of Yaws were treated by injections of Neo Salvarsan during the year. The scepticism of the Malays has been overcome and the numbers coming up for treatment show a steady increase. The injections are given chiefly in the Out-door Dispensaries (at any time) and at Vernacular schools at dates pre-arranged with the Gurus and Pengulus.

School Inspection.—

All the Vernacular Schools (boys) were inspected:—

Number of Schools	...	...	...	42
Total scholars	...	...	...	3,000
Spleen incidence	...	...	...	8·3%
Teeth defective	...	...	...	7·0%
Enlarged Tonsils and for Adenoids	...	...	...	8·7%
Eye diseases	...	...	...	2·%

Treatment was carried out by the vaccinating Dressers.

Vaccinations.—

	Primary.	Secondary.	Total.
	—	—	—
Northern District	... 1,634	797	2,431
Central	... 1,022	152	1,174
Adults vaccinated	... —	3,100	3,100
			—
		Total	... 6,705
			—

BUTTERWORTH HOSPITAL.

REPORT BY L. W. EVANS, M.R.C.S., L.R.C.P.

Work done.—(a) Sixty-two patients remained from the previous year, which, with 1,078 admission during the year, gives a total of 1,140 cases treated during the year as against 1,312 treated during the previous year. The average daily number of sick was 58·06. During the year there were 70 deaths of which 14 died within 48 hours of admission.

The percentage of deaths to total treated was 6·14 as compared with 8·30 during the previous year. Excluding those dying within 48 hours of admission the percentage was 4·71 as against 7·45 during the previous year. Fifty-eight patients remained in the hospital at the end of the previous year.

Miscellaneous Work.—(c) A systematic examination of the blood and stool of all patients was carried out.

The results of Blood examination were:—

Total number of Blood films examined was 1,210—

			Percentage.
			—
Malaria Sub-tertian	...	60	4'95
Malaria Benign Tertian	...	109	9'00
Malaria Quartan	...	1	—
Filaria	...	1	—

The results of Stools examination were:—

Total number of Stools examined, 1,910—

			Percentage.
			—
Anky. ova	...	140	11'5
Round-worm ova	...	176	14'54
Amœbæ	...	24	2'00
Whip-worm	...	134	11'07
Thread-worm ova	...	28	2'31

(d) One hundred and fifty-six operations were performed during the year, of which 141 were cured, 13 relieved and 2 died.

(e) One hundred and twenty-seven cases of Venereal Diseases were treated of which 123 were males and 4 females.

(f) Seven hundred and fifty-one Injections of N. A. B. were given for cases of Yaws.

Infectious Diseases.—There were 3 of small-pox in the Northern District during the year. These were all isolated in their own house at Kapala Batas. One case died and the other two recovered. Six cases of chicken-pox were treated at the Butterworth Quarantine Camp and they all recovered.

BUKIT MERTAJAM HOSPITAL.

REPORT BY L. W. EVANS, M.R.C.S., L.R.C.P.

Staff.—Mr. S. M. BABOO was in charge during the first quarter and Mr. H. MEHTA during the last three quarters.

Work done.—Fifty-six patients remained at the end of 1922, which with 1,343 admissions during the year makes a total of 1,399, treated during the year, as against 1,349 of 1922. The average daily number of sick was 58'19 as compared to 66'74 of 1922.

The number of deaths to total treated was 121. Of these 15 died within 48 hours of admission. Percentage of deaths to total treated was 8'64 as compared to 8'05 of 1922. Percentage of deaths to total treated excluding those dying within 48 hours of admission was 7'57 as against 6'55 of 1922.

Fifty patients remained at the end of 1923.

Stools.—Stools of all cases were examined. Out of 1,343 stools examined 535 or 39·83 showed Ova of Ankylostomiasis, 642 or 47·80 showed Ova of Ascariasis, 10 showed Ova of Trichocephalus Dispar.

The bloods of admissions were examined and of these 184 showed malaria parasite.

Infectious Diseases.—There were 6 cases of small-pox with no death. They were all in one house off Prapit. There was only one case of chicken-pox.

SUNGEI BAKAP HOSPITAL.

REPORT BY L. W. EVANS, M.R.C.S., L.R.C.P.

There were 70 patients remaining at the beginning of 1923 and 1,249 patients were admitted during the year making a total of 1,319 patients treated as compared with 1,213 in 1922.

Percentage of deaths to total treated was 10·15 per cent against 9·81 per cent in 1922.

Number of deaths within 48 hours of admission was 37.

Average daily number of sick during the year was 69·48.

At the end of the year 65 cases remained.

Zymotic Diseases.—

	<i>Cases.</i>	<i>Deaths.</i>	<i>Death-rate.</i>
	—	—	—
Chicken-pox ...	7	—	—
Measles ...	3	—	—

Principal diseases treated were:—

	<i>Cases.</i>	<i>Deaths.</i>	<i>Death-rate.</i>
	—	—	—
Ankylostomiasis ...	282	29	10·28
Dysentery, Amœbic ...	39	16	41·02
Dysentery, bacillary ...	2	—	—
Malaria, benign tertian ...	75	—	—
Malaria, sub-tertian ...	24	6	25·00
Malaria, unclassified ...	4	—	—
Phthisis ...	43	27	62·79
Venereal diseases ...	23	—	—
Ulcers ...	114	—	—

One hundred and thirty cases were sent in by Police, 92 of which were accident cases and 38 others.

Twenty-two bodies were sent for *post-mortem* examination.

Vaccinations.—The table shows the number of vaccinations done during the year:—

<i>Primary.</i>	<i>Secondary.</i>	<i>Total.</i>
—	—	—
887	2,029	2,916

School Inspection.—The twelve Vernacular Schools in the District were inspected. The number of pupils examined was 822, and the spleen rate was 27·2 per cent.

V.—MALACCA.

REPORT BY H. W. FURNIVALL, M.B., Bach. Surg. (Dunelm).

Comparison of Death-rates with the preceding five years:—

1923	...	...	...	...	26·98 per mille.
1922	...	...	...	...	26·25 „
1921	..	...	...	...	27·71 „
1920	...	...	...	...	31·18 „
1919	...	...	...	...	32·48 „
1918	...	...	...	...	50·04 „

Yaws.—Cases of this disease were treated by intravenous injections of Neo-Salvarsan and allied drugs. The number of injections given for Yaws throughout the State was 6,672 and for Syphilis 1,123. The Land Officer and District Officers gave every assistance. Assistant Surgeons and Dressers especially trained were selected to carry out the treatment, and various centres were visited from time to time for this purpose. At the same time, stock mixtures were carried and distributed for other complaints and Masjid Tanah and Merlimau were visited regularly every week during the latter months for this purpose.

Staff.—Dr. R. D. FITZGERALD was transferred to Johore Bahru on the 29th March, 1923, and was succeeded by Dr. H. W. FURNIVALL on the 30th March, 1923.

DURIAN DAUN HOSPITAL.

Work done.—

Remained on 31st December, 1922	...	...	...	238
Admitted during the year	...	...	...	3,255
Discharged	...	...	...	2,778
Transferred	...	...	...	25
Absconded	...	...	...	70
Died	...	...	...	383
Remaining on 31st December, 1923	...	...	...	237

The daily average number of sick was 246·92.

The number of deaths within 48 hours of admission 105.

The percentage of death to total treated 10·96.

The percentage excluding those dying within 48 hours of admission is 8·20.

The number of European patients admitted in the 1st Class Wards were 50 males and 20 females. There were 3 deaths.

The principal diseases treated and their mortalities were as follows:—

Total cases treated.

Ankylostomiasis	...	124	with deaths 15	12'09%
Beri-beri	...	167	" 24	14'37%
Diarrhoea	...	48	" 3	6'25%
Dysentery	...	112	" 49	43'75%
Gonorrhoea	...	66	" —	—
Influenza	...	74	" 1	1'35%
Malaria	...	564	" 47	8'32%
Pneumonia Lobar	...	67	" 29	43'28%
Soft Chancre	...	41	" —	—
Syphilis	...	222	" 7	3'15%
Tuberculosis	...	139	" 74	53'25%
Ulcers	...	332	" —	—
Wounds	...	250	" 4	1'60%

Surgery.—There were 3,364 Surgical Operations performed during the year, of which 75 Major and 3,289 Minor Operations.

QUARANTINE CAMP.

Total number of cases admitted for treatment	...	20
Total number of cases admitted for Isolation	...	2

Most of the Contacts were isolated at their houses.

Diseases treated were as follows:—

		<i>Total cases treated.</i>	<i>Deaths.</i>
Small-pox	...	1	—
Chicken-pox	...	7	—
Cerebro-spinal Fever	...	2	2
Erysipelas	...	3	1
Plague Bubonic	...	5	5
Measles	...	2	—
Total	...	20	8

JASIN HOSPITAL.

Work done.—

Remaining on 31st December, 1922	...	52
Total number of admissions during 1923	...	676
Total number of cases treated during 1923	...	728
Total number of discharged during 1923	...	584
Total number of transfers during 1923	...	13
Total number of absconders during 1923	...	29
Total number of deaths during 1923	...	58
Remaining on 31st December, 1923	...	44

The daily average number of sick was 46.28.

The percentage of death to total cases treated was 7.96.

The number of deaths within 48 hours of admission was 16.0.

The percentage of deaths to total cases treated excluding those dying within 48 hours of admission was 5.76.

The Chief Diseases treated were:—

Amœbic Dysentery	...	17	with 4 deaths	23.53%
Ankylostomiasis	...	30	4	13.33%
Beri-beri	...	20	4	20.00%
Broncho Pneumonia	...	6	2	33.33%
Lobar Pneumonia	...	10	4	40.00%
Influenza	...	10	1	10.11%
Malaria B. T.	...	27	1	3.70%
Malaria S. T.	...	74	7	9.46%
Malaria Cerebral	...	4	4	100.00%
Malaria Chronic	...	38	4	10.52%
Malaria Unclassified	...	18	—	—
Malarial Neuritis	...	7	—	—
Nephritis	...	13	1	7.70%
Phthisis	...	27	14	51.85%
Syphilis primary	...	6	—	—
Syphilis secondary	...	36	—	—
Syphilis Tertiary	...	6	—	—
Parasyphilis	...	2	1	50.00%
Gonorrhœa	...	16	—	—
Ulcer	...	65	—	—
Total number of Estate cases treated	...			166
Total number of Government servants	...			89
Total number of Paying cases	...			7
Total number of Free cases	...			466

Surgical Work.—

Total number of Minor Operations	...	56
Total number of N. A. B. Injections	...	107
Total number of Hg. and As. Iodide Injections	...	71

THE MALACCA AGRICULTURAL MEDICAL BOARD.

The Malacca Agricultural Medical Board was in existence and efficient in its administrative, preventive and curative aspects throughout the year.

VI.—LABUAN HOSPITAL.

REPORT BY T. C. A. CLEVERTON, M.R.C.S., L.R.C.P.

The causes of deaths amongst infants under one year of age were as follows:—

Malaria 5, Convulsions 38, Inanition 7, Diarrhœa 1, Bronchitis 1.

Malaria.—Sixty-three cases were admitted during the year and 52 in 1921, 238 cases were treated as outpatients and 319 cases in 1922. Of the total number of deaths 25 attributed to this disease and 33 in 1922. Even more of the admissions to hospital for this disease than during last year, came from Brunei and Sarawak. Only 2 Quartans were admitted to hospital, during the year, 1 came from Brunei and 1 from Lawas.

From January to December, 215 blood films for Malarial parasites were examined with 143 positive and 72 negative results. (Ninety-four S. T., 33 B. T., S. T. and B. T., 3 Q. and B. T., 7 Quartan).

One hundred and ninety-five Stools were examined with 132 positive results. Eighteen Smears for Gonococci were examined with 8 positive results. Forty-six Sputums were examined for T. B. with 14 positive results and Blood Films for Filaria were examined with negative results.

All patients admitted to hospital had their stools examined.

Seven cases of pure Ankylostomiasis were treated in hospital. The others are returned under other diseases for which they were admitted.

Beri-beri.—Five cases were treated in 1923 (all of these came from Brunei) as against 42 cases in 1917, 4 of these were Chinese estate coolies and one Javanese was a pauper. No cases were seen by this department in 1920 or 1921. There was 1 case in 1919 and 1922. The rice eaten locally has been Rangoon and Siam.

Venereal Diseases.—Twelve cases were treated in hospital as against 18 in 1922. Six cases were treated as Out-patients as against 17 in 1922. There is now a fully equipped Venereal Clinic in Labuan and the Headmen of the various kampongs have been personally visited and notified by the Medical Officer, that they can take advantage of this Clinic.

Pulmonary Tuberculosis.—Nine cases were treated in hospital during the year as against 7 in 1922. Two of these cases died. Of the total number of deaths 48 were from this disease (53 in 1922), showing a death-rate of 28.07 of the total death as against 26.36 in 1922. Most of these cases were well above adult age. Only 16 of these deaths occurred in persons of 40 years and under, leaving 32 deaths in those of over 40 years.

Amœbic Dysentery.—There were 2 admissions with one death as against 4 with 2 deaths in 1922. One case came from Brunei. There were no cases of Bacillary dysentery.

Vaccination.—Two hundred and twenty-three Children were vaccinated during the year as against 222 in 1922. Of these 205 were successful, 6 modified, and 12 failed. Ages:—6 months and under 110. Seven months to 1 year 72, one year and above 41.

Hospital.—The total number of admissions during the year was 181 as against 168 in 1922. There were 15 deaths giving a percentage mortality to the total treated 7.81 as against 5.58 in 1922.

The chief diseases treated were Amœbic Dysentery 2 with 1 death, Malaria 63 with 2 deaths, Phthisis 9 with 2 deaths, Syphilis 7 with no deaths.

There are indications that the Hospital admissions will be more in 1924, as Estates in Brunei and Sarawak adjoining Labuan, where there are no hospitals are beginning to show a more progressive policy.

Operations.—Twenty-one Operations were performed under Chloroform of which 5 were major. Ten incisions of abscess, etc., were done in addition. Eighty-one N. A. B. and 7 Neo-Salvarsan intravenous injections were given, chiefly for Framboesia and Chronic Eczema. Only 26 injections were given for Syphilis.

APPENDIX F.

(i)—SINGAPORE.

RETURN OF DISEASES AND DEATHS IN 1923, AT THE SINGAPORE HOSPITALS.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
INFECTIVE DISEASES:—						
Blackwater Fever ...	1	1	1	2	...	
Beri-beri ...	164	570	98	737	116	
Cerebro-spinal Meningitis ...	...	21	5	21	...	
Chicken-pox ...	1	23	...	24	2	
Dysentery ...	9	78	...	87	1	
Dysentery Amœbic ...	13	170	73	183	9	
" with liver ab- cess and em- pyema ...	...	1	1	1	...	
" Bacillary ...	1	184	63	185	7	
" Chronic ...	3	14	12	17	...	
" Mixed ...	3	183	56	186	3	
Dengue ...	...	9	...	9	...	
Diphtheria ...	...	2	...	2	...	
Enteric Fever ...	6	70	34	76	5	
Erysipelas ...	...	6	2	6	...	
Elephantiasis ...	...	6	...	6	1	
Gangrene leg and foot ...	...	2	1	2	...	
Gangrene Abdonimal Wall ...	...	1	1	1	...	
Gonorrhœal Urethritis ...	15	372	1	387	26	
Gonorrhœa and other Manifestations ...	16	61	...	77	12	
Influenza ...	...	206	...	206	5	
Leprosy ...	74	101	14	175	89	
Malaria Benign Tertian ...	6	287	3	293	12	
" Quartan ...	2	77	2	79	1	
" Subtertian ...	14	863	134	877	27	
" Mixed ...	...	64	3	64	1	
" Chronic ...	23	319	25	342	12	
" Unclassified ...	12	478	12	490	14	
Meningitis Pneumococcal ...	...	7	7	7	...	
" Tubercular ...	...	3	2	3	...	
" Chronic ...	...	1	1	1	...	
Measles ...	...	4	...	4	...	
Mumps ...	...	12	...	12	...	
Other Diseases ...	1	8	6	9	...	
Pyrexia ...	8	596	...	604	8	
Plague ...	...	14	6	14	...	
Plague Bubonic ...	...	11	4	11	...	
" Septicæmia ...	...	1	1	1	...	
Pneumonia ...	7	263	124	270	5	
Pyæmia ...	1	1	1	2	...	
Rheumatic Fever ...	2	17	...	19	2	
Carried forward ...	385	5,107	695	5,492	358	

RETURN OF DISEASES AND DEATHS IN 1923, AT THE SINGAPORE HOSPITALS.—Continued.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	385	5,107	695	5,492	358	
INFECTIVE DISEASES.—Cnld.						
Sapraemia ...	1	40	41	41	...	
Septicæmia ...	...	24	21	24	...	
Syphilis Primary ...	6	311	...	317	24	
" Secondary ...	75	1,064	10	1,139	83	
" Tertiary ...	14	259	101	273	26	
Syphilis Inherited ...	...	7	1	7	1	
Chancre and Bubo ...	14	114	...	128	5	
Small-pox ...	...	7	...	7	...	
Tuberculosis ...	88	853	422	941	77	
Tetanus ...	...	12	4	12	...	
Whooping Cough ...	...	3	...	3	...	
Yaws ...	...	3	...	3	...	
INTOXICATION :—						
Alcoholism ...	1	29	...	30	...	
Corrosive poisoning ...	...	1	1	1	...	
Opium poisoning ...	...	3	...	3	...	
Pellagra ...	...	1	...	1	...	
GENERAL DISEASES :—						
Anæmia ...	1	3	...	4	1	
Anæmia Splenic ...	...	2	2	2	...	
" Pernicious ...	...	1	1	1	...	
Diabetes ...	...	8	...	8	1	
Debility ...	3	26	1	29	2	
Exophthalmic Goitre ...	...	3	...	3	1	
Gout ...	...	2	...	2	...	
Leucocythemia ...	...	1	...	1	...	
Other Diseases ...	...	18	...	18	1	
Rickets ...	...	3	...	3	...	
Senility ...	4	14	6	18	3	
<i>Carried forward</i> ...	592	7,991	1,306	8,511	583	

RETURN OF DISEASES AND DEATHS IN 1923, AT THE SINGAPORE HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward ...</i>	592	7,991	1,306	8,511	583	
DISEASE OF NERVOUS SYSTEM:—						
<i>Sub-section 1—</i>						
Abscess Brain ...	...	1	1	1	...	
Anencephalus ...	...	2	2	2	...	
Encephalitis ...	...	1	...	1	...	
Meningitis ...	2	4	...	4	...	
Myelitis ...	2	3	1	5	...	
Neuritis ...	8	55	1	63	6	
Other Diseases ...	...	11	4	11	1	
<i>Sub-section 2—</i>						
Apoplexy ...	...	1	1	1	...	
Cerebral Hæmorrhage ...	...	5	3	5	1	
Cerebral Softening ...	...	8	8	8	...	
" Thrombosis ...	...	1	...	1	1	
Epilepsy ...	3	13	...	16	...	
General paralysis of insane ...	10	21	22	31	5	
Hysteria ...	...	4	...	4	...	
Hemiplegia ...	9	50	1	59	19	
Hæmorrhage Spinal Canal ...	...	1	...	1	1	
Locomotor Ataxia ...	3	...	1	3	2	
Neuralgia ...	1	7	...	8	...	
Neurasthenia ...	1	2	...	3	1	
Other diseases ...	1	84	3	85	9	
Paralysis ...	7	10	...	26	...	
Paraplegia Spastic ...	8	8	...	16	10	
<i>Sub-section 3—</i>						
MENTAL DISEASES:—						
Alcoholic insanity ...	10	5	2	15	2	
Dementia ...	19	27	5	46	25	
Dementia (Primary or Secondary) ...	130	5	9	144	120	
Delusional insanity ...	13	182	...	195	22	
Idiocy ...	30	7	1	37	33	
Other diseases ...	4	97	4	101	12	
Syphilitic insanity ...	13	23	23	36	10	
Mania ...	180	225	42	405	228	
Melancholy ...	48	53	11	101	64	
<i>Carried forward ...</i>	1,101	8,844	1,454	9,945	1,155	

RETURN OF DISEASES AND DEATHS IN 1923, AT THE SINGAPORE HOSPITALS.—Continued.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	1,101	8,844	1,454	9,945	1,155	
DISEASE OF EYES:—						
Blindness ...	44	35	...	79	22	
Blepharitis marginalis ...	...	1	...	1	...	
Conjunctivitis ...	3	163	...	166	10	
Cataract ...	13	19	...	32	12	
Corneal ulcer ...	5	60	...	65	4	
Corneal Opacity ...	23	28	1	51	35	
Disorganisation of Eye- ball ...	7	...	1	7	3	
Gonorrhœal Ophthalmia ..	...	7	...	7	...	
Hypopyon ...	...	3	...	3	...	
Iritis ...	2	12	...	14	4	
Keratitis ...	...	1	...	1	...	
Optic Atrophy ...	7	2	2	9	3	
Optic Neuritis ...	1	4	...	5	1	
Other disease ...	13	41	...	54	11	
Staphyloma ...	7	3	...	10	7	
Trachoma ...	1	3	...	4	...	
DISEASE OF EAR:—						
Inflammation ...	1	11	...	12	...	
Mastoid abscess ...	...	1	...	1	...	
Mastoiditis purulent Men- ingitis ...	...	1	...	1	...	
Otitis Media ...	...	10	...	10	...	
Otorrhœa ...	...	2	...	2	...	
Rhinitis Chronic ...	...	3	...	3	...	
Other diseases ...	...	63	...	63	1	
DISEASE OF NOSE ...	...	28	...	28	...	
DISEASE OF CIRCULATORY SYSTEM:—						
Arterio Sclerosis ...	1	12	5	13	1	
Aneurysm Aorta ...	1	11	6	12	...	
Endocarditis ...	...	10	6	10	...	
Other diseases ...	5	18	7	23	...	
Pericarditis ...	...	15	11	15	...	
Valvular Mitral ...	1	41	8	42	3	
Valvular Aortic ...	4	43	13	47	1	
Valvular Tricuspid ...	...	1	...	1	...	
<i>Carried forward</i> ...	1,218	9,218	1,414	10,436	1,265	

RETURN OF DISEASES AND DEATHS IN 1923, AT THE SINGAPORE HOSPITALS.—Continued.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	1,218	9,218	1,414	10,436	1,265	
DISEASE OF RESPIRATORY SYSTEM :—						
Asthma ...	5	56	...	61	10	
Bronchitis ...	20	512	1	532	18	
Broncho-Pneumonia ...	5	156	...	161	2	
Empyema ...	1	14	9	15	1	
Embolism lung ...	...	1	...	1	...	
Abscess lung ...	...	2	...	2	...	
Gangrene of lung ...	...	7	6	7	...	
Laryngitis ...	...	3	...	3	...	
Malignant growth lung ...	...	2	2	2	...	
Nasal Polypus ...	...	4	4	4	...	
Other diseases ...	5	128	17	133	1	
Pleurisy ...	3	62	1	65	1	
Pulmonary infarction ...	...	1	1	1	...	
Pyopneumothorax ...	...	2	...	2	...	
DISEASE OF DIGESTIVE SYSTEM :—						
Appendicitis ...	8	92	5	100	3	
Ascites ...	...	1	...	1	1	
Caries Tooth ...	...	20	...	20	1	
Colitis ...	3	19	...	22	...	
Constipation ...	4	343	1	347	2	
Cholangitis Septic ...	...	6	6	6	...	
Cholecystitis ...	...	6	2	6	...	
Cancrum Oris ...	...	2	1	2	1	
Dyspepsia ...	2	67	...	69	...	
Dilatation of Stomach ...	...	1	...	1	1	
Enteritis ...	3	128	10	131	7	
Fistula in Ano ...	1	16	...	17	2	
Glossitis ...	...	4	...	4	...	
Gastritis ...	2	115	...	117	5	
Hernia ...	5	117	...	122	8	
Hæmorrhoids ...	1	78	...	79	4	
Hepatitis ...	13	86	16	99	11	
Inflammation of Tonsills ...	4	49	...	53	1	
Ischio Rectal Abscess ...	1	11	1	12	...	
Intestinal Obstruction ...	...	2	...	2	...	
Jaundice ...	1	12	...	13	...	
Malignant Stricture Lower end Oesophagus ...	...	2	2	2	...	
<i>Carried forward</i> ...	1,327	11,623	1,671	12,950	1,353	

RETURN OF DISEASES AND DEATHS IN 1923, AT THE SINGAPORE HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	1,327	11,623	1,671	12,950	1,353	
DISEASE OF DIGESTIVE SYSTEM.—<i>Contd.</i>						
Necrosis Jaw ...	...	1	...	1	...	
Other diseases ...	2	178	20	180	6	
Pancreatitis ...	...	1	...	1	1	
Perihepatitis ...	...	2	...	2	...	
Peritonitis ...	...	29	26	29	...	
Prolapse of Rectum ...	...	2	...	2	...	
Pharyngitis ...	...	3	...	3	3	
Stomatitis ...	...	26	1	26	3	
Sore Throat ...	...	3	...	3	...	
Sprue ...	...	1	...	1	...	
Stricture Rectum ...	...	1	...	1	...	
Ulcer Gastic ...	2	16	11	18	...	
Ulcer Duodenal ...	...	5	4	5	...	
Ulcer Pyloric ...	...	10	3	10	...	
DISEASE OF LYMPHATIC SYSTEM:—						
Inflammation of Lymphatic Gland ...	2	112	...	114	7	
Lymphangitis ...	...	4	...	4	...	
Splenitis ...	...	3	...	3	...	
Suppuration Lymphatic Gland ...	...	2	...	2	1	
DISEASE OF URINARY SYSTEM:—						
Bright's disease ...	35	251	47	286	20	
Cystitis ...	...	26	4	26	3	
Calculus ...	1	10	2	11	...	
Chyluria ...	...	3	...	3	...	
Extravasation of Urine ...	...	5	3	5	...	
Hæmaturia ...	...	7	...	7	...	
Other diseases ...	...	46	6	46	1	
Pyelitis ...	...	1	...	1	...	
Pyonephrosis ...	...	4	4	4	...	
Pyelonephritis ...	...	3	3	3	...	
Renal Colic ...	...	9	...	9	...	
Rupture Urethra ...	...	2	2	2	...	
Stricture Urethra ...	1	28	1	29	1	
Urinary fistula ...	3	...	...	3	...	
<i>Carried forward</i> ...	1,373	12,417	1,808	13,790	1,399	

RETURN OF DISEASES AND DEATHS IN 1923, AT THE SINGAPORE HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	1,373	12,417	1,808	13,790	1,399	
DISEASE OF GENERATIVE ORGANS (MALE):—						
Condyloma ...	...	8	...	8	1	
Epididymitis ...	...	13	...	13	...	
Gleet ...	...	2	...	2	...	
Hydrocele ...	4	45	...	49	6	
Hernia Testis ...	1	3	...	4	...	
Inflammation of Scrotum ...	...	8	1	8	1	
Other diseases ...	1	35	1	36	2	
Orchitis ...	3	39	...	42	...	
Phimosis ...	1	13	...	14	...	
Stricture ...	2	9	...	11	...	
Soft Chancre ...	23	219	...	242	17	
Urethritis ...	...	39	...	39	2	
Prostatitis ...	...	3	...	3	1	
LOCAL DISEASES. FEMALE ORGANS:—						
Amenorrhœa ...	...	8	...	8	...	
Abortion ...	1	11	...	12	...	
Abscess breast ...	...	5	...	5	...	
Displacement of uterus ...	...	12	...	12	...	
Endometritis ...	...	1	...	1	...	
Leucorrhœa ...	1	3	...	4	...	
Menorrhagia ...	...	5	...	5	...	
Mastitis ...	...	22	...	22	...	
Ovaritis ...	...	2	...	2	...	
Ovarian Cyst ...	...	16	...	16	...	
Other diseases ...	18	642	12	660	23	
Postpartem Hæmorrhage ...	...	15	2	15	...	
Puerperal Septicæmia ...	...	11	5	11	...	
Retained Placenta ...	...	12	...	12	...	
Sloughing of Vagina ...	...	1	1	1	...	
Vaginitis ...	2	6	...	8	...	
DISEASE OF LOCOMOTION:—						
Arthritis ...	2	120	1	122	11	
Bursitis ...	...	3	...	3	...	
Osteitis ...	2	8	1	10	...	
Other diseases ...	2	103	1	105	1	
Synovitis ...	1	6	...	7	1	
<i>Carried forward</i> ...	1,423	13,385	1,827	14,808	1,439	

RETURN OF DISEASES AND DEATHS IN 1923, AT THE SINGAPORE HOSPITALS.—*Concluded.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward ...</i>	1,423	13,385	1,827	14,808	1,439	
DISEASE OF CONNECTIVE TISSUE:—						
Abscess ...	12	355	...	367	16	
Cellulitis ...	8	149	6	157	11	
Carbuncle ...	...	18	...	18	2	
Other diseases ...	...	17	4	17	1	
Sinus ...	1	21	...	22	...	
DISEASE OF SKIN:—						
Acne ...	...	1	...	1	...	
Boil ...	1	33	...	34	3	
Eczema ...	1	97	...	98	4	
Herpes ...	...	11	...	11	...	
Other diseases ...	3	84	1	87	6	
Psoriasis ...	...	4	...	4	...	
Scabies ...	1	140	...	141	3	
Urticaria ...	...	3	...	3	...	
Ulcers ...	77	1,107	...	1,184	96	
INJURIES:—						
General ...	...	79	41	79	...	
Local ...	74	2,021	33	2,095	86	
Poisons ...	...	18	4	18	1	
PARASITES:—						
Ankylostomiasis ...	39	476	31	515	42	
Ascaris ...	2	102	...	104	...	
Others ...	14	80	10	94	...	
Oxyuris ...	...	1	...	1	...	
Schistosomiasis ...	...	4	4	4	...	
Tænia Solium ...	...	2	...	2	...	
Tænia Saginata ...	...	1	...	1	...	
OTHER ADMISSIONS:—						
Minor Surgical Operations ...	...	1,049	36	1,049	...	
Malformations ...	...	20	...	20	1	
Tumours (Malignant new growth) ...	8	120	39	128	8	
No disease detected ...	1	87	...	88	3	
Observation ...	1	37	...	38	...	
Accompanying child ...	1	61	...	62	3	
Malingering ...	...	2	...	2	...	
Erythro Melalgia Tropi- cum ...	...	1	...	1	...	
Total ...	1,681	20,066	2,042	21,747	1,751	

(ii)—PENANG.

RETURN OF DISEASES AND DEATHS IN 1923, AT PENANG HOSPITALS.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
INFECTIVE DISEASES :—						
Anthrax	...	1	1	1	...	
Beri-beri	3	35	9	38	8	
Cerebro-spinal Fever	...	10	1	10	...	
Chicken-pox	2	22	...	24	...	
Cholera	...	9	2	9	7	
Dysentery unclassified	4	132	33	136	1	
Diphtheria	...	6	3	6	...	
Dysentery amœbic bacil- lary—						
Amœbic	20	343	59	363	13	
Bacillary	...	99	43	99	3	
Endocarditis-Infective—						
Enteric	...	11	1	11	1	
Erysipelas	...	3	...	3	...	
Gonorrhœa	9	203	...	212	13	
Gonorrhœal Rheumatism and Arthritis	...	60	...	60	7	
Influenza	1	112	7	113	3	
Leprosy (unclass.)	...	27	...	27	...	
Leprosy—						
(a) Nodular	252	113	72	365	288	
(b) Anæsthetic	286	90	78	376	289	
Malaria—						
(a) Tertian	9	428	19	437	7	
(b) Quartan	...	25	...	25	...	
(c) Aestiva-autumnal	20	835	70	855	18	
(d) Chronic	7	207	6	214	13	
(e) Malaria (unclass.)	6	220	8	226	9	
Measles	...	38	...	38	...	
Acute osteo myelitis	...	2	1	2	...	
Pyæmia	...	3	3	3	...	
Pneumonia	9	212	55	221	1	
Fever unknown origin	...	103	...	103	1	
Carried forward	628	3,349	471	3,977	682	

RETURN OF DISEASES AND DEATHS IN 1923, AT PENANG HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward ...</i>	628	3,349	471	3,977	682	
INFECTIVE DISEASE.—<i>Cntd.</i>						
Rheumatic Fever ...	3	41	1	44	1	
Septicæmia ...	...	49	34	49	2	
Small-pox ...	...	2	1	2	...	
Syphilis ...	2	33	2	35	3	
Syphilis—						
(a) Primary ...	11	262	...	273	14	
(b) Secondary ...	3	251	...	254	14	
(c) Inherited ...	...	2	1	2	...	
(d) Tertiary ...	14	407	31	421	64	
Tetanus ...	...	8	2	8	...	
Tuberculosis ...	44	445	203	489	43	
Yaws ...	1	23	...	24	...	
Other Diseases ...	2	37	1	39	1	
INTOXICATIONS :—						
Alcoholism ...	...	13	...	13	...	
Morphinism ...	...	6	...	6	...	
GENERAL DISEASES :—						
Anæmia ...	...	47	3	47	4	
Diabetes ...	...	6	1	6	...	
Other Diseases ...	...	4	3	4	...	
LOCAL DISEASES.						
DISEASES OF THE NEUROTIC SYSTEM :—						
<i>Sub-section 1—</i>						
Hæmorrhage Brain ...	...	12	6	12	...	
Neuritis ...	...	5	...	5	...	
Meningitis ...	...	2	2	2	...	
Myelitis Syph. ...	...	1	1	1	...	
Hydrocephalus ...	...	1	1	1	...	
Abscess of Brain ...	...	2	1	2	...	
<i>Carried forward ...</i>	708	5,008	765	5,716	828	

RETURN OF DISEASES AND DEATHS IN 1923, AT PENANG HOSPITALS.—Continued.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS
		Admissions.	Deaths.			
<i>Brought forward</i> ...	708	5,008	765	5,716	828	
DISEASES OF THE NEUROTIC SYSTEM.—Contd.						
<i>Sub-section 2—</i>						
Apoplexy ...	...	5	2	5	...	
Paralysis ...	16	51	6	67	22	
Chorea ...	...	...	...	...	...	
Locomotor Ataxia ...	...	6	3	6	...	
Epilepsy ...	1	9	4	10	...	
Neuralgia ...	...	12	...	12	...	
Hysteria ...	...	1	...	1	...	
Other Diseases ...	...	3	2	3	...	
<i>Sub-section 3—</i>						
Melancholy ...	...	1	...	1	...	
Dementia ...	1	...	...	1	...	
Delusional Insanity ...	1	9	...	10	1	
DISEASES OF THE EYE:—						
Trachoma ...	2	10	...	12	4	
Conjunctivitis ...	1	83	...	84	7	
Keratitis ...	...	17	...	17	3	
Cornea, Opacity ...	1	16	...	17	3	
Staphyloma ...	...	1	...	1	...	
Ulceration of Cornea ...	5	30	...	35	8	
Iritis ...	5	18	...	23	6	
Optic Neuritis ...	2	8	...	10	4	
Retinitis ...	...	2	...	2	1	
Cataract ...	...	31	...	31	3	
Disorganised Eye ...	...	8	...	8	1	
Other Diseases ...	...	17	...	17	1	
DISEASES OF THE EAR:—						
Inflammation otitis ...	...	10	1	10	...	
Mastoiditis ...	...	1	...	1	...	
Other Diseases ...	...	1	...	1	...	
DISEASES OF THE NOSE:—						
Rhinitis ...	...	1	...	1	...	
<i>Carried forward</i> ...	743	5,359	783	6,102	892	

RETURN OF DISEASES AND DEATHS IN 1923, AT PENANG HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward ...</i>	743	5,359	783	6,102	892	
DISEASES OF THE CIRCULATORY SYSTEM:—						
Pericarditis ...	...	4	3	4	...	
Endocarditis (ulcerative) ...	...	12	4	12	1	
Valvular Mitral ...	3	49	16	52	3	
Valvular Aortic ...	...	5	1	5	2	
Valvular Morbus Cordis ...	1	41	20	42	7	
Valvular C. V. D. ...	...	4	2	4	...	
Arterial Sclerosis ...	...	23	16	23	1	
Aneurism ...	...	7	...	7	2	
Phlebitis ...	...	2	...	2	...	
DISEASES OF THE RESPIRATORY SYSTEM:—						
Laryngitis ...	...	5	...	5	...	
Bronchitis ...	10	415	3	425	6	
Broncho-Pneumonia ...	3	126	65	129	1	
Asthma ...	2	72	...	74	5	
Oedema Glottis ...	...	2	2	2	...	
Bronchiectasis ...	...	1	1	1	...	
Hæmothorax ...	1	...	...	1	...	
Emphysema ...	...	1	...	1	...	
Pleurisy ...	...	39	2	39	...	
Empyema ...	1	14	6	15	...	
Other Diseases ...	...	14	3	14	...	
DISEASES OF THE DIGESTIVE SYSTEM:—						
Hare Lip ...	...	1	...	1	...	
Stomatitis ...	...	5	...	5	...	
Cancer Tongue ...	...	3	...	3	1	
Caries of Teeth ...	...	6	...	6	...	
Necrosis Jaw ...	3	2	...	5	...	
Pyorrhœa Alveolaris ...	...	5	...	5	...	
Sore Throat ...	1	16	...	17	...	
Inflammation of Tonsils ...	...	26	1	26	...	
Gastritis ...	1	57	1	58	2	
Ulceration of Stomach ...	...	14	1	14	1	
Cancer ...	...	5	1	5	...	
Hæmatemesis ...	...	1	...	1	...	
Stricture of Stomach ...	...	1	...	1	1	
Dyspepsia ...	...	24	...	24	3	
Enteritis ...	2	77	7	79	...	
Appendicitis ...	1	7	...	8	1	
<i>Carried forward ...</i>	772	6,447	939	7,219	930	

RETURN OF DISEASES AND DEATHS IN 1923, AT PENANG HOSPITALS.—Continued.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	772	6,447	939	7,219	930	
DISEASES OF THE DIGESTIVE SYSTEM.—Contd.						
Colitis ...	...	30	...	30	2	
Ulceration of Intestines ...	...	2	1	2	...	
Faecal Fistula ...	...	4	1	4	...	
Enteritis & Anæmia ...	...	4	1	4	...	
Hernia ...	2	62	3	64	3	
Diarrhoea ...	2	110	12	112	...	
Constipation ...	...	77	...	77	1	
Colic ...	...	12	...	12	...	
Ischio R. Abscess and Fistula ...	...	34	...	34	1	
Hemorrhoids ...	1	58	...	59	...	
Prolapse Rectum ...	...	7	...	7	...	
Hepatitis Acute ...	...	6	...	6	...	
Abscess ...	...	14	3	14	...	
Cirrhosis ...	1	35	10	36	4	
Cholecystitis ...	...	2	...	2	...	
Peritonitis ...	...	14	7	14	...	
Ascites ...	...	2	...	2	...	
Other Diseases ...	...	3	...	3	...	
DISEASES OF THE LYMPHATIC SYSTEM :—						
Splenitis and Abscess ...	...	35	...	35	...	
Inflammation of Lym- phatic Gland ...	2	20	...	22	...	
Suppuration of Lymphatic Gland ...	3	123	...	126	9	
Elephantiasis ...	...	1	...	1	...	
LOCAL DISEASES.						
DISEASES OF THE URINARY SYSTEM :—						
Hyper Nephroma ...	...	1	...	1	...	
Acute Nephritis ...	2	96	12	98	10	
Bright's Disease ...	1	85	18	86	2	
Pyelitis ...	...	3	1	3	...	
Uræmia ...	...	3	3	3	...	
<i>Carried forward</i> ...	786	7,288	1,011	8,074	962	

RETURN OF DISEASES AND DEATHS IN 1923, AT PENANG HOSPITALS.—Continued.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	786	7,288	1,011	8,074	962	
DISEASES OF THE URINARY SYSTEM.— <i>Contd.</i>						
Calculus ...	...	3	...	3	...	
Renal Colic ...	...	2	...	2	...	
Cystitis ...	I	12	...	13	I	
Vesical Calculus ...	...	3	I	3	...	
Suppression ...	I	4	...	5	...	
DISEASES OF THE GENERATIVE ORGANS:—						
<i>Male Organs—</i>						
Peri Urethral Abscess ...	...	8	...	8	...	
Fistula Urethra ...	...	12	...	12	...	
Phimosis and Paraphimosis ...	...	82	...	82	...	
Stricture ...	...	14	...	14	...	
Extravasation Urine ...	I	4	2	5	...	
Prostatitis ...	...	2	...	2	...	
Soft Chancre ...	3	85	...	88	I	
Condyloma ...	...	4	...	4	...	
Inflammation of Scrotum ...	...	12	I	12	2	
Hydrocele ...	I	39	...	40	I	
Orchitis ...	I	29	...	30	...	
Epididymitis ...	...	2	...	2	...	
Abscess of Testicle ...	...	1	...	1	...	
Other Diseases ...	...	2	I	2	...	
<i>Female Organs—</i>						
Ovaritis Salpingitis ...	...	2	...	2	I	
Ovarian Cyst ...	I	2	I	3	...	
Endometritis ...	...	1	...	1	...	
Uterine Tumour ...	...	3	...	3	...	
<i>Carried forward</i> ...	795	7,616	1,017	8,411	968	

RETURN OF DISEASES AND DEATHS IN 1923, AT PENANG HOSPITALS.—Continued.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions	Deaths.			
<i>Brought forward</i> ...	795	7,616	1,017	8,411	968	
<i>Female Organs.—Contd.</i>						
Rupture Perineum ...	1	2	...	3	...	
Abortion ...	...	7	2	7	...	
Pregnancy ...	...	1	...	1	...	
Postpartum Hemorrhage ...	...	1	...	1	...	
Retained Placenta ...	...	2	1	2	...	
Premature Birth ...	...	1	1	1	...	
Puerperal Septicæmia ...	...	12	2	12	...	
Other Diseases ...	...	2	...	2	...	
DISEASES OF LOCOMOTION:—						
Osteitis ...	...	8	...	8	...	
Arthritis ...	33	16	...	49	2	
Myalgia and Lumbago ...	...	11	...	11	...	
Bursitis ...	1	15	...	16	...	
Other Diseases ...	1	33	...	34	...	
DISEASES OF CONNECTIVE TISSUE:—						
Cellulitis ...	7	83	1	90	5	
Abscess ...	7	149	1	156	3	
Fibrositis ...	2	1	...	3	...	
DISEASES OF THE SKIN:—						
Urticaria ...	...	1	...	1	1	
Eczema ...	2	75	...	77	1	
Boil ...	1	4	...	5	...	
Whitlow ...	...	4	...	4	...	
Carbuncle ...	...	8	...	8	1	
Herpes ...	...	2	...	2	...	
Dermatitis ...	1	14	...	15	...	
Psoriasis ...	...	1	...	1	...	
Oriental Sore ...	...	3	...	3	...	
Tinea ...	1	44	...	45	...	
Scabies ...	3	200	...	203	1	
Sinus ...	...	31	...	31	5	
Ulcers ...	66	813	2	879	70	
<i>Carried forward</i> ...	921	9,160	1,027	10,081	1,057	

RETURN OF DISEASES AND DEATHS IN 1923, AT PENANG HOSPITALS.—*Concluded.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward ...</i>	921	9,160	1,027	10,081	1,057	
DISEASES OF THE SKIN.—<i>Cnt.</i>						
Burns and Scalds ...	2	40	...	42	1	
Injuries—General ...	...	4	4	4	...	
Local ...	20	473	14	493	14	
Bites and Stings ...	...	4	...	4	...	
Surgical Operations						
Amputations ...	2	...	...	2	...	
Tumours ...	2	52	23	54	3	
Malformations, cleft Palate and Imperfor- ate Anus ...	...	2	1	2	...	
Poisons Metallic and Caustic ...	...	2	2	2	...	
Nematoda—						
Ascaris ...	27	1,170	1	1,197	27	
Trichocephalus Dispar ...	...	38	...	38	...	
Ankylostomiasis ...	23	1,303	19	1,326	30	
Other Diseases ...	5	22	...	27	2	
Others—						
Drowning ...	...	1	1	1	...	
Debility ...	5	51	5	56	1	
Senility ...	8	33	12	41	5	
Observation ...	8	57	...	65	3	
Contacts ...	...	117	...	117	12	
N. A. D. ...	...	19	...	19	2	
Vaccinia ...	...	6	...	6	...	
Lunacy ...	...	71	...	71	4	
Total ...	1,023	12,625	1,109	13,648	1,161	

(iii)—PROVINCE WELLESLEY.

RETURN OF DISEASES AND DEATHS IN 1923, AT PROVINCE WELLESLEY

HOSPITALS.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
INFECTIVE DISEASES :—						
Beri-beri ...	...	5	...	5	2	
Chicken-pox ...	...	13	...	13	...	
Dysentery Amœbic ...	...	39	16	39	1	
Dysentery Bacillary ...	...	2	...	2	2	
Dysentery Mixed ...	4	74	17	78	6	
Enteric ...	...	3	3	3	...	
Erysipelas ...	...	2	1	2	...	
Gonorrhœa ...	3	52	...	55	4	
Influenza ...	...	56	...	56	...	
Malaria—						
(a) Tertian ...	17	286	7	303	...	
(b) Quartan ...	...	3	2	3	...	
(c) Aëstiva-autumnal ...	7	65	13	72	1	
(d) Chronic ...	1	240	6	241	4	
(e) Malaria unclass. ...	...	2	...	2	...	
Measles ...	...	5	...	5	...	
Pneumonia ...	1	59	22	60	3	
Rheumatic Fever ...	...	4	...	4	...	
Septicæmia ...	...	5	5	5	...	
Pyrexia ...	1	28	...	29	...	
Syphilis—						
(a) Primary ...	...	31	...	31	2	
(b) Secondary ...	5	102	1	107	14	
(c) Inherited ...	...	1	...	1	...	
(d) Tertiary ...	1	26	2	27	...	
Tetanus ...	1	2	3	3	...	
Tuberculosis ...	2	62	42	64	5	
Yaws ...	...	23	...	23	...	
Other Diseases ...	2	51	4	53	...	
INTOXICATIONS :—						
Alcoholism ...	...	1	...	1	...	
Morphinism ...	...	1	...	1	...	
GENERAL DISEASES :—						
Anæmia ...	...	10	...	10	...	
Carried forward ...	45	1,253	144	1,298	44	

RETURN OF DISEASES AND DEATHS IN 1923, AT PROVINCE WELLESLEY
HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward ..</i>	45	1,253	144	1,298	44	
LOCAL DISEASES.						
DISEASES OF THE NEUROTIC SYSTEM:—						
<i>Sub-section 1—</i>						
Neuritis ...	1	4	...	5	...	
Meningitis ...	...	1	...	1	...	
Myelitis ...	...	3	1	3	1	
Other Diseases ...	...	2	...	2	2	
<i>Sub-section 2—</i>						
Apoplexy ...	...	2	2	2	...	
Paralysis ...	4	32	7	36	6	
Chorea ...	...	1	...	1	...	
Epilepsy ...	...	3	...	3	...	
Neuralgia ...	...	3	...	3	...	
<i>Sub-section 3—</i>						
Mania ...	...	3	...	3	...	
Melancholy ...	...	2	...	2	...	
Dementia ...	...	1	...	1	...	
<i>Diseases of the Eye—</i>						
Conjunctivitis ...	...	9	...	9	1	
Keratitis ...	1	1	...	2	...	
Ulceration of Cornea ...	...	6	...	6	...	
Iritis ...	...	1	...	1	...	
Optic Neuritis ...	1	1	...	2	...	
Cataract ...	...	1	...	1	...	
Other Diseases ...	...	2	...	2	...	
DISEASES OF THE EAR:—						
Inflammation ...	...	7	...	7	...	
Other Diseases ...	...	2	...	2	...	
DISEASES OF THE NOSE:—						
Rhinitis ...	1	...	...	1	...	
<i>Carried forward ...</i>	53	1,340	154	1,393	54	

RETURN OF DISEASES AND DEATHS IN 1923, AT PROVINCE WELLESLEY
HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	53	1,340	154	1,393	54	
DISEASES OF THE CIRCULATORY SYSTEM:—						
Pericarditis ...	...	1	1	1	...	
Endocarditis ...	...	1	...	1	...	
Valvular Mitral, Aortic ...	...	14	2	14	1	
Valvular Myocarditis ...	...	1	...	1	...	
Arterial Sclerosis ...	...	1	...	1	...	
Aneurism ...	...	4	3	4	...	
DISEASES OF THE RESPIRATORY SYSTEM:—						
Laryngitis ...	...	1	...	1	...	
Bronchitis ...	4	87	1	91	5	
Broncho-Pneumonia ...	1	5	1	6	...	
Asthma ...	1	11	1	12	...	
Oedema Glottis ...	...	1	1	1	...	
Pleurisy ...	...	15	...	15	1	
Empyema ...	...	1	...	1	...	
Other Diseases ...	4	86	22	90	8	
DISEASES OF THE DIGESTIVE SYSTEM:—						
Sore Throat ...	...	3	...	3	...	
Inflammation of Tonsils ...	...	1	...	1	...	
Gastritis ...	...	9	...	9	1	
Ulceration of Stomach ...	...	4	2	4	...	
Dyspepsia ...	...	5	...	5	...	
Enteritis ...	...	11	2	11	...	
Appendicitis ...	...	2	...	2	...	
Colitis ...	...	11	...	11	1	
Ulceration of Intestines ...	...	1	1	1	...	
Hernia ...	...	3	...	3	...	
Diarrhoea ...	1	77	2	78	1	
Constipation ...	...	5	...	5	...	
Colic ...	2	36	...	38	...	
Ischio Rectal Abscess ...	...	2	...	2	1	
Hemorrhoids ...	...	4	...	4	...	
Hepatitis-Acute ...	1	3	...	4	...	
Abscess ...	...	6	2	6	1	
Cirrhosis ...	...	4	4	4	...	
Jaundice ...	...	6	...	6	...	
<i>Carried forward</i> ...	67	1,762	199	1,829	74	

RETURN OF DISEASES AND DEATHS IN 1923, AT PROVINCE WELLESLEY
HOSPITALS.—Continued.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	67	1,762	199	1,829	74	
LOCAL DISEASES :—						
DISEASES OF THE DIGESTIVE SYSTEM.— <i>Contd.</i>						
Peritonitis ...	1	4	3	5	...	
Ascites ...	...	1	...	1	...	
Other Diseases ...	1	9	1	10	...	
DISEASES OF THE LYMPHATIC SYSTEM :—						
Splenitis ...	...	8	...	8	...	
Inflammation of Lymphatic Gland ...	...	25	...	25	4	
Suppuration of Lymphatic Gland ...	...	25	...	25	2	
DISEASES OF THE URINARY SYSTEM :—						
Acute Nephritis ...	3	21	17	24	...	
Bright's Disease ...	3	14	2	17	3	
Pyelitis ...	...	1	1	1	...	
Hydro-Nephrosis ...	...	1	...	1	...	
Uræmia ...	...	1	1	1	...	
Renal Colic ...	...	1	...	1	...	
Cystitis ...	...	1	...	1	...	
Suppression ...	...	1	...	1	...	
DISEASES OF THE GENERATIVE ORGANS :—						
<i>Male Organs—</i>						
Peri-Urethral Abscess ...	...	3	...	3	...	
Fistula Urethra ...	...	1	...	1	...	
Stricture ...	...	6	...	6	...	
Phimosis ...	3	6	...	9	1	
<i>Carried forward</i> ...	78	1,891	224	1,969	84	

RETURN OF DISEASES AND DEATHS IN 1923, AT PROVINCE WELLESLEY
HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1922.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	78	1,891	224	1,969	84	
DISEASES OF THE GENERATIVE ORGANS.—<i>Contd.</i>						
Soft Chancre ...	...	36	...	36	4	
Inflammation of Scro- tum ...	1	1	...	2	...	
Hydrocele ...	...	8	...	8	...	
Epididymitis ...	...	2	...	2	...	
Other Diseases ...	2	7	...	9	...	
<i>Female Organs—</i>						
Salpingitis ...	...	3	...	3	...	
Endometritis ...	...	1	...	1	...	
Displacement of Uterus ...	...	2	...	2	1	
Vaginitis ...	...	1	...	1	1	
Tumour Uterus ...	1	...	...	1	...	
Menorrhagia ...	...	1	...	1	...	
Abortion ...	1	1	...	2	...	
Pregnancy ...	...	6	...	6	...	
Postpartem Hemorrhage ...	...	1	1	1	...	
Premature Birth ...	...	3	...	3	...	
Puerperal Septicæmia ...	...	4	1	4	...	
Other Diseases ...	1	2	1	3	...	
DISEASES OF LOCOMOTION:—						
Osteitis ...	...	2	...	2	...	
Periostitis ...	...	1	...	1	...	
Arthritis ...	...	11	...	11	...	
Bursitis ...	...	4	...	4	1	
Myalgia ...	...	17	...	17	4	
DISEASES OF CONNECTIVE TISSUE:—						
Cellulitis ...	6	44	1	50	8	
Abscess ...	...	55	...	55	1	
Sinus ...	...	2	...	2	...	
Elephantiasis ...	...	2	...	2	...	
Others ...	...	3	3	3	...	
<i>Carried forward</i> ...	90	2,111	231	2,201	105	

RETURN OF DISEASES AND DEATHS IN 1923, AT PROVINCE WELLESLEY
HOSPITALS.—*Concluded.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	90	2,111	231	2,201	105	
DISEASES OF THE SKIN:—						
Urticaria ...	...	1	...	1	...	
Eczema ...	1	6	...	7	...	
Boil ...	...	16	...	16	1	
Dermatitis ...	...	9	...	9	...	
Herpes ...	...	1	...	1	...	
Psoriasis ...	...	2	...	2	...	
Ulcers ...	12	102	...	114	13	
Tinea ...	1	1	...	2	...	
Scabies ...	2	58	...	60	4	
Other Diseases ...	12	135	...	147	13	
Injuries—						
General ...	7	106	10	113	...	
Local ...	30	331	5	361	18	
Tumours ...	...	8	4	8	1	
Bites and Stings ...	...	2	...	2	...	
Poisons ...	...	2	...	2	...	
Malformations ...	...	1	...	1	...	
Nematoda—						
Ascaris ...	2	171	...	173	5	
Trichocephalus Dispar ...	...	10	1	10	1	
Ankylostomiasis ...	27	443	56	470	8	
Other Diseases ...	...	2	...	2	...	
Insecta—						
Senility ...	...	11	10	11	...	
Observation ...	...	8	...	8	...	
N. A. D. ...	2	50	...	52	2	
Unclass. Diseases ...	2	83	8	85	2	
Total ...	188	3,670	325	3,858	173	

(iv)—MALACCA.

RETURN OF DISEASES AND DEATHS IN 1923, AT MALACCA HOSPITALS.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
INFECTIOUS DISEASES:—						
Black water Lever ...	...	1	...	1	...	
Beri-beri ...	32	156	28	188	34	9 deaths within 48 hrs
Cerebro-spinal Meningitis ...	...	2	2	2	...	1 death ..
Chicken-pox ...	1	10	...	11	...	
Dysentery Amœbic ...	13	108	43	121	8	12 deaths ..
Dysentery Bacillary ...	...	15	10	15	...	4 ..
Dysentery Mixed ...	...	3	3	3	...	
Erysipelas ...	...	3	1	3	2	
Gangrene ...	...	3	2	3	1	
Gonorrhœa ...	6	91	...	97	3	
Influenza ...	...	84	2	84	1	1 death ..
Leprosy ...	...	13	...	13	...	
Mycetoma ...	1	...	...	1	...	
Malaria Quartan ...	...	14	...	14	3	
Malaria B. T. ...	4	246	3	250	3	
Malaria M. T. ...	14	329	40	343	16	17 deaths ..
Malaria Double Tertian ...	...	1	...	1	...	
Malaria Chronic ...	7	120	20	127	3	4 ..
Measles ...	...	3	...	3	1	
Mumps ...	...	1	...	1	...	
Phagedena ...	1	...	1	1	...	
Plague Bubonic ...	...	5	5	5	...	4 ..
Pneumonia Lobar ...	1	76	33	77	3	15 ..
Pyæmia ...	...	1	...	1	1	
Pyrexia of uncertain origin ...	...	30	...	30	...	
Septicæmia ...	...	2	2	2	...	1 death ..
Small-pox ...	...	1	...	1	...	
Syphilis Primary ...	2	23	...	25	3	
Syphilis Secondary ...	19	170	...	189	14	
Syphilis Tertiary ...	17	39	8	56	5	
Syphilis Congenital ...	1	2	1	3	...	1 ..
Syphilis Tetanus ...	...	2	1	2	...	1 ..
Tuberculosis ...	1	1	...	2	...	
Whooping Cough ...	...	1	...	1	...	
Yaws ...	1	5	...	6	...	
INTOXICATIONS:—						
Alcoholism ...	...	3	...	3	...	
GENERAL DISEASES:—						
Anæmia ...	...	1	...	1	...	
Diabetes ...	...	2	...	2	...	
Lymphadenoma ...	...	1	1	1	...	
Carried forward ...	121	1,568	206	1,689	101	

RETURN OF DISEASES AND DEATHS IN 1923, AT MALACCA HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	121	1,568	206	1,689	101	
MORBID INCIDENT:—						
Malformations ...	...	2	...	2	...	
New Growth Malig. ...	1	15	4	16	...	
Cyst ...	...	8	...	8	...	
NERVOUS SYSTEM:—						
Multiple Neuritis ...	1	5	2	6	...	1 death within 48 hrs.
Spastic Paraplegia ...	1	3	...	4	1	
Locomotor Ataxy ...	1	1	...	2	...	
Tubercular Meningitis ...	...	2	1	2	...	
Myelitis ...	...	6	1	6	...	
Abscess Cerebral ...	...	2	2	2	...	1 " " "
Cerebral Hæmorrhage ...	...	2	2	2	...	2 deaths " " "
Facial Palsy ...	...	2	...	2	1	
Hemiplegia ...	1	10	...	11	4	
Monoplegia ...	...	1	1	1	...	
Paralysis Agitans ...	1	...	...	1	...	
Chorea ...	...	1	...	1	1	
Convulsion ...	...	2	...	2	...	
Neuralgia ...	...	7	...	7	...	
Epilepsy ...	1	2	1	3	2	
Neurasthenia ...	...	4	...	4	...	
Migraine ...	...	1	...	1	...	
EYE DISEASES:—						
Conjunctivitis ...	...	19	...	19	...	
Trachoma ...	...	1	...	1	...	
Iritis ...	...	2	...	2	...	
Optic Neuritis ...	...	1	...	1	...	
Cataract ...	1	7	...	8	3	
Ulcer Cornea ...	4	17	...	21	3	
Opacity Cornea ...	1	...	...	1	...	
Amblyopia ...	2	...	...	2	...	
Panophthalenitis ...	...	1	...	1	...	
EAR DISEASES:—						
Otitis Media ...	...	10	...	10	1	
Otorrhœa ...	...	2	...	2	...	
NOSE DISEASES:—						
Epistaxis ...	...	1	...	1	...	
<i>Carried forward</i> ...	136	1,705	220	1,841	117	

RETURN OF DISEASES AND DEATHS IN 1923, AT MALACCA HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	136	1,705	220	1,841	171	
DISEASE OF NASO PHARYNX :						
Adenoids ...	...	1	...	1	...	
CIRCULATORY SYSTEM :—						
Pericarditis ...	...	1	1	1	...	
Endocarditis ...	...	2	1	2	...	1 death within 48 hrs.
Valvular Disease Heart ...	1	23	14	24	1	4 deaths ..
Myocarditis ...	...	1	1	1	...	1 death ..
Dilatation Heart ...	1	4	3	5	...	2 deaths ..
Aneurysm Aorta ...	...	1	1	1	...	
Angina Pectoris ...	...	1	...	1	...	
Cardiac Failure ...	...	2	2	2	...	
Arterio Sclerosis ...	2	19	6	21	7	
Phlebitis ...	...	2	...	2	...	
RESPIRATORY SYSTEM :—						
Asthma ...	1	45	...	46	1	
Oedema of Glottis ...	...	1	1	1	...	
Bronchitis ...	3	110	...	113	2	
Hæmoptysis ...	...	2	...	2	...	
Broncho Pneumonia ...	1	18	9	19	2	
Phthisis ...	23	135	84	158	15	18
Pleurisy ...	1	14	1	15	...	
Empyema ...	...	3	1	3	...	
DIGESTIVE SYSTEM :—						
Stomatitis ...	...	4	...	4	...	
Cancrum Oris ...	...	1	...	1	...	
Caries Teeth ...	...	1	...	1	...	
Gum Boil ...	...	2	...	2	...	
Tonsillitis ...	1	8	...	9	...	
Peritonsillar Abscess ...	...	1	...	1	...	
Gastritis ...	1	17	...	18	...	
Gastric Ulcer ...	1	10	1	11	1	
Dyspepsia ...	...	36	...	36	...	
Enteritis ...	...	5	3	5	...	
Appendicitis ...	...	4	1	4	...	
Colitis ...	...	3	...	3	...	
Duodenal Ulcer ...	...	4	1	4	1	
Gastric dilatation ...	...	1	...	1	...	
Hernia Ing. Strangulated ...	1	3	1	4	...	
Hernia Ing. Reducible ...	...	4	...	4	...	
Hernia Ventral ...	...	1	...	1	...	
<i>Carried forward</i> ...	173	2,195	356	2,368	147	

RETURN OF DISEASES AND DEATHS IN 1923, AT MALACCA HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	173	2,195	356	2,368	147	
DIGESTIVE SYSTEM.—<i>Contd.</i>						
Pyorrhœa Alveolaris ...	...	2	...	2	1	
Diarrhœa ...	...	57	3	57	...	1 death within 48 hrs.
Constipation ...	...	3	...	3	...	
Colic Intestinal ...	...	7	...	7	...	
Ischio Rectal Abscess ...	...	5	...	5	...	
Fistula in Ano ...	...	1	...	1	...	
Hæmorrhoids ...	...	8	...	8	...	
Prolapse Anus ...	...	2	...	2	...	
Vesical Calculus ...	I	2	...	2	I	
Hepatitis ...	...	5	...	5	...	
Abscess Liver ...	...	4	1	4	...	
Cancer Liver ...	...	2	1	2	...	
Pharyngitis ...	I	5	...	6	...	
Janudice ...	...	6	...	6	I	
Peritonitis ...	...	3	3	3	...	
Cirrhosis Liver ...	I	16	8	17	3	2 deaths " " "
LYMPHATIC SYSTEM :—						
Bubo Supp. ...	...	21	...	21	3	
Perisplenitis ...	...	1	...	1	...	
Lymphadenitis Supp. ...	...	1	...	1	...	
Lymphadenitis Non-supp. ...	...	1	...	1	...	
URINARY SYSTEM :—						
Bright's Disease ...	7	94	33	101	6	8 " " " "
Tubercular Kidney ...	...	1	1	1	...	
Cystitis ...	I	5	...	6	...	
Retention of Urine ...	...	2	...	2	...	
Hæmaturia ...	...	1	...	1	...	
Albuminuria ...	...	4	...	4	...	
Bacilluria ...	...	1	...	1	...	
Pyelo. Nephritis ...	...	1	1	1	...	
GENERATIVE SYSTEM :—						
Urethritis ...	...	2	...	2	...	
Stricture Urethra ...	...	3	...	3	...	
Urethral Fistula ...	...	2	...	2	...	
Phimosis ...	...	6	...	6	...	
Paraphimosis ...	...	1	...	1	...	
Soft Chancre ...	I	44	...	45	4	
Pruritus Scrotum ...	...	1	...	1	...	
Hydrocele ...	...	5	...	5	...	
Orchitis ...	...	5	...	5	2	
<i>Carried forward</i> ...	184	2,524	403	2,709	168	

RETURN OF DISEASES AND DEATHS IN 1923, AT MALACCA HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	184	2,524	403	2,709	168	
GENERATIVE SYSTEM :—						
Epididymitis ...	...	1	...	1	...	
Ovarian Cyst ...	...	2	...	2	...	
Granuloma Pudendi ...	...	1	1	1	...	
Salpingitis ...	...	1	...	1	...	
Rupture Urethra ...	...	1	...	1	...	
Vesico Vaginal Fistula ...	...	1	...	1	...	
Endometritis ...	...	1	...	1	...	
Periurethral Abscess ...	...	1	...	1	...	
Dysmenorrhœa ...	...	1	...	1	...	
Menorrhagia ...	...	1	...	1	...	
Lencorrhœa ...	...	3	...	3	...	
AFFECT CONNECTED C PREG- NANCY :—						
Pregnancy ...	...	11	...	11	...	
Abortion ...	...	2	...	2	...	
AFFECT CONNECTED C PAR- TURITION :—						
Parturition ...	...	16	...	16	...	
Premature birth ...	...	2	2	2	...	2 deaths within 48 hrs.
AFFECT CONSEQ. ON PARTURI- TION :—						
Sapremia ...	...	1	1	1	...	1 death "
DISEASE OF THE BREAST :—						
Mastitis ...	...	1	...	1	1	
ORGANS OF LOCOMOTION :—						
Periostitis ...	2	3	...	5	...	
Caries Spine ...	2	4	2	6	...	
Necrosis Bone ...	3	10	...	13	1	
Arthritis ...	4	30	...	34	2	
Myositis ...	...	1	...	1	1	
Myalgia ...	...	8	...	8	...	
Lumbago ...	...	5	...	5	1	
Psoas Abscess ...	...	1	...	1	...	
Talipes Equino Varus ...	1	3	...	4	2	
CONNECTIVE TISSUE :—						
Cellulitis ...	5	35	7	40	7	
Abscess ...	3	61	...	64	3	
Elephantiasis ...	...	5	...	5	...	
<i>Carried forward</i> ...	205	2,737	516	2,942	190	

RETURN OF DISEASES AND DEATHS IN 1923, AT MALACCA HOSPITALS.—*Continued.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	205	2,737	516	2,942	190	
SKIN DISEASE:—						
Urticaria ...	...	2	...	2	...	
Eczema ...	I	35	...	36	3	
Impetigo ...	I	3	...	4	...	
Boil ...	...	2	...	2	...	
Psoriasis ...	...	2	...	2	I	
Leucoderma ...	...	I	...	I	...	
Carbuncle ...	I	...	...	I	...	
Tinea Imbricata ...	...	2	...	2	I	
Herpes Zoster ...	I	...	...	I	...	
Ulcers ...	56	344	...	400	48	
NAIL DISEASE:—						
Whitlow ...	I	3	...	4	I	2 deaths within 48 hrs.
General Injuries ...	...	19	2	19	...	1 death ..
Local Injuries ...	8	319	3	327	12	
POISONS:—						
Dog Bite ...	I	2	...	3	...	
Morphia and Arsenic Poi- son ...	...	I	I	I	...	1 " "
Fish Sting ...	...	4	...	4	I	
Buffalo Gore ...	...	I	...	I	I	
PARASITES:—						
Ascaris Lumbricoides ...	...	47	...	47	...	
Scabies ...	4	91	...	95	3	3 deaths ..
Ankylostomiasis ...	13	148	19	161	6	
Tape-worm ...	...	2	...	2	...	
OTHER ADMISSIONS:—						
Observation ...	...	150	...	150	11	
Observation for Insanity ...	...	47	...	47	3	
Total ...	292	3,962	441	4,254	281	

Number of deaths within 48 hours 121. Percentage of deaths to total treated 10'36. Percentage of deaths to total excluding those dying within 48 hours of admission 7'74.

(v)—LABUAN.

RETURN OF DISEASES AND DEATHS IN 1923, AT THE CIVIL HOSPITAL,
LABUAN, S. S.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
1. INFECTIVE DISEASES:—						
Amœbic Dysentery ...	...	2	1	2	...	
Beri-beri ...	1	4	2	5	...	
Dengue ...	...	1	...	1	...	
Erysipelas ...	...	3	...	3	...	
Frambœsia ...	1	5	...	6	...	
Gonorrhœal Arthritis ...	...	2	...	2	...	
Influenza ...	...	1	...	1	...	
Malaria B. T. ...	...	7	1	7	...	
Malaria Chronic ...	...	3	...	3	...	
Malaria Quartan ...	...	2	1	2	...	
Malaria Quartan and B. T. ...	...	3	...	3	...	
Malaria S. T. ...	...	42	...	42	3	
Malaria S. T. and B. T. ...	...	6	...	6	...	
Syphilitic Arthritis ...	...	1	...	1	...	
Syphilis Secondary ...	2	2	...	4	...	
Syphilis Tertiary ...	...	3	...	3	...	
2. GENERAL DISEASES NOT INCLUDED ABOVE:—						
Debility and Age ...	1	1	...	2	1	
3. MENTAL DISEASES:—						
Amentia ...	...	1	...	1	...	
4. DISEASES OF THE EYE:—						
Granular Conjunctivitis ...	...	1	...	1	...	
Iritis ...	...	1	...	1	...	
5. DISEASES OF THE NOSE:—						
Mucus Polypus ...	...	1	...	1	...	
Naso Pharyngeal Catarrh ...	...	1	...	1	...	
6. DISEASES OF THE CIRCULATORY SYSTEM:—						
Dilation Mitral Valve ...	...	1	1	1	...	
Mitral Stenosis (V. D. H.) ...	...	3	...	3	1	
Carried forward ...	5	97	6	102	6	

RETURN OF DISEASES AND DEATHS IN 1923, AT THE CIVIL HOSPITAL,
LABUAN, S. S.—Continued.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward ...</i>	5	97	6	102	6	
7. DISEASES OF THE LYMPHA- TIC SYSTEM :—						
Lymphangitis and Lym- phadenitis ...	...	1	...	1	...	
8. DISEASES OF THE RESPIRA- TORY SYSTEM :—						
Asthma ...	...	1	...	1	...	
Bronchitis (T. B. ?) ...	1	1	...	2	...	
Bronchitis ...	...	4	...	4	1	
Pleurisy (Traumatic) ...	...	1	...	1	...	
Pulmonary Tuberculosis...	1	8	2	9	3	
9. DISEASES OF THE DIGES- TIVE SYSTEM :—						
Caries tooth with Alveolar Abscess ...	...	1	...	1	...	
Cirrhosis of Liver ...	...	1	...	1	...	
Fistula and Abscess But- tock ...	...	1	...	1	...	Operation.
Fissure in Ano ...	...	1	...	1	...	
Gastritis ...	...	1	...	1	...	
Hepatitis with Ascitis ...	...	1	1	1	...	
Indigestion ...	...	1	...	1	...	
Tonsillitis (Acute) ...	...	1	...	1	...	
10. DISEASES OF THE GENERA- TIVE SYSTEM :—						
Phimosis ...	...	1	.	1	...	Circumcision.
Soft sore prepuse ...	...	1	...	1	...	
11. DISEASES OF THE FEMALE ORGANS OF GENERATION :						
Retained Placenta after abortion ...	...	1	...	1	...	Removed under anaesthetic.
<i>Carried forward ...</i>	7	124	9	131	11	

RETURN OF DISEASES AND DEATHS IN 1923, AT THE CIVIL HOSPITAL,
LABUAN, S. S.—Continued.

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward</i> ...	7	124	9	131	11	
12. DISEASES OF THE LOCOMOT. SYSTEM:—						
Osteitis 2nd Phalanx left foot ...	...	1	...	1	1	Amputated.
Periosteal Abscess (Tibia) ...	...	1	...	1	...	
Rheumatic Myositis ...	...	1	...	1	...	
Tubercular Caries (Tarsi) ...	...	1	...	1	...	Incised.
Ulceration with sinuses left Buttock and Thigh ...	...	1	...	1	...	Operation.
13. DISEASES OF THE CONNECTIVE TISSUE:—						
Abscess Thigh ...	...	4	...	4	...	Incised.
Abscess Foot ...	...	2	...	2	...	"
Abscess Perineum ...	...	1	...	1	...	"
Abscess Abdominal wall ...	...	1	...	1	...	"
Carbuncle back ...	...	1	...	1	...	"
Cellulitis ...	...	2	...	2	...	
Multiple boils ...	...	2	...	2	...	
14. DISEASES OF THE SKIN:—						
Eczema ...	...	1	...	1	...	
Eczema (pustular) ...	...	1	...	1	...	
Scabietic Ulcers ...	...	1	...	1	...	
Scabies ...	...	1	...	1	...	
Septic Sores ...	...	1	...	1	...	
Tinea Cercinata (severe) ...	...	1	...	1	...	
Tinea Imbricata ...	...	1	...	1	...	
Ulcers ...	1	4	...	5	...	
15. INJURIES:—						
Burn, Thigh, Knee and Leg (2nd degree) ...	...	1	...	1	...	
Comp. Comminuted Fracture Leg ...	1	...	...	1	...	Amputated.
Comp. Comminuted Fracture, Ulna and Radius ...	...	1	...	1	...	Operation.
Concussion and Compression ...	...	1	1	1	...	"
<i>Carried forward</i> ...	9	152	10	165	12	

RETURN OF DISEASES AND DEATHS IN 1923, AT THE CIVIL HOSPITAL,
LABUAN.—*Concluded.*

DISEASES.	Remaining in Hospital at end of 1922.	YEARLY TOTAL.		Total Cases Treated.	Remaining in Hospital at end of 1923.	REMARKS.
		Admissions.	Deaths.			
<i>Brought forward ...</i>	9	152	10	165	12	
15. INJURIES.— <i>Contd.</i>						
Cut Throat (Larynx and Pharynx) ...	...	1	1	1	...	Operation.
Incised and Lactd. wound Toe ...	...	2	...	2	...	
Lacerated wound (Croco- dile bite) ...	...	2	...	2	...	
Penetrating stab wound of Abdomen with protrusion of Omentum ...	...	1	1	1	...	
Septic Wound Foot ...	...	2	...	2	...	"
Severed forearm (parang wound) ...	...	1	...	1	...	
Severe Contusion back ...	...	1	...	1	...	
Simple Fracture left Tibia	...	1	...	1	...	
Simple Fracture of Femur lower 3rd ...	...	1	...	1	1	
16. TUMOURS AND CYSTS:—						
Carcinoma Liver ...	1	...	1	1	...	
Carcinoma Neck ...	1	...	1	1	...	
Fibroma Neck (Septic) ...	...	1	1	1	...	
Hæmorrhagic Nævus ...	...	1	...	1	...	"
17. PARASITES:—						
Ankylostomiasis ...	...	7	...	7	...	
18. POISONS:—						
Carbondioxide gas (Poi- soning) ...	...	1	...	1	...	
19. Observation ...	...	1	...	1	...	
20. N. D. D. ...	...	2	...	2	...	
Total ...	11	181	15	192	13	

APPENDIX G.

OUT-DOOR DISPENSARIES, STRAITS SETTLEMENTS.

I.—SINGAPORE.

NORTH CANAL ROAD.

REPORT BY N. RASIAH, L.M.S., SINGAPORE.

Assistant Surgeon SINHA was in charge till 12th April, 1923, when I took charge.

1. The number of patients treated during the year was 14,198 as against 15,217 in 1922. The total attendance was 34,967 as against 39,239 in 1922.

2. The average daily attendance was 128.85 as against 133.38 in 1922. Out of 14,198 new cases treated 6,536 were paying, 5,380 were Government Officers and 2,282 were indigent patients. The nationalities of those treated were as follows:—

			<i>Males.</i>	<i>Females.</i>
Europeans	...	...	84	1
Eurasians	...	...	140	54
Chinese	...	...	5,584	1,060
Malays	...	...	2,773	130
Indians	...	...	3,937	322
Others	...	...	97	16
Total	...	...	12,615	1,583

3. The principal diseases treated were:—Malaria 209, Pyrexia 1,298, Beri-beri 20, Neuritis 305, Dysentery 1,707, other Bowel Complaints 1,021, Rheumatism 429, Phthisis 123, Pneumonia 58, Broncho Pneumonia 119 and Bronchitis 1,159, Parasitic diseases 1,168, Skin diseases 785, Ulcers 1,432, Burns and Scalds 68, Wounds and injuries 466, Eye diseases 273, Abscess and Cellulitis 217, Myalgia 411 and Neuralgia 173.

VENEREAL CLINICS (NORTH CANAL ROAD AND TANJONG PAGAR).

REPORT BY R. W. C. KELLY, M.R.C.S., L.R.C.P.

Number of Fresh admissions.—

		<i>North Canal Road.</i>	<i>Tanjong Pagar.</i>	<i>Grand Total.</i>
Syphilis	...	1,995	587	2,582
Gonorrhœa	...	325	140	465
Bubœes	...	140	43	183
Soft sores	...	6	7	13

Other spirochætal affections.—

Yaws	...	5	1	6
Total number of attendances	...	11,124	4,589	15,713
Average daily attendance	...	35.25	15.6	50.31
Number of injections given	...	5,904	2,655	8,559

Drugs employed in the treatment of syphilis.

The following preparations were used:—

Arsenical Preparations.—

1. Novarsenobillon.
2. Neosalvarsan.
3. Eparsenol
4. Sulpharsenol.

Salts of Bismuth.—

1. Trepol.
2. Neotrepol.
3. Emulsion Sodium bismuth tart (Medical Hall formula).

*Drugs used in the treatment of Gonorrhœa and its complications.**By injection intravenous, intramuscular or subcutaneous.—*

1. Collosal Iodine.
2. Contramine.
3. Intramine.
4. Sulpharsenol.
5. G. Vaccine.

By irrigation.—

1. Potassium Permanganate (1 - 10,000).
2. Acriflavine (1 - 10,000).

OUT-PATIENT DEPARTMENT—KANDANG KERBAU.

REPORT BY L. S. O'MAY, M.B., *Lady Medical Officer.*

The Government Dispensary for treatment of Government servants and their families was in charge of Assistant Surgeons, RODRIGUES, DE CRUZ, and SINHA, successively throughout the year.

<i>New</i>	<i>Repetitions.</i>	<i>Total.</i>
—	—	—
3,774	994	4,768

Visits to patients in their own homes 223.

Total number of prescriptions dispensed 20,229.

Women and Children's Dispensary.—

<i>New</i>	<i>Repetitions.</i>	<i>Total.</i>
—	—	—
6,164	9,149	15,313

Of these 6,164 cases 3,086 were children.

Nationalities.—

Chinese	...	...	...	...	3,246
Eurasians	...	...	...	...	1,363
Tamils	...	...	...	...	771
Malays	...	...	...	...	435
Jews	...	...	...	...	172
Japanese	...	...	...	...	73
Bengalis	...	...	...	...	68
Sikhs	...	...	...	...	12
Others	...	...	...	...	14
Total					6,164

There were 559 cases of venereal diseases :—

Syphilis	...	...	...	...	167
Gonorrhœa	...	...	...	...	245
Syphilis and Gonorrhœa	...	...	...	...	132
Congenital Syphilis	...	...	...	...	15
					559

The number of fever cases were :—

					B. T.	61
Malaria	...	...	...	71	S. T. R.	6
					Mixed	4
Unspecified	...	...	...	511		
			Total	...	582	

Ankylostomiasis.—

Cases number 24.

Microscopical.—

Examination numbered 1,280.

Children diseases (age 1 year and under).

Number of children treated 622.

1. Diseases of Gastro-intestinal system	...	...	240
2. Diseases of Respiratory system	...	...	233
3. Diseases of eye	...	...	7
4. Diseases of ear	...	...	5
5. Diseases of the skin	...	...	51
6. General diseases	...	...	86

Under 2 years of age and above 1 year.

Number of children treated 456.

Diseases of Gastro-intestinal system	...	...	143
Diseases of Respiratory system	...	...	156
General diseases	...	...	90
Skin diseases	...	...	52
Diseases of eye	...	...	5
Diseases of ear	...	...	9
Genito-urinary system	...	...	2

Under 14 years of age and above 2 years.

Number of children treated 2,008.

Gastro-intestinal system	...	...	414
Diseases of eye	...	...	87
Respiratory system diseases	...	...	482
Diseases of throat and nose	...	...	115
Diseases of ear	...	...	33
Diseases of Genito-urinary system	...	...	24
General diseases	...	...	654
Skin diseases	...	...	209

OUT-DOOR DISPENSARY, PAYA LEBAR.

The Dispensary was opened on the 8th November, 1922.

Staff.—Assistant Surgeon N. N. MITRA has been in charge throughout the year.

Work done.—The Dispensary was open on 299 days. The number of patients treated during the year was 4,147 and the number of attendances was 14,919, the daily average during the year was 49.7 and the number of female patients 1,320. There were 1,193 paying cases, 2,273 indigent patients and 681 Government servants and school boys. The total receipts for the year was \$305.60.

The principal diseases treated and their number were as follows:—

Beri-beri	...	...	...	...	78
Dysentery	...	...	...	...	78
Malaria	...	...	...	...	417
Venereal diseases	...	...	...	...	104
Valvular diseases of the heart	...	...	...	...	31
Bronchitis	...	...	...	...	254
Diarrhœa, etc.	...	...	...	...	127
Ulcers	...	...	...	...	693
Round-worm	...	...	...	...	414
Dog-bite	...	...	...	...	30
Wounds and injuries	...	...	...	...	372

In all fever cases, except in the young, blood films were taken and sent to the Tan Tock Seng Hospital laboratory for examination.

The addresses of all Malaria cases were noted down and supplied to the Sanitary Inspector for necessary action. A spot map of all such cases was kept.

Free injections of the neo-salvarsan were given to all primary and secondary cases of Syphilis; the number of such injections given during the year, being 96. Many patients defaulted before a full course of treatment was over. One hundred and nineteen irrigations were performed during the year for Gonorrhœa.

The water supply from the Dispensary well was fairly satisfactory, except for a short period in October, when there was acute scarcity of water throughout the districts.

OUT-DOOR DISPENSARY, BUKIT TIMAH.

REPORT BY V. P. MENON, L.R.C.P. AND S. (Edin.).

The Dispensary was opened on January 17, 1923, and Assistant Surgeon LEE KEK SOON was in charge. Assistant Surgeon VELLASAMY succeeded Mr. KEK SOON, when the latter was transferred.

Mr. VELLASAMY was in charge until December 4, 1923, when I took over from him.

Work done.—Two thousand seven hundred and ninety patients were treated and there have been 6,268 attendances during the year.

The Dispensary was open for 283 days and the daily average for the year was 32.01 patients.

Principal diseases treated were:—

Malaria 1,274, Pyrexia 139, Diarrhœa 42, Bronchitis 299, Wounds 72, Conjunctivitis 34, Ulcers 200, Ascariasis 45, Ring-worm 32, Venereal diseases 149, Beri-beri 44, Dysentery 26, Dyspepsia 25 and Anæmia 24.

The nationalities of the cases treated were:—

	Males.	Females.
Europeans	5	1
Eurasians	5	11
Chinese	1,573	437
Indians	567	51
Malays	116	21
Other nationalities	1	2
Total	2,667	523

Malaria.—One thousand two hundred and seventy-four cases were treated during the year under report and the majority of them came from Bukit Panjang district and Jurong Road. The number of cases of malaria from Bukit Timah district was comparatively small.

Cases of admission for malaria were lowest in January 40 and highest in May and June, being 135 and 120 respectively. Since then the number was always between 70 and 80.

The names, addresses, and place where the malaria was probably first contracted were noted down in a book and the Sanitary Inspector visited such places and took action.

In connection with the above, a rough spot map for malaria and a monthly chart of the cases of malaria treated at the Out-door Dispensary were prepared.

Syphilis.—One hundred and thirty-five cases were treated during the year and 185 intravenous injections of N. A. B. were given. Some of the patients receiving weekly injections for two to more weeks.

The average daily attendance shows a slow but steady increase.

I made several visits to the villages and estates to make the acquaintance of the people and to induce the sick to come to the Dispensary.

Reformatory.—Visited twice weekly and 80 visits were paid during the year. There were no serious cases of illness to report; two cases of chicken-pox of mild type and few cases of scabies occurred.

Severe cases of scabies were sent to the Hospital for treatment, while mild cases were isolated and treated at the Reformatory.

The general health of the boys was good.

OUT-DOOR DISPENSARY, JOO CHIAT ROAD.

REPORT BY ASSISTANT SURGEON LEE KEK SOON, L.M.S.

This Dispensary was opened on 1st October, 1923.

The number of patients who attended during the three months was 824 and the total number of attendances was 2,524.

The average daily attendance of 44.6.

The nationalities were as follows:—

			Males.	Females.
Europeans	...	...	3	—
Eurasians	...	...	54	44
Chinese	...	...	332	123
Malays	...	...	91	33
Indians	...	...	121	19
Others	...	...	3	1
Total	...	...	604	220

The principal diseases treated were:—

Malaria	...	...	...	41
Syphilis	...	...	...	54
Gonorrhœa	...	...	...	25
Bronchitis	...	...	...	156
Parasitic diseases	...	...	...	123
Wounds and Injuries	...	...	...	25
Ulcers	...	...	...	100
Beri-beri	...	...	...	20

OUT-DOOR DISPENSARY, PASIR PANJANG.

The Dispensary was opened on 23rd October, 1923.

The number of patients who attended to the end of the year was 77 and the total number of attendances was 92.

The dispensary is in charge of Dresser ALLAPITCHAY.

II.—PENANG.

CHOWRASTA OUT-DOOR DISPENSARY.

1. The patients treated during the year numbered 11,680 against 9,956 in 1922, the total number of visits being 201,148.

2. The Dispensary was open for 312 days, the daily average number of visits being 64.57 against that of 60.93 in 1922.

3. The Institution continues to be well appreciated by the poorer classes. The Malays, especially, are coming in—in increasing numbers. The total number of intravenous injections given during the year, were 494 for Syphilis, 70 for Yaws and 37 for Gonorrhœa.

4. Spittals solution was used during the first half of the year and Neo-salvarsan during the second half. Acriflavine was used for Gonorrhœa.

5. The principal diseases treated as compared with that of the preceding year were as follows:—

	1922.	1923.
Influenza	7	141
Malaria unclassified	...	552
Malaria B. T.	...	174
Malaria M. T.	1,150	22
Malaria Q.	...	11
Malaria Chronic	...	139
Pyrexia (due to intoxication from bowels)	1,631	1,467
Venereal diseases	911	950
Bronchitis	729	787
Diarrhœa	82	174
Ulcers	1,548	1,708
Injuries	493	610
Yaws	7	78

6. List of Venereal diseases treated as compared with the preceding year.

	1922.	1923.
Gonorrhœa	118	95
Gonorrhœa Rheumatism	8	—
Gonorrhœa Conjunctivitis	29	11
Chancre	112	55
Bubœs	50	39
Syphilitic Adenitis	32	37
Syphilitic Periostitis	10	3
Syphilitic Orchitis	9	22
Syphilitic Epididymitis	2	9
Syphilitic Arthritis	21	36
Syphilitic Ulcers	182	63
Syphilitic Rheumatism	276	329
General Secondary Syphilis	55	144
General Tertiary Syphilis	7	29
Primary Syphilis	—	78
Total	911	950

OUT-DOOR DISPENSARY, BALIK PULAU AND BAYAN LEPAS, PENANG.

The total number of persons who presented themselves for treatment during the year was 3,304 made up as follows:—

	<i>School children.</i>	<i>Other cases.</i>	<i>Total.</i>
Balik Pulau ...	800	1,572	2,372
Bayan Lepas ...	369	563	932
	<u>1,169</u>	<u>2,135</u>	<u>3,304</u>

OUT-DOOR DISPENSARY, BUTTERWORTH.

Two thousand and eighty-six cases were treated during 1923, as compared with 1,363 for 1922. Of these 457 were paying patients, 1,058 indigent patients and 571 Government Officers. The number of visits paid was 2,995. Receipts for the year amounted to \$176.70 as compared with \$319.86 for the previous year.

Principal diseases treated were:—

Malaria ...	122	Ascariasis ...	38
Fever unclassified ...	246	Syphilis ...	34
Bronchitis ...	150	Dyspepsia ...	55
Rheumatism ...	42	Asthma ...	39
Diarrhoea ...	23	Ring-worm ...	16
Scabies ...	59	Colic Intestinal ...	12
Gonorrhœa ...	21	Splenitis ...	19
Eczema ...	21	Yaws ...	395
Constipation ...	41	Tonsillitis ...	30
Influenza ...	15		

Nationalities of the patients treated were:—

	<i>1922.</i>		<i>1923.</i>	
	<i>Males.</i>	<i>Females.</i>	<i>Males.</i>	<i>Females.</i>
Europeans ...	93	49	61	41
Eurasians ...	41	25	29	30
Chinese ...	326	64	322	61
Malays ...	179	21	685	142
Indians ...	409	143	541	170
Others ...	12	1	4	—
Total ...	<u>1,060</u>	<u>303</u>	<u>1,642</u>	<u>444</u>

OUT-DOOR DISPENSARY, PENAGA.

One thousand and sixty-eight cases were treated during the year. Of these 44 were paying patients, 657 indigent and 367 Government Officers. The number of visits paid was 1,536. The receipts for the year amounted to \$9.25. The Dispensary was open twice a week and was managed by the Senior Dresser from the Butterworth Hospital.

Principal diseases treated were:—

Malaria ...	25	Syphilis ...	44
Scabies ...	71	Asthma ...	7
Ring-worm ...	58	Ascariasis ...	17
Bronchitis ...	39	Anæmia ...	15
Rheumatism ...	22	Ankylostomiasis ...	4
Yaws ...	202	Eczema ...	31
Constipation ...	34		

Nationalities of the patients treated were:—

		1922.		1923.	
		Males.	Females.	Males.	Females.
Europeans	...	2	—	4	—
Eurasians	...	21	8	17	6
Chinese	...	75	17	83	13
Malays	...	914	96	659	52
Indians	...	169	28	207	27
Others	...	—	—	—	—
Total	...	1,181	149	970	98

OUT-DOOR DISPENSARY, BUKIT MERTAJAM.

Out-patients.—Total number of patients treated during the year was 3,558 as against 2,457 of 1922.

The number of attendances was 6,118 as against 3,973 in 1922.

The nationalities of the patients were:—

		Males.	Females.
Europeans	...	23	11
Eurasians	...	40	38
Chinese	...	681	265
Malays	...	1,524	177
Indians	...	523	110
Others	...	122	44

The principal diseases treated were:—

Malaria	...	341	Intestinal colic	...	17
Dysentery	...	45	Syphilis	...	82
Rheumatism	...	39	Anæmia	...	101
Dyspepsia	...	19	Gonorrhœa	...	45
Diarrhœa	...	20	Pyrexia	...	334
Conjunctivitis	...	18	Round-worm	...	124
Bronchitis	...	173	Ankylostomiasis	...	27
Phthisis	...	13	Influenza	...	27
Ulcers	...	87	Pneumonia	...	22
Yaws	...	625			

OUT-DOOR DISPENSARIES, SUNGEI BAKAP, NIBONG TEBAL AND SIMPANG AMPAT.

Three part time out-door dispensaries are worked from Sungei Bakap Hospital.

Two have been carried on throughout the year. The other at Simpang Ampat was opened early in June. The number of cases treated in the three out-door dispensaries is as follows:—

Out-door Dispensaries.	Patients.	Attendances.
Sungei Bakap	...	1,986
Nibong Tebal	...	1,380
Simpang Ampat	...	293
		3,046
		2,672
		477

OUT-DOOR DISPENSARY, LUMUT.

Out-patients.—Total number treated 868 as against 904 of the previous year. The total visits paid numbered 1,218 as against 1,285 of previous year. Four hundred and seventy-four Malays attended the Dispensary as against 364 of the previous year. The total cash receipts for the year was \$190.88.

III.—MALACCA.

GOVERNMENT OUT-DOOR DISPENSARY, CENTRAL DIVISION, MALACCA.

Five thousand and eighty-six cases were treated in the Dispensary as contrasted with 4,491 in 1922.

The following is the total of nationalities:—

			<i>Males.</i>	<i>Females.</i>
Europeans	...	...	64	36
Eurasians	...	...	1,068	853
Chinese	...	...	932	355
Malays	...	...	967	141
Indians	...	...	516	144
Others	...	...	6	4
Total	...	...	3,553	1,533

The most prevalent diseases treated were:—

Dysentery	...	55	Dyspepsia	...	318
Bronchitis	...	1,148	Diarrhoea	...	118
Malaria	...	94	Colic	...	98
Inflammation	...	39	Influenza	...	214
Broncho Pneumonia	...	13	Myalgia	...	73
Measles	...	19	Asthma	...	130
Ulcers	...	224	Fever unclassified	...	451
Rheumatism	...	114	Eczema	...	103
Tinea	...	90	Round-worms	...	250
Tonsillitis	...	69	Neuralgia	...	87
Neuritis	...	48	Constipation	...	220
Scabies	...	163	Enteritis catarrh	...	34
Wounds	...	67	Inflammation ear	...	31
Conjunctivitis	...	56			

OUT-DOOR DISPENSARY, DURIAN DAUN HOSPITAL.

One thousand and fifty patients attended the Dispensary during the year. The number of visits amounted to 1,230. There were 89 cases of Malaria, 96 of Yaws and 134 cases of Syphilis.

OUT-DOOR DISPENSARY, JASIN.

Total number of cases treated	...	...	3,262
Total number of visits	...	...	3,920
Total number of Government servants	...	...	225
Total number of paying cases	...	...	93
Total number of free cases	...	...	2,946
Total number of males	...	...	2,251
Total number of females	...	...	1,011

An Out-door Dispensary was started at Merlimau, in September, and the Assistant Surgeon visits Merlimau, every Thursday, at 10 A.M. and treats the cases at the Court house. Three hundred and twelve cases were treated till the end of the year, the number of visits paid was 398.

The Chief Diseases treated were:—

Ascariasis	...	41	Influenza	...	27
Asthma	...	21	Scabies	...	108
Bronchitis	...	58	Syphilis	...	479
Malaria	...	88	Gonorrhœa	...	23
Diarrhœa	...	19	Ulcer	...	108
Gastritis	...	38	Yaws	...	1,920

Intravenous Injections of Neo-salvarsan:—

<i>Diseases.</i>	<i>No. of cases treated.</i>	<i>No. of injections.</i>	<i>Malays.</i>
—	—	—	—
Yaws	... 1,920	2,124	1,849
Syphilis	... 479	561	288

ALOR GAJAH DISPENSARY.

During the year 1923, the following received treatment:—

Males 3,568 and Females 2,145: Malays 4,169, Chinese 1,341, Indians 176, Europeans 11, Eurasians 9 and others 7.

The chief diseases treated were:—

Yaws	...	3,969	Bronchitis	...	55
Scabies	...	350	Beri-beri	...	45
Ulcers	...	200	Diarrhœa	...	32
Constipation	...	198	Conjunctivitis	...	28
Malaria	...	244	Ankylostomiasis	...	51
Syphilis secondary	...	155	Rheumatism	...	54
Asthma	...	68	Round-worm	...	35
Eczema	...	63			

Number of cases injected with Neosilversm from 15th February, 1923 to 31st December:—

Yaws	...	...	...	...	3,968
Syphilis	...	...	...	...	157
Malaria	...	...	...	...	52
					—
			Total	...	4,177
					—

IV.—LABUAN.

One thousand two hundred and forty-three cases were treated as out-patients as against 1,501 in 1922.

Nationalities.—Europeans 70, Eurasians 25, Chinese 110, Malays 902, Indians 108 and other nationalities 28.

The Chief Diseases treated were Malaria, Bronchitis, Constipation, Round-worm, Scabies, Ulcer and Injuries.

APPENDIX H.

SINGAPORE PRISON.

REPORT BY A. LOGAN MURISON, M.R.C.S., L.R.C.P.

1. The Sanitary condition of the Prison was good and the health of the prisoners satisfactory.

2. *Admissions to Hospital.*—There were 950 admissions, including 5 Europeans and 8 Eurasians. This with 19 who remained from the previous year gives a total treated of 969. The average daily sick was 29·69 against 26·40 in the previous year.

3. The diseases which showed most admissions were:—

Dysentery 49, Venereal diseases 110, Malaria 24, Valvular disease of the Heart 24, Bronchitis 23, Pulmonary Tuberculosis 32, Diarrhoea 107, Parasitic diseases 30 and Ulcers 20.

4. *Enteric Fever.*—There were two admissions with no deaths.

5. The figures for the different classes of prisoners can be seen from the following table:—

	<i>Criminal.</i>	<i>Civil.</i>	<i>Vagrants.</i>
A. Total number in Prison	3,498	4,783	925
B. Average daily in Prison	889	115	71
C. Total treated in Hospital	850	36	83
D. Percentage of C to A	24·3	·75	8·9
E. Total deaths	42	2	2

6. *Deaths.*—There were 37 deaths in Hospital distributed amongst the different grades:—

Middle 26, Lower 2, Short-sentence 6 and Vagrants 3. The percentage of deaths to total treated in Hospital was 3·81 per cent as compared with 35 deaths and 4·1 per cent in 1922.

7. One death occurred in E Hall, a Chinese vagrant from Valvular disease of the Heart.

8. Seventeen patients were transferred to the General Hospital for major Operations.

9. One hundred and forty vagrants suffering from serious complaints were transferred to the Tan Tock Seng's Hospital for treatment.

10. Twenty-one prisoners were transferred to the Lunatic Asylum.

11. *Suicide.*—One Tamil, a long-sentence prisoner, committed suicide by hanging in Cell No. 33 in C Hall.

12. *Executions.*—There were seven. Six Chinese and one Javanese.

PENANG PRISON.

1. The sanitary condition of the Prison and the health of the prisoners were satisfactory.

2.—(a) Nine patients remained in hospital at the beginning of 1923 and 288 cases were admitted during the year making a total of 297 cases treated as compared with 303 in 1922.

(b) The daily average of sick for the year was 14·03 as compared with 15·73 of the previous year.

(c) One thousand nine hundred and eighty-six prisoners were treated as out-patients during the year as compared with 907 in previous year.

The average daily attendance was 21.02 as compared with 26.25 of previous year.

The principal diseases treated amongst those attending as out-patients were:—

Injuries	...	...	...	...	352
Diarrhœa	...	...	...	...	222
Bronchitis	...	...	...	...	192
Ulcers	...	...	...	...	221
Syphilis	...	...	...	...	130
Colic	...	...	...	...	116
Gonorrhœa	...	...	...	...	38

(d) Eighteen deaths occurred during the year with a death-rate of 6.06 as compared with 10 deaths and a death-rate of 3.3 in 1922.

The causes of death were:—

Dysentery	...	...	...	...	6
Chronic Malaria	...	...	...	...	1
Chronic Bronchitis	...	...	...	...	1
Pneumonia	...	...	...	...	1
Pulmonary Tuberculosis	...	...	...	...	5
Ankylostomiasis	...	...	...	...	2
Valvular disease of heart	...	...	...	...	2

18

(e) Eighty-six vagrants were admitted to hospital during the year—13 deaths occurred among vagrants.

(f) Of the total number of prisoners and vagrants admitted to the prison and house of detention 1,214 were criminals and 327 vagrants.

(g) The principal diseases treated among patients were:—

Dysentery	...	...	...	...	17
Malarial Fever	...	...	...	...	26
Bronchitis	...	...	...	...	19
Injuries	...	...	...	...	18
Ankylostomiasis	...	...	...	...	20

(h) There were two cases of judicial hanging during the year.

(i) Two hundred and seventy-five specimens of stool were examined during the year.

Twenty-five were found to contain ova ankylostomiasis.

Thirty-four were found to contain ova ascaris umbricoides.

Thirty-six were found to contain ova T. Dispar.

MALACCA PRISON.

Two cases remained in the Prison Hospital at the end of December, 1923, and there were 31 admissions during the year.

Chief Diseases.—Ankylostomiasis, Diarrhœa, Dysentery, Simple Continued Fever.

APPENDIX I.

TREATMENT FOR LEPROSY.

At the Leper Asylum, Pulau Jerejak.

A.—(a) Cases remaining under treatment at the end of 1922	...	357
(b) New cases seeking treatment	...	59
(c) Total under treatment on 31st December, 1923	...	416
The drugs used have been—		

B.—(a) *E. C. C. O.*—The Ethyl esters of the fatty acids of the oil of *Hydnocarpus Wightiana* with camphor, creasote and olive oil.

The dosage given was:—

Commencing dose 0.25 c.c. twice weekly given intramuscularly, increased by 0.25 c.c. at each subsequent injection, till a reaction was produced, this usually occurs with a dose of 2 c.c. maximum dose 4 c.c.s. Inunctions of *Ol. Chaulmoogra* twice daily and nasal spraying with *E. C. C. O.* were given daily, to those who accepted this additional method of treatment.

Total number of cases treated	...	134
Not improved	...	80
Improved	...	51
Much improved	...	1
Lesions disappeared	...	2
		134

(b) *Sodium Hydnocarpate et Soyate 3 per cent solution dosage.*

Commencing dose 0.5 c.c. intravenously twice weekly, increased at each subsequent injection by 0.5 c.c. till a maximum dose of 4 to 5 c.c. is reached given once weekly. Inunctions of *Ol. Chaulmoogra* daily, inunctions were given as well, with nasal spray of *E. C. C. O.*

Total number of cases treated	...	16
Not improved	...	10
Improved	...	3
Much improved	...	2
Lesions disappeared	...	1
		16

(c) *Sodium Morrhuate 3 per cent solution.* Same dosage as (b).

Total number of cases treated	...	10
Not improved	...	6
Improved	...	3
Much improved	...	1
Lesions disappeared	...	Nil.
		10

Inunctions of *Ol. Chaulmoogra* daily.

(d) *Thymol et Ol. Morrhuae 10 per cent solution.*

Commencing dose 0.5 c.c. intramuscularly twice weekly increased at each subsequent injection by 0.5 c.c. till 4 c.c. was reached as advocated by Dr. HAMZA, but the injections are very painful and the inmates began to shirk continuing this treatment, so I made a 20 per cent solution, commencing with 0.25 c.c. twice weekly increased by 0.25 c.c., at each subsequent injection, till a maximum dose of 2 c.c.s. given once weekly was reached. This is well tolerated.

Total number of cases treated	...	...	...	160	
Not improved	...	...	...	52	} 160
Improved	...	...	...	106	
Much improved	...	...	...	2	
Lesions disappeared	...	...	...	Nil.	

(d) This method was commenced in October after my return from the Far Eastern Congress of Tropical Medicine, and in most cases does show good results, but it is too soon to make any comments.

(e) *Moogrol*. (B. W. & Co.).

Dosage 0.5 c.c. intramuscularly twice weekly increased by 0.5 c.c. till 4 c.c. was reached.

Total number of cases treated	...	...	...	48	
Not improved	...	...	...	45	} 48
Improved	...	...	...	2	
Much improved	...	...	...	1	
Lesions disappeared	...	...	...	Nil.	

(f) *Moogrol et Thymol* 5 per cent solution used since October, 1923.

Dosage 0.5 c.c. intramuscularly increased by 0.5 c.c. till 4 c.c. was reached.

Total number of cases treated	...	...	...	30	
Not improved	...	...	...	10	} 30
Improved	...	...	...	19	
Much improved	...	...	...	1	
Lesions disappeared	...	...	...	Nil.	

Internally Thymol grs. 2 was given twice daily.

(g) *Ichthyol et Ol. Morrhuæ* 20 per cent used since September, 1923.

Dosage 0.5 c.c. twice weekly intramuscularly increased by 0.5 c.c. till 4 c.c., given once weekly was reached.

Total number of cases treated	...	...	...	10	
Not improved	...	...	...	7	} 10
Improved	...	...	...	2	
Much improved	...	...	...	1	
Lesions disappeared	...	...	...	Nil.	

(h) *Sodii Salicylas et Tr. Iodine* 30 per cent solution used since November, 1923.

Dosage 0.5 c.c. intramuscularly increased by 0.5 c.c. till 3 c.c. was reached.

Total number of cases treated	...	...	...	5	
Not improved	...	...	...	3	} 5
Improved	...	...	...	2	
Much improved	...	...	...	Nil.	
Lesions disappeared	...	...	...	Nil.	

Soda Salicylic was given internally as well in 10 gr. doses thrice daily.

I was much struck with the use of this drug given internally to a case who had rheumatism, the leprosy lesions began to decrease and the patient saw the improvement himself, thus I have been led to try it by the intramuscular method as well. Many of the inmates now ask for this drug to be given internally.

- (i) *Bismuth Potassium Tartrate* is being tried in 3 cases since November, in the following formula:—

Recipe—

Bismuth Potass Tartrate grs. 480.

Lanoline grs. 1920.

Ol. Olive c $\frac{1}{2}$ per cent acid carbolic oz. vi.

Dosage 1 c.c. once weekly intramuscularly.

- (j) *Tai Fong Chee* Internal treatment only.

Total number of cases treated	...	...	...	20	
Not improved	...	...	...	18	} 20
Improved	...	...	...	2	
Much improved	...	...	...	Nil.	
Lesions disappeared	...	...	...	Nil.	

I have not included these 20 in my total number under treatment.

CHAN HIN, Kheh, 34 years of age, admitted 1st June, 1921. Duration of disease 3 years.

Condition on admission small pinkish tubercles on ears, face and forehead, contraction of ring and little fingers of left hand, anæsthesia of both hands, forearms and feet. Put on E. C. C. O. on 10th December, 1921.

PHOTOGRAPH NOT REPRODUCED.

Condition on 30th June, 1922.—Small tubercles on ears only, slight contraction still of fingers of left hand. Anæsthesia of left hand and forearm.

Condition on 31st December, 1922.—Free from all clinical signs of leprosy, return of sensation, contraction of fingers disappeared. Ulna nerve still slightly thickened, smears negative.

Discharged apparently cured on 7th May, 1923. Employed as a non-leper gardener, has put on weight considerably. Is in perfect health.

Treatment received:—

1921	...	...	...	7 injections of E. C. C. O.
1922	...	...	...	73 injections of E. C. C. O.
1923	...	...	...	48 injections of E. C. C. O.

Inunctions daily with Ol. Chaulmoogra, internally Ol. Chaulmoogra.

Nasal spray of E. C. C. O. almost daily.

VELLIAN, Tamil, 35 years of age,
duration of disease 7 years. Admitted
on 1st April, 1914.

PHOTOGRAPH NOT REPRODUCED.

*Condition in March, 1921, when
treatment was commenced.*—Nodular
thickening of cheeks, forehead and
ears. Anæsthetic patches lower ex-
tremities up to knees. Perforating
ulcer right sole.

PHOTOGRAPH NOT REPRODUCED.

*Condition on 31st December,
1923.*—Apparently cured. Free from
all external clinical lesions, smears
negative. Perforating ulcer healed.
Looks much stronger.

Treatment given:—

1921 ... 48 intravenous injections
Sodium Hydnocarpate
et Soyate.

PHOTOGRAPH NOT REPRODUCED.

1922 ... 62 intramuscular injections
E. C. C. O.

1923 ... 66 intramuscular injections
E. C. C. O.

Inunctions of Ol. Chaulmoogra daily. Internally Ol. Chaulmoogra.

PHOTOGRAPH NOT REPRODUCED.

Nasal spray with E. C. C. O. almost daily.

YAP SONG BENG, Kheh, 15 years of age, admitted 27th August, 1921.

Condition on 14th December, 1921, when treatment was commenced. Both ears thickened, tubercles on malar bones and right cheek large anæsthetic patches on back and outer part of thighs. Very thin and debilitated.

PHOTOGRAPH NOT REPRODUCED.

Condition December, 1923.—Is very much stouter, ears thickening much decreased, tubercles over malar bones and right cheek disappeared. Slight thickened area of skin on right cheek still. Sensation returned to previous anæsthetic areas.

Has had the following number of injections:—

1921	...	...	6 intravenous injections of Sodium Hydno-
			carbate et Soyate 3 per cent solution.

1922	...	...	49 intravenous injections of Sodium Hydrocarbate et Soyate 3 per cent.
1922	...	...	15 intravenous injections of Sodium Morrhuate.
1922	...	...	27 intramuscular injections of E. C. C. O.
1923	...	...	46 intravenous injections Sodium Morrhuate.
1923	...	...	26 intravenous injections Sodium Hydrocarbate et Soyate.
1923	...	...	2 intramuscular injections Thymol et Oil Morrhuæ.

Inunctions daily with Ol. Chaulmoogra nasal spray with E. C. C. O. almost daily.

YONG YONG, Kheh, 35 years of age, admitted 8th February, 1922. Duration of disease 1 year.

Treatment with E. C. C. O. commenced on 12th February, 1922.—Both ears very thickened, skin over malar bones very thickened, anæsthetic patches on back, numbness of hands and feet.

Condition on 31st December, 1923.—Ears almost normal small pigmented raised patch on right ear, sensation returned in hands and feet. Skin face normal.

PHOTOGRAPH NOT REPRODUCED.

Treatment given:—

1922	...	36 intramuscular injections E. C. C. O.
1922	...	4 intramuscular injections Moogrol.
1923	...	54 intramuscular injections E. C. C. O.

SONG TONG, 33 years of age, admitted 5th August, 1921, duration of disease 3 years.

Condition on admission.—Ears much thickened, large pinkish nodular masses on face and body. Large pinkish lepra tumour about the size of a small cocoanut on left lumbar region. Smears from nodules and tumour shewed lepra bacilli.

Condition on 31st December, 1923.—Ears almost normal, nodular masses on face and body disappeared. Lepra tumour greatly decreased, very slightly raised above surrounding skin.

PHOTOGRAPH NOT REPRODUCED.

Treatment given:—

1921 ... 17 intravenous injections
Sodium Hydnocarpate et Soyate.

1922 ... 4 intravenous injections
Sodium Hydnocarpate et Soyate.

1922 ... 46 intramuscular injections E. C. C. O.

1923 ... 17 intramuscular injections E. C. C. O.

Reacts very strongly to 2 c.c. E. C. C. O. (I. M.) maximum dose in this case has not exceeded 1 c.c. for past 30 injections.

VENGKETRAMA, Tamil, 41 years of age, admitted on 27th April, 1921.

Condition on 30th June, 1921. Nodular thickening of skin of face, conine expression ears very thickened, anæsthetic patches body forearms, hands, legs and thighs. Perforating ulcer right sole.

PHOTOGRAPH NOT REPRODUCED.

Condition on 31st December, 1923.—Thickening of face much decreased, ears very slightly thickened, sensation has returned to anæsthetic patches on body, but there is some loss of pigment, and these patches are lighter. Perforating ulcer healed.

Treatment given:—

1921 ... 18 intravenous injections Sodium Hydrocarbate.

1922 ... 44 intramuscular injections E. C. C. O.

1923	...	...	42 intramuscular injections E. C. C. O.
1923	...	...	11 intravenous injections Sodium Hydrocarbate et Soyate.

WONG AH CHIN, Kheh, 18 years of age, admitted on 20th January, 1921.

Condition on admission.—Large pinkish lepra tubercles on face, ears enormously thickened and standing out, ulcers fingers and toes. Anæsthesia of lower extremities up to knees, of both arms and forearms, very morose in nature.

PHOTOGRAPH NOT REPRODUCED.

Condition on 31st December, 1923.—Large tubercles on face absent, ears, thickening greatly reduced, ulcers have all healed. Sensation has returned, and is of a more cheerful disposition.

Treatment given:—

1921	...	...	7 intravenous injections Sodium Hydrocarbate et Soyate.
1922	...	...	33 intramuscular injections E. C. C. O.
1923	...	...	21 intramuscular injections E. C. C. O.
1923	...	...	5 intravenous injections Sodium Morrhuate.
1923	...	...	7 intramuscular injections Thymol et Ol. Morrhuce.

PHOTOGRAPH NOT REPRODUCED.

LOW AH HONG, Hylam, 15 years of age, admitted on 3rd October, 1922.

Condition on admission.—Both ears very thickened, extensive nodular patch on right cheek. Ulcers on hands, legs and feet. Put on E. C. C. O. on 7th October, 1922. Improved rapidly, ulcers healed, ears thickening greatly decreased, nodular patch on right cheek greatly reduced.

Condition on 31st December, 1923.—In a stationary state, no further improvement.

PHOTOGRAPH NOT REPRODUCED.

Treatment given:—

1922	...	...	22 intramuscular injections of E. C. C. O.
1923	...	...	10 intravenous injections of Sodium Morrhuate.
1923	...	...	16 intramuscular injections of E. C. C. O.
1923	...	...	11 intravenous injections of Sodium Hydrocarbate et Soyate.
1923	...	...	2 intramuscular injections of Thymol et Ol. Morrhuæ.
1923	...	...	4 intramuscular injections of Moogrol and Thymol.

HONG KONG FOO, Hylam, 25 years of age, admitted 12th February, 1919. With great inducement agreed to start treatment, said his case was hopeless, his face was too disfigured to ever get well.

Condition on 11th July, 1922.—When put on E. C. C. O., ears very thickened marked nodular thickening of forehead and over malar bones. Slight contraction of fingers of left hand. Small nodular patches on body. Anæsthesia of hands and feet.

Condition on 31st December, 1922.—Thickening of face and ears decreased, patches on body disappeared. Still some anæsthesia of feet. No contraction of fingers.

PHOTOGRAPH NOT REPRODUCED.

Condition on 31st December, 1923.—Case shows no further improvement, stationary for past 6 months, is very irregular in appearing for treatment. Small reddish raised patches have appeared on face and back. Smears show lepra bacilli.

Treatment given:—

1922	...	...	36 intramuscular injections E. C. C. O.
1923	...	...	16 intramuscular injections E. C. C. O.
1923	...	...	10 intravenous injections Sodium Morrhuate.
1923	...	...	4 intramuscular injections Thymol and Ol. Morrhuae.

KUNJINAYAR, Malayalam, admitted 17th June, 1922.

Condition on admission.—Both ears very thickened, nodular thickening of skin of forehead. Anæsthesia of both hands and feet. Would not have his photograph taken previously, as he had made a vow, not to cut his hair, or shave till he was cured.

Condition on 31st December, 1923.—Ears thickening decreased slightly, nodular thickening of forehead disappeared, sensation returning.

PHOTOGRAPH NOT REPRODUCED.

Treatment given:—

1922	...	41 intramuscular injections E. C. C. O.
1923	...	17 intravenous injections Sodium Morrhuate.
1923	...	11 intramuscular injections Thymol et Ol. Morrhuae.

States he feels improved after Thymol treatment.

EBERT, Eurasian, 21 years of age, duration of disease 2 years, admitted on 30th January, 1923.

PHOTOGRAPH NOT REPRODUCED.

Condition on admission.—Both ears very thickened. Tubercles on forehead, face, lips, chin, nostrils. Area of raised roseolar patches on left cheek. Numbness hands and feet. Ulna nerves very thickened.

Treatment given:—

PHOTOGRAPH NOT REPRODUCED.

Thirty-two intravenous infections *Sodium Hydnocarpate et Soyate*. No improvement or even a reaction. Forty intravenous injections *Sodium Morrhuate*. Tubercles gradually subsiding, then came a stationary period, put on *E. C. C. O.* Sixteen intramuscular injections, some slight improvement. Nine intramuscular injections *Thymol et Ol. Morrhuae* 10 per cent solution. Great pain complained of, then put on *Thymol et Ol. Morrhuae* 20 per cent Solution, 19 injections. Rapid

PHOTOGRAPH NOT REPRODUCED.

clearing up of lesions, as can be easily seen in photograph. Ears still somewhat thickened.

E. GOLDIE, Eurasian, 16 years of age, admitted 24th June, 1921.

PHOTOGRAPH NOT REPRODUCED.

Condition on admission.—Both ears very thickened. Raised leprous patches on cheeks and forehead, fingers thickened and glazed. Ulna nerves thickened. Some loss of sensation in fingers.

Treatment given:—

1921 ... 32 intravenous injections *Sodium Hydnocarpate et Soyate*. No improvement.

PHOTOGRAPH NOT REPRODUCED.

1922 ... 12 intravenous injections *Sodium Morrhuate*.

1922 ... 49 intramuscular injections
E. C. C. O. Some improvement on this.

PHOTOGRAPH NOT REPRODUCED.

1923 ... 46 intramuscular injections
E. C. C. O.

PHOTOGRAPH NOT REPRODUCED.

Some further improvement. Reacting very strongly to 3 c.c. doses. Then set in a stationary period. Put on *Thymol et Morrhuae* 10 per cent. Nine injections intramuscularly complained of great pain. *Thymol et Ol. Morrhuae* 20 per cent solution 19 injections. Ears much less thickened, raised patches on cheeks subsiding, forehead normal sensation returning to fingers.

SANASEE, Telegu, 38 years of age, admitted on 17th August, 1922, duration of disease 1 year.

PHOTOGRAPH NOT REPRODUCED.

Condition on admission.—Both ears enormously thickened, tubercles under right lower eye-lid, raised thickened patches on cheeks, large raised thickened area, skin of forehead.

Treatment given was:—

1922 ... 19 intramuscular injections E. C. C. O.

PHOTOGRAPH NOT REPRODUCED.

1922 ... 17 infiltrated into patches with great improvement, patches subsiding.

1923 ... 46 intramuscular injections E. C. C. O.

PHOTOGRAPH NOT REPRODUCED.

1923 ... 37 infiltrated into patches.

Thickened patches rapidly subsiding great improvement. Tubercle under right lower eye-lid hardly perceptible patches forehead level with surrounding skin only lighter coloured.

The following photographs illustrate some of the improving cases:—

RAMAN.

PHOTOGRAPH NOT REPRODUCED.

E. C. C. O.	...	...	34
Sodium Morrhuate	...	...	26
Thymol et Moogrol	...	...	1

TONG TUCK.

PHOTOGRAPH NOT REPRODUCED.

Thymol et Moogrol ... 19

LAM SING.

PHOTOGRAPH NOT REPRODUCED.

Sodium Hydnocarpate et So-	...	...	38
yate			
Sodium Morrhuate	...	...	17
E. C. C. O.	...	...	19
Icthyol et Ol. Morrhue	...	...	12
Improving.			

RAMALINGAM.

PHOTOGRAPH NOT REPRODUCED.

Previously under treatment in
Singapore.

Thymol et Moogrol ... 11

LIM TAI QUEE.

PHOTOGRAPH NOT REPRODUCED.

Sodium Hydnocarpate et	
Soyate	... 16
Thymol et Ol. Morrhuze	18 10%

ERULLAPEN.

Duration $2\frac{1}{2}$ years. Injection
Book No. 133.

PHOTOGRAPH NOT REPRODUCED.

Sodium Hydnocarpate et	
Soyate	... 30
Moogrol	... 12
E. C. C. O.	... 36
Thymol et Moogrol	... 13

LEE CHONG.

PHOTOGRAPH NOT REPRODUCED.

E. C. C. O.	...	...	48 In- jections.
Thymol et Moogrol	...	...	17

F. BELL.

PHOTOGRAPH NOT REPRODUCED.

Sodium Hydnocarpate et So- yate	...	...	22
Sodium Morrhuate	...	...	16
E. C. C. O.	...	...	14
Moogrol et Thymol	...	...	16

PHOTOGRAPH NOT REPRODUCED.

LEE EE SEE.

PHOTOGRAPH NOT REPRODUCED.

Sodium Hydnocarpate et Soyate ...	...	30
E. C. C. O. ...	...	28
Thymol et Oleum Mor- rhuce ...	...	12 20%
Moogrol et Thymol ...	...	16
Improving.		

BASERAH.

PHOTOGRAPH NOT REPRODUCED.

Moogrol et Thymol ...	...	17
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MOK NAM.

PHOTOGRAPH NOT REPRODUCED

Moogrol ...	...	17
E. C. C. O. ...	...	22
Sodium Morrhuate ...	...	32
E. C. C. O. injections ...	...	14
Icthyol et Oleum Mor- rhuce ...	...	17

APPENDIX J.

INVESTIGATIONS CARRIED OUT IN PENANG.

Early in the year Dr. J. C. TULL continued his work on the treatment of Ankylostomiasis. The Hon'ble Dr. A. L. Hoops, Principal Civil Medical Officer, Straits Settlements, during his visit in November, expressed a wish that treatment by carbon tetrachloride should be continued. It is being given an extended trial in combination with preliminary salines, note being taken of the kind of hook-worms expelled. The results have been very good but the majority of cases treated during the last two months have been light infections.

An investigation into the treatment of Syphilis and Yaws by bismuth sodium potassium tartrate is being carried out. The results are encouraging, not only clinically, but from the manner in which the positivity of the Wassermann Reaction decreased during treatment. The number of cases is yet too small for the publication of results, but it is hoped to submit a report in a few months' time. For the routine treatment of Syphilis novarsenobenzol and intramuscular mercury are employed.

Dr. J. PORTELLI has been working in the Malarial Ward on the efficiency of alkaline quinine treatment which is yielding very satisfactory results. Test cases have been submitted to weekly blood counts.

Mayers reagent has been used throughout the hospital to ensure that quinine has been given whenever cases of malaria do not re-act to the administration of quinine.

An investigation has also been proceeding on the Dysentery cases. Thorough cystological examination of the blood and stools has been carried out, and sigmoidoscopy has been performed on the more chronic cases whenever time permitted.

APPENDIX K.

(A NOTE ON THE LEVADITI TEST FOR SYPHILIS BY A. N. KINGSBURY, M.B., B.S.,

Acting Government Pathologist, Penang

AND

Assistant Surgeon J. R. JACOB, L.M.S.).

The Levaditi test for Syphilis is intermediate between the Wassermann Reaction (W. R.) and the Sachs—Georgi Flocculation Reaction from the point of view of simplicity of technique.

The Wassermann Reaction entails the preparation of antigen, complement, amboceptor plus red corpuscles for each batch of tests, and before the test proper, estimation of the complement content of the guinea pig's serum. Standardisation of the amboceptor in the prepared rabbit's serum is also necessary at intervals.

The Sachs—Georgi test requires the preparation of antigen only while for the Levaditi test antigen and sheep's corpuscles are necessary.

In theory however the Levaditi test is similar to the W. R. Use is made of the complement normally present in human serum to replace the complement supplied by the guinea pig's serum in the W. R. As regards the amboceptor, the serum of many animals has the power of hæmolysing the red corpuscles of other species. The verne test for syphilis, for example, depends on the natural amboceptor present in pig's serum for hæmolysing sheep's cells, and human serum also contains a hæmolysing for sheep's cells. This property of human serum is employed in the Levaditi test to replace the prepared amboceptor used in the W. R.

The present investigation was undertaken to determine the accuracy of the Levaditi test compared with W. R. For the former Hecht's modification of the original technique was used and the W. Rs. were done according to the technique of Fildes and McIntosh.

The cases were of Chinese, Tamil and Malay nationality. All specimens were submitted to the laboratory for Wassermann Reaction on account of suggestive clinical signs or history.

Table I embodies the results obtained in 200 cases.

Reference to it will show that there is absolute agreement between the tests in 104 cases (52 per cent) and absolute disagreement in 27 cases (13·5 per cent).

"Serum inhibitory" is reported where no hæmolysis occurred in the control (no antigen) tube. There were 10 sera giving this result in the W. R. compared with 51 in the Levaditi test. Some of the sera were sent to the laboratory from outstations and a few were found slightly contaminated on arrival. This fact accounts for the W. R. results, but another explanation must be sought for the other 41 sera (20·5 per cent) which gave this result with the Levaditi test.

The complement content of guinea pig serum varies in different animals, and it appeared probable that a similar variation might occur in human sera. It was therefore decided to estimate the complement in a number of human cases. As inconstancy of amboceptor content might have introduced a further fallacy another experiment was performed to determine if this too, was a variable factor.

For complement estimation a series of eight test tubes was employed for each serum. The quantities of serum and corpuscles are shown on Table II. The sera were removed from the clot immediately after separation had occurred and the tests were carried out within three hours of the taking of blood. A 5 per cent suspension of sheep corpuscles was used sensitised with 8 M. H. Ds of amboceptor of to obviate the possibility of an absence of natural amboceptor in any sample.

Table III shows the results obtained from 42 specimens. It also includes the nationality of the cases and the disease for which each was primarily admitted to hospital. The complement content of human serum will be seen to be very variably. In some cases 0·0125 cc. of serum is sufficient to cause the lysis of 0·1 cc. of corpuscles suspension while in others 0·05 cc. is insufficient to bring about even a trace of hæmolysis. Of the total of 42 sera 8 (19 per cent) show no hæmolysis in the last tube. It is noteworthy that this percentage nearly agrees with the percentage of "Serum inhibitory" cases in the Levaditi series. In 12 cases there was less than a hæmolytic dose of complement in 0·05 cc. of serum (0·2 cc. of a 1 in 4 dilution) so that in the Levaditi test, where 0·1 cc. of serum is employed, the amount of complement available would be considerably less than 2 M. H. D. in all these instances.

No connection can be traced between the quantity of complement per unit volume of serum and the nationality, age or disease of the cases.

Amboceptor was estimated by heating the sera to 56° for half-an-hour, using an unsensitised 5 per cent corpuscular suspension and adding 5 M. H. Ms. of guinea pig's complement to ensure the same quantity in each tube. Table IV shows the quantities employed. The estimation was carried out for 30 sera, but for reasons of brevity a table showing the results is omitted.

Great variation was however found to occur. Some sera contained one M. H. D. of amboceptor in 0·025 cc. while 0·1 cc. of others was insufficient to bring about lyses.

COMMENTARY.

The minimum quantity of serum which was found necessary to cause lysis of 0·1 cc. of 5 per cent suspension of sensitised sheep cells was 0·0125 cc. so that as 0·1 cc. of serum is employed in the Levaditi some test sera contain 8 M. H. Ds. of complement, others contain smaller amounts and some none at all. The serum from a case with no syphilitic taint may contain only 1 M. H. D. of complement. In this instance the control tube would show

complete hæmolysis, but the antegen tube, owing to the absorption of some of the complement by the antigen would not. The result would be read as positive although the Wassermann result would certainly be negative.

Again some sera will contain as much as 8 M. H. Ds. of complement. If the Wassermann positive substance present in such a case be sufficient to fix $2\frac{1}{2}$ or 3 M. H. Ds. of complement only (the usual standards for the W. R.); then a negative reading must result. Here the Wassermann Reaction would again give a correct interpretation of the condition.

The variation in amboceptor power is less important for insufficiency will be immediately obvious from the control tube and the positive result in the antigen tube discounted accordingly.

Complement inconstancy in human serum thus robs the Levaditi test of value for routine purposes. Of a total of 84 positive Levaditi results only 4 were W. R. negative, but of a total of 39 Levaditi negative sera no less than 24 Wassermann positive.

A method by which the accuracy of the Levaditi test could be ensured would be by a preliminary estimation of the complement in each specimen, but such a technique would render the test more laborious than the Wassermann Reaction and further no reading could be obtained in about 20 per cent of sera owing to the absence of complement, or amboceptor or both.

SUMMARY.

Complement variation in different specimens of human sera renders the results of the Levaditi test inaccurate and misleading.

The complement content of the quantity of serum in relation to the quantity of corpuscular suspension employed in this test may vary from 0 to 8 M. H. Ds.

The natural amboceptor in human serum for sheeps cells is also a variable quantity.

TABLE I.
Wassermann.

—				Positive.	Negative.	Serum inhibitory.	Partial positive.
Levaditi Test.	Positive	...	...	79	4	1	0
	Negative	...	...	23	15	0	1
	Serum Inhibitory	...	...	51	3	10	0
	Negative Trace	...	...	4	0	0	0
	Partial Positive	...	...	1	0	1	0
	Positive Incomplete	...	...	6	1	0	0

Explanatory notes:—

Negative trace = 75% Hæmolysis.

Partial Positive = 50% "

Positive Incomplete = 25% "

S. I. = Incomplete Hæmolysis in control (no antigen) tube.

TABLE II.
Estimation of Complement in Human Serum.

No. of Tubes.	1	2	3	4	5	6	7	8
Serum (1MH dilution, unheated) ...	'025	'5	'075	'1	'125	'15	'175	'2
Saline ...	'225	'2	'175	'15	'125	'1	'075	'05
Corpuscles 5 per cent suspension ...	'1	'1	'1	'1	'1	'1	'1	'1

TABLE III.
Complement in Human Serum.

No.	Nation.	Disease.	1	2	3	4	5	6	7	8
1	Tamil	Bronchitis ...	3	1	1	2	3	4	4	4
2	Tamil	Chancre ...	2	1	0	0	0	0	0	0
3	Tamil	Tertrary Syph.	3	1	0	0	0	0	0	0
4	Chinese	Chancre ...	3	1	0	0	0	0	0	0
5	Chinese	Ascariasis ...	4	4	4	4	4	4	2	0
6	Chinese	Carbuncle ...	4	4	4	2	0	0	0	0
7	Chinese	Ulcers ...	4	4	3	2	0	0	0	0
8	Tamil	Dysentery ...	4	4	4	4	4	4	4	0
9	Chinese	Chancre ...	4	4	3	2	1	0	0	0
10	Tamil	Gonorrhœa ...	4	4	3	2	0	0	0	4
11	Tamil	Dysentery ...	3	2	1	0	0	0	0	0
12	Chinese	Chancre ...	3	1	0	0	0	0	0	0
13	Chinese	Ulcers ...	4	3	0	0	0	0	0	0
14	Chinese	Ulcers ...	4	3	0	0	0	0	0	0
15	Chinese	Sec. Syphilis ...	3	0	0	0	0	0	0	0
16	Chinese	Abscess ...	4	2	0	0	0	0	0	0
17	Chinese	Sec. Syphilis ...	4	4	3	1	0	0	0	0
18	Malay	Ulcers ...	4	2	0	0	0	0	0	0
19	Tamil	Bronchiti ...	4	4	2	0	0	0	0	0
20	Tamil	Athriti ...	4	4	3	1	0	0	0	0
21	Chinese	Ulcers ...	4	4	4	4	4	4	4	4
22	Chinese	Sec. Syphilis ...	4	3	2	0	0	0	0	0
23	Tamil	Sec. Syphilis ...	4	4	4	4	4	4	4	4
24	Tamil	Sec. Syphilis ...	4	4	4	4	4	4	4	4
25	Tamil	Bubonocèle ...	4	4	4	4	4	4	4	4
26	Tamil	Arthritis ...	3	2	1	0	0	0	0	0
27	Tamil	Chancre ...	4	3	2	1	0	0	0	0
28	Chinese	Dysentery ...	4	4	4	4	4	4	4	4
29	Chinese	Chancre ...	4	3	3	2	1	0	0	0
30	Chinese	Ulcers ...	4	4	3	2	0	0	0	0
31	Chinese	Tertrary Syphilis ...	4	4	4	4	3	2	0	0
32	Tamil	Endocarditis ...	4	4	4	3	0	0	0	0
33	Tamese	Bubo ...	4	4	4	4	4	4	4	4
34	Chinese	Ulcers ...	4	4	4	4	4	3	3	3
35	Chinese	Ulcers ...	4	4	4	3	3	2	1	0
36	Tamil	Ankylostomiasis ...	4	4	4	4	3	3	2	0
37	Tamil	S. T. Malaria ...	4	4	4	4	4	3	3	2
38	Tamil	Phthisis ...	4	2	0	0	0	0	0	0
39	Chinese	Sec. Syphilis ...	4	4	4	4	4	4	3	3
40	Chinese	Sec. Syphilis ...	4	4	2	0	0	0	0	0
41	Tamil	Chancre ...	4	4	2	0	0	0	0	0
42	Tamil	Sec. Syphilis ...	4	4	4	4	3	3	2	2

Explanatory notes:—0=Complete Hæmolysis. 2=50% Hæmolysis. 4=Complete inhibition of Hæmolysis.
1=75% Hæmolysis. 3=25% ..

TABLE IV.

Estimation of Amboceptor in Human Serum.

Tubes.	1	2	3	4	5	6	7	8
Serum (Anactwated at 56°c) ...	'025	'05	'075	'1	'125	'15	'175	'2
Complement (5 MHD)...	'05	'05	'05	'05	'05	'05	'05	'05
Saline ...	'175	'15	'125	'1	'05	'05	'025	'0
Corpuscles 5 per cent suspension ...	'1	'1	'1	'1	'1	'1	'1	'1

APPENDIX L.

(A CASE OF CUTANEOUS GONOCOCCAL INFECTION BY A. N. KINGSBURY, M.B., B.S.,
Acting Government Pathologist).

A medical man consulted the writer recently on account of a curious dermatitis of the elbow. There had been a slight abrasion of the skin over the olecranon caused by a fall while playing football and a week later the lesion became acutely inflamed and very painful.

On examination the abrasion was found to have progressed to a shallow ulcer $2\frac{1}{2}$ cms. in length by about 1 cm. in width. The base was formed by a lemon coloured slough and the edge was surrounded by a hyperæmic band of skin some 2 mm. in width. Encircling the ulcer at a distance of about 3 cms. were a number of bullæ, the smallest of which was 1 cm. in diameter and the largest $2\frac{1}{2}$ cms. in length by 1 cm. broad.

The axillary glands were enlarged and tender. Clear serous fluid was obtained by the aspiration of one of the bullæ. Films were stained by Gram's method, and a few pus cells were seen with intracellular gram negative diplococci morphologically resembling gonococci. A few gram positive cocci were also present.

Cultures on blood agar grew *S. aureus* and a gram negative diplococcus. Colonies of the latter developed the scalloped edge of gonococcal colonies after 3 days incubation.

There was no history of gonorrhoea so that a metastatic explanation of the infection was untenable, but in view of the rarity of a primary gonococcal cutaneous infection, formentation tests were undertaken to establish definitely the identity of the organism. Glucose was fermented, but maltose and saccharose were not. No growth was obtained on broth agar and from these criteria it was concluded that the organism was in fact the gonococcus.

Enquiries as to the probable source of infection elicited the fact that, three days before the elbow became painful, the patient had operated on a femal for elephantiasis. As the time of operation there was a vaginal discharge, but subsequent examination failed to detect any gonococci.

The course of the cutaneous lesion was uneventful. Not formentations were employed for 24 hours and then protargol was applied. In a fortnight healing had occurred.

SUMMARY.

Resistance to gonococcal infection of sites other than the conjunctivæ and the urogenital tract appears to increase somewhat from infancy onwards. The infant is particularly susceptible not only to conjunctivæ infection, but stomatitis and rhinitis have not infrequently been described. The stomatitis

is characterised by tumefaction of the buccal mucosa. If dentition has occurred thickening of the gingival margin is seen sometimes even progressing to ulcer formation with a green in grey sloughing base.

In female children small epidemics of gonorrhœal vulvovaginitis and in the male of urethritis, are not infrequent. They result from careless supervision of the children permitting the use of infected towels and other articles. A feature of these types of infection is that the resulting discharge is not of the frankly purulent nature seen in the adult, but is usually more mucoid in character.

The gonococcus has been held responsible for various erosions of the genitalia in the adult and even whitlows and subcutaneous abscess particularly about the knees and elbow—have been ascribed to metastatic infection. Two types of generalised dermatitis have also been described following urogenital infection. The first includes purpuric, papular, vesicular, bullous, and pustular lesions. Gonococci have been found from time to time in smears and sections of these lesions. A scarlatiniform condition is also included by the other writers, but as the balsams were then commonly used in treatment it is possible that this was in fact a drug rash.

The second type is the hyperkeritosis which involves the palmer surface of the hands and planter surface of the feet, occasionally spreading to the trunk and face. The process commences as papules with hyperkeritosis. Histologically there is hypertrophy of the papillæ with leucocytic infiltration around them. Gonococci have been found in these lesions.

But excluding conjunctival infections, the writer has seen only one other case of an extragenital lesion man adult due to the gonococcus, with no urogenital infection. This was a subcutaneous abscess near the nipple in a woman about 30 years of age.

The rarity of primary skin infection can only be explained by a high dermal resistance, when it is recalled that the gonococcus is viable for two to eight hours outside the body.

APPENDIX M.

LUNATIC ASYLUM, SINGAPORE.

REPORT BY E. R. STONE, M.B., B.Ch., MEDICAL SUPERINTENDENT.

1. There remained on 31st December, 1922, three hundred and sixty-five males and eighty-four females.

Two hundred and eighty-three males and seventy-two females were admitted.

The total treated was eight hundred and four.

2. Of the admissions seventeen males and six females had previously been under treatment in this Asylum.

3. Of the total treated eighty-eight males and eighteen females were discharged as recovered: thirteen males and ten females as relieved; five males and fifty three females as not improved; eleven males and one female absconded and eighty-three males and eleven females died.

4. Of the five males and fifty-three females shown as not improved fifty females were transferred to Tanjong Rambutan, the others were handed over to the care of their relations.

5. There remained on the 31st December, 1923, four hundred and forty-eight males and sixty-three females.

6. The average daily numbers were four hundred and twenty-one males and seventy-four females.

7. The maximum and minimum daily numbers were respectively five hundred and forty-six and four hundred and forty-eight.

8. The Nationalities of the admissions are:—

			Males.	Females.
			—	—
British	...	...	6	1
Other Europeans	...	...	1	2
Eurasians	...	...	4	6
Chinese	...	...	191	48
Tamils	...	...	45	6
Malays and Allied Races	...	...	21	7
Others	...	...	15	2
			—	—
			283	72

9. The physical condition of those admitted was:—

			Males.	Females.
			—	—
Good	...	...	86	15
Fair	...	...	116	38
Impaired	...	...	58	9
Greatly impaired	...	...	23	10

10. Twenty-two patients died within a month of their admissions.

11. As regards the causes of mental disorder, syphilis was a most evident casual factor: alcohol, malaria, and prolonged mental stress were also well defined causes. A history of insane heredity was obtained in very few cases only, though no doubt present in a large proportion. Previous attacks of insanity had pre-disposed to further attacks in thirty-seven instances.

12. The recovery rate for the year was 29.85 per cent.

13. *Criminal Population.*—There remained on the 31st December, 1922, twenty-six Lunatic Criminals and nineteen Criminal Lunatics. There were admitted during the year twenty-four of the former class and eight of the latter class.

Of the seventy-seven criminals treated the sentence of four expired, five recovered and were returned to Prison, one absconded, and ten died. Four female criminals were transferred to Tanjong Rambutan.

There remained on 31st December, 1923, thirty-four Lunatic Criminals and nineteen Criminal Lunatics: two of the former were females.

Deaths.—The death-rate based on the average daily number resident was 18.94 per cent; on the total treated it was 11.69 per cent. Bacillary dysentery, general paralysis of the insane, and tuberculosis were the chief causes of mortality claiming respectively 31.91 per cent, 22.34 per cent and 17.02 per cent of the total number of deaths. One case of suicide by hanging occurred.

Industries.—Seven thousand four hundred and forty-eight yards of cotton cloth were woven by the male patients from which clothing and bedding was made for the Asylum inmates.

From canvas purchased from the Crown Agents forty-two strong rugs and thirty combination suits were made.

Revenue.—The revenue received from paying patients amounted to \$13,691.40.

The kitchen garden furnished 36,864 lbs. of vegetables, 78 bunches of bananas and also a quantity of papayas and sugar-cane, valued at \$1,011.35.

APPENDIX N.

GOVERNMENT ANALYSTS DEPARTMENT.

I.—SINGAPORE.

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

The following table shows the Revenue and Expenditure for the year 1923, and for comparison, the Revenue collected during the preceding year:—

Revenue.	1922.	1923	Expenditure, 1923.
	\$ c.	\$ c.	\$ c.
<i>Fees of Office.</i>			
Petroleum Inspection ...	3,245 00	3,390 00	Personal Emoluments 30,019 96
Miscellaneous ...	5,267 50	7,918 50	Stores from England 876 32
Total ...	8,512 50	11,308 50	Stores (special) ... 1,342 95
By Sale of Pyridine ...	2,019 60	2,585 60	Miscellaneous ... 617 36
			Transport ... 305 82
			Total ... 33,162 41

PETROLEUM.

(a) *Kerosene.*

The following table gives a comparison between the quantities tested on importation into the Island of Singapore during the years 1922 and 1923:—

Description of Oil.		1922.			1923.		
		Number of Consignments.	Tins.	Tons.	Number of Consignments.	Tins.	Tons.
<i>Case Oil.</i>							
American Oil.	Devoc's ...	6	35,894	...	4	20,000	...
	S. Arrow ...	19	91,920	...	15	81,420	...
	Tiger ...	15	27,509	...	12	11,784	...
	Comet ...	1	20	...	...	...	...
	White Rose ...	1	20	...	1	10	...
	Elephant ...	1	570	...	...	...	...
	Eagle ...	...	...	...	7	8,000	...
Langkat Oil.	Nonpareil ...	...	...	...	1	10	...
	Crown ...	85	359,358	...	85	381,332	...
	Dragon ...	26	35,257	...	41	29,794	...
	Cross ...	30	25,048	...	36	21,067	...
	Lamp Glass ...	2	2,000	...	...	...	...
	Fish ...	20	15,934	...	30	18,900	...
	Cup ...	...	...	...	1	2,000	...
Total	Clock ...	...	...	...	1	18,000	...
	Total ...	206	593,530	...	234	592,299	...

Sixteen consignments for Malacca, Penang and Hongkong were tested for their flash-points.

(b) *Mineral Turpene and Drialene.*

One thousand three hundred and forty-five tins of Turpene were imported into Singapore as against 600 tins each of Turpene and Drialene in 1922.

(c) *Other Petroleum Products.*

Thirty-eight samples of liquid fuel were sent in for special tests.

(d) *Testing Vessels for Dangerous Petroleum.*

Fifty-eight vessels as against 30 in 1922 were tested for inflammable vapour by means of Redwood's Standard Instrument, either before being allowed to enter Port-limits under Rule 23, made under Ordinance No. 109 (Petroleum) 1908, or to enter Dry-dock under By-law 77 made under Ordinance No. 130 (Ports).

EXPLOSIVES.

Ten consignments were tested on importation into Singapore in accordance with the Rules under Ordinance No. 136 (Arms and Explosives). All passed the prescribed tests.

The following table gives the detail 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.		
1921	...	9	698	3,140	1,089	...	4,927
1922	...	11	1,810	2,070	1,300	...	5,180
1923	...		1,400	2,150	1,800	...	5,350

Two cases of Cordite and 72 cases of Detonators were also imported.

Three sets of exhibits comprising 17 unexploded bombs were sent in by the Police and reported upon.

MONOPOLIES DEPARTMENT.

(a) *Ordinance No. 117 (Chandu Revenue).*

Exhibits in 80 cases from Singapore, 19 from Johore and 5 from Malacca instituted under this Ordinance were examined and certificates issued.

In addition 12 lots of special samples were examined and reported upon.

The number of check-samples of Government chandu received for assay from the Opium Factory amounted to 71.

Five thousand and twenty-two packets of chandu gross weighing 21,087 tahils were weighed and valued as against 4,500 packets and 19,783 tahils in 1922. Morphine assays were made in 36 cases.

Opium and chandu seizures were regularly weighed and valued at the Factory necessitating 57 assays for morphine.

(b) *Ordinance No. 118 (Liquor Revenue).*(a) *Bhang.*

One exhibit supposed to contain bhang proved to be a harmless Chinese medicine.

(b) *Intoxicating Liquors.*

The spirit strengths of 3,522 samples of liquors from Singapore and 441 samples from Malacca were determined for assessment of duty.

In addition to the above 38 samples of brandy and 12 of other descriptions of liquors were fully examined with a view to their correct classification of duty purposes.

Two samples of toddy were received from the A. S. G. M., Malacca.

Thirty-seven sets of exhibits comprising 91 samples of illicit liquors were sent in and reported upon.

(c) *Methylated Spirit.*

Consignments of arrack were methylated for industrial purposes on 43 occasions. They consisted of 607 large drums, 10 small ones and 25-4 gallon tins containing in all about 88,048 gallons as against 71,262 gallons methylated in 1922.

COUNTERFEIT COINS.

Fifteen sets of exhibits from Singapore, 5 from Malacca and 4 from Johore were sent in by the Police. They included 5,778 coins, principally 10-cent pieces, and the usual moulds and other apparatus and materials used in their manufacture.

Ten Prisoners were examined for the presence of stains or other mark on their clothing or persons which might have connected them with the manufacture of counterfeit coins.

TOXICOLOGY.

Twenty-eight specimens of stomach contents, washing, etc., were received from Singapore and 1 specimen each from Malacca and Johore.

Opium or some extract of the same was detected in 6 cases, veronal in 3 specimens from one case, cyanide in 2 cases and morphine, alcohol, exalic acid and chloroform with arsenic in 1 case each.

No poison was detected in 2 specimens sent in by the Government Veterinary Surgeon.

POISONS.

Thirty-four samples were sent in for examination and report.

CHEMICALS AND DRUGS.

Twenty-one samples of various chemicals and drugs were sent in for analysis.

Twenty-three samples were sent in under the Deleterious Drugs Ordinance.

METALS AND MINERALS.

Twenty-four samples were received for identification and assay.

Four ingots sold as gold proved to be composed of brass.

WATER.

Forty-five samples were sent in for analyses mainly as their suitability for drinking purposes.

MILK.

Thirty-six samples of fresh milk and 6 of tinned milk were analysed and reported upon.

MISCELLANEOUS.

Seventy-nine other samples of a miscellaneous nature were examined and reported upon.

These included Test meals, commercial products, food stuff, defaced coins, urine, forged rubber coupons, blinding powder, etc.

II.—PENANG.

REPORT BY J. W. HADDON, B.SC., F.I.C., *Acting Deputy Analyst.*

Details of Revenue and Expenditure for the Department for 1923 are given in the following table together with the Revenue for 1922:—

<i>Revenue.</i>	<i>1922.</i>	<i>1923.</i>	<i>Expenditure.</i>	<i>1923.</i>
—	\$	\$	—	\$
Petroleum Inspection Fees ...	1,970 00	1,460 00	Personal Emoluments	10,375 82
Miscellaneous ...	1,161 50	1,514 50	Stores ...	316 84
Certificate for Export of Petroleum Fees ..	160 50	145 50	Purchase of Apparatus	1,343 45
			Miscellaneous ...	193 86
			Transport and Travel- ling Allowance ...	226 53
	<u>3,294 00</u>	<u>3,120 00</u>		<u>12,457 50</u>

The fall in Petroleum Inspection Fees is due to a larger proportion of the oil having been imported in bulk necessitating fewer tests.

Five hundred and forty-seven reports on general analytical work, and 36 reports on the testing of Petroleum were issued.

PETROLEUM.

The following table shows the amount of Kerosene and Heavy Petroleum imported and tested during the year. All the samples passed the Standard tests.

A. KEROSENE.

	<i>Number of Consign- ments.</i>	<i>Tons.</i>	<i>Gallons.</i>
—	—	—	—
East Indian Bulk Oil ...	11	11,011'6381	—
East Indian Oil in Tins ...	4	—	3,600
American Bulk Oil ...	—	—	—
American Oil in Tins ...	5	—	639,984
Total ...	<u>20</u>	<u>11,011'6381</u>	<u>643,584</u>

B. HEAVY PETROLEUM.

	<i>Number of Consign- ments.</i>	<i>Tons.</i>	<i>Gallons.</i>
—	—	—	—
East Indian in Bulk ...	9	9,592'31	—
East Indian in Drums ...	9	—	58,500
Total ...	<u>18</u>	<u>9,592'31</u>	<u>58,500</u>

LIQUORS REVENUE ORDINANCE.

One thousand three hundred and eighty-seven samples of imported or locally manufactured liquors were examined for their alcoholic strength. Of these samples 473 were done for the Kedah Government and the remainder for the Monopolies Department.

A complete analysis was done on 25 samples of Brandy and one of Whisky.

Of 20 samples of Toddy examined 9 were found to be old and excessively acid.

Two hundred and twenty-six exhibits in cases brought by the Police and the Monopolies Department for various breaches of the Liquors Revenue Ordinance were examined and reported on: 67 of these exhibits consisted of Bhang and the majority of the remainder of Illicit Samsoo.

CHANDU REVENUE ORDINANCE.

One hundred and thirty-three exhibits, usually consisting of Opium, Chandu or Chandu Dross, in cases brought by the Monopolies Department under this Ordinance were examined and reported on. The whole of the Chandu Dross bought by the Monopolies Department and the Kedah Government from Chandu shop-keepers was examined before purchases.

MILK.

Twenty-eight samples of fresh milk were analysed: of these nine, including seven purchased by the Municipal Health Department from licensed milk-sellers, had been adulterated by the addition of water. One sample of tinned condensed milk was examined and found to comply with the Regulations under the Sale of Foods and Drugs Ordinance.

WATER.

Fifteen samples of drinking water were examined of which 6 were found to be unsatisfactory.

In addition 2 samples were examined as to their suitability for special commercial purposes.

COUNTERFEIT COINS.

Exhibits in nine cases of counterfeiting coin were examined. They comprised the usual moulds, acids, base metal, etc., and 5,498 counterfeit coins: the majority of the coins were excellent counterfeits being minted from brass and coated with silver.

EXPLOSIVES.

Three consignments of explosives amounting altogether to 52,500 lbs. were imported during the year. All passed the prescribed tests.

TOXICOLOGY.

Specimens of human or animal viscera were examined in twelve cases. The poisons found were Opium in two cases and Caustic Soda, Alcohol and Datura in one case each. A sample of powder which had been mixed with a person's food consisted essentially of White Arsenic.

MISCELLANEOUS.

Eighty-eight samples of various substances not falling under any of the above headings were examined and reported on. Included amongst them were blood stained exhibits sent in by the Police, samples of Rubber Latex (for estimation of dry rubber content), oil cake, coconut oil, sugar, flour, quinine, bleaching powder, guano, pepper and margarine.

Several consignments of Rubber were examined prior to export.

STAFF.

Mr. J. C. COWAP, Deputy Government Analyst, was in charge till he proceeded on long leave on April 13, 1923. During the remainder of the year I acted for him.

APPENDIX O.

PATHOLOGICAL DEPARTMENT.

I.—SINGAPORE.

REPORT BY J. C. TULL, M.D., M.R.C.P., *Acting Government Pathologist.*
Laboratory, Sepoy Lines.

Total number of specimens examined	...	3,596
Widal reaction for specimens "Enterica"	...	399
Typhoid fever	positive reaction	37
partially	positive "	53
	negative "	302
Para-typhoid	positive "	...
	negative "	7
Agglutination reaction for bacillary dysentery	...	4
	positive reaction	3
	negative "	1
Malaria	...	63
parasites present	...	7
" not observed	...	56
Syphilis	Wassermann reaction	2,437
	contaminated serum	1
	positive reaction— — —	1,051
	" " — —	306
	" " —	151
	negative "	928
Diphtheria	throat swabs and cultures	32
	bacillus diphtherial present	12
	" " absent	20
Gonococcus	...	33
	Gonococcus present	8
	" absent	25
Sputum for bacillus tuberculosis	...	82
	bacillus present	26
	" absent	56
Leprosy	...	13
	bacillus present	2
	" absent	11
Meningococcus	...	3
	diplococcus intracellularis	...
	meningitidis present	1
	diplococcus intracellularis	...
	meningitidis absent	2
Fæces	...	180
	Entamæba histolytica present	2
Cysts of	" " "	2
	bacillus dysentery isolated	3
	Ova observed	62
	negative result	111
Urine	...	129
	albumin, casts, etc., present	55
	organisms, bacillus Coli, etc., present	74
Varied	...	220
including vaccines prepared	...	15
blood cultures for organisms	...	13
histological sections	...	128
examination of pus, etc....	...	54
treponema pallidum (negative)	...	5
differential blood counts	...	3
slides for presence of B. pestis	...	2

Staff.—Dr. G. A. FINLAYSON proceeded on six months leave in September and was relieved by Dr. J. C. TULL, Government Pathologist, Penang.

CENTRAL MORTUARY, SEPOY LINES.

Total number of Autopsies 209

Return showing the immediate cause of Death.

Beri-beri	6	Heat Stroke	1
Plague—Bubonic	5	Tetanus	1
Lobar Pneumonia	9	Diseases of the Respiratory	
Malaria	12	system	16
Mania Acute	1	Diseases of the Circulatory	
Neoplasm	4	system	23
Ankylostomiasis	1	Diseases of the Alimentary	
Diseases of the Nervous		system	6
System	4	Diseases of the Genitouri-	
Tuberculosis	13	nary system	6
Enteric Fever	3	Accidents, etc.	70
Dysentery	3	Poisoning	7
Suppurative Peritonitis ...	10	Convulsions	2
Other septic conditions ...	1	Too decomposed for autopsy	5
Convulsions	2		

Return showing Incidence of Disease.

Beri-beri	7	Leukæmia Lymphatic	1
Dysentery	16	Ankylostomiasis	1
Amœbic Acute	5	Sapraemia	1
Amœbic Chronic	6	Plague Bubonic	5
Bacillary Acute	3	Lobar Pneumonia	11
Bacillary Chronic	2	Syphilis	28
Enteric Fever	3	Neoplasm :—	
Malaria	42	Carcinoma stomach	2
Acute S. T.	11	Carcinoma cæcum	1
Chronic S. T.	2	Carcinoma liver	2
Pigment only	29	Carcinoma Pancreas	1
Tetanus	1	Hypernephroma	1

A.—Nervous System.

Cerebral Softening	2	Gumma Optic Chiasma	1
Cerebral Hæmorrhage	7	Meningitis	4
Cerebral Laccration	10	Tuberculous	3
Subdural Hæmorrhage	8	Septic	1
Menigeal Hæmorrhage	3		

B.—Circulatory System.

Aneurysm Aorta	5	Endocarditis Chronic	5
Aneurysmal dilatation Aorta	1	Pericarditis Acute	3
Aortitis—Syphilitic	16	Pericarditis Chronic	2
Myocarditis Syphilitic	4	Pericarditis Tuberculous ...	1
Arteriosclerosis	6	Gumma Heart	1
Congenital Heart Disease ...	1	Leukæmia Lymphatic	1
Acute Cardiac Dilatation ...	1	Thrombosis Coronary artery	1
Endocarditis Acute	1		

C.—Respiratory System.

Broncho Pneumonia	...	18	Right side lower lobe	2
Septic	...	1	Right side upper and	
Influenzal	...	7	middle lobe	1
Pneumococcic	...	10	Left side lower lobe	3
Pleurisy Acute	...	10	Double	3
Pleurisy Chronic	...	7	Pulmonary Emphysema	2
Pleurisy Tuberculous	...	23	Pulmonary Collapse	3
Pneumonia Hypostatic	...	1	Pyopneumothorax-traumatic	1
Empyema	...	2	Tuberculosis-lung	27
Amœbic	...	1	Active	20
Tuberculous	...	1	Quiescent	7
Lobar Pneumonia Acute	...	10	Tuberculosis Larynx	2
Right side middle lobe	1			

D.—Alimentary System.

Pepticulcer :—			Cyanotic Atrophy liver	1
Gastric	...	1	Hæmangioma liver	1
Duodenal	...	2	Acute Intestinal Obstruc-	
Cholangitis-Septic-Acute	...	1	tion	3
Calculi-biliary	...	5	Volvulus	2
Hepatic Cirrhosis	...	3	Fibrous band	1
Hepatic abscess amœbic	...	3	Appendicitis	1
Splenic abscess	...	1	Perforated duodenal ulcer	1
Tuberculosis small gut	...	4	Perforated appendicitis	1
Tuberculosis large gut	...	3	Acute Intestinal Obstruc-	
Tuberculosis liver	...	1	tion	1
Tuberculosis spleen	...	1	Acute funiculitis	1
Peritonitis-Acute General	...	10	Pyosalpinx	1
Perforated gastric ulcer	1		Traumatic	4

E.—Genito-urinary System.

Parenchymatous nephritis	...	6	Testes-undescended	1
Acute	...	1	Cystitis-Acute	2
Chronic	...	5	Stricture urethra	1
Interstitial nephritis	...	2	Cystic Kidney	1
Pyelonephritis Acute	...	2	Calculus-urinary	1
Pyosalpinx	...	1	Acute funiculitis	1
Paroxysmal hæmaturia	...	1	Urine-Extravasation of	1

F.—External Causes.

Asphyxia ...	...	14	Kidney ...	...	3
Drowning ...	7		Lung ...	...	1
Hanging ...	7		Liver ...	...	2
Strangulation ...	1		Spleen ...	...	2
Scalds ...	...	1	Popliteal vessels ...	...	
Gun-shot wound ...	...	3	Internal jugular vein ...	...	2
Stab wounds:—			Aorta ...	...	1
Chest ...	...	10	Carotid artery ...	...	1
Heart ...	...	3	Thigh ...	...	1
Lung ...	...	5	Poisoning ...	...	8
Abdomen ...	...	15	Opium ...	...	2
Liver ...	...	5	Chloroform ...	...	1
Spleen ...	...	2	Veronal ...	...	1
Stomach ...	...	5	Alcohol ...	...	1
Gut ...	...	2	Potassium Cyanide ...	...	1
Kidney ...	...	1	Irritant ...	...	2
Subclavian vessels ...	...	1	Fracture:—		
Multiple injuries ...	...	6	Skull ...	...	15
Rupture:—			Spine (with dislocation) ...	...	3
Spleen ...	...	7	Femur ...	...	2
Liver ...	...	5	Tibia ...	...	2
Stomach ...	...	2	Fibula ...	...	2
Duodenum ...	...	1	Humerus ...	...	1
Heart ...	...	1	Radius ...	...	2
Urethra ...	...	1	Ulna ...	...	1
Gut ...	...	2	Ribs ...	...	10
Laceralia-Cerebrum ...	...	10	Pelvis ...	...	4
Stomach ...	...	1	Jaw ...	...	1
Gut ...	...	1	Facial bones ...	...	1

G.—Varied Conditions.

Helminthiasis:—			Clonorchis Sinensis ...	13
Ankylostomiasis ...	11		Strongyloides Stercoralis ...	1
Ascaris Lumbricoides ...	26		Taenia Solium ...	1
Trichuris Trichiura ...	3			
Died within 24 hours of admission ...		50		
Died within 48 hours of admission ...		20		
Inquest cases ...		138		

TAN TOCK SENG HOSPITAL MORTUARY.

Return showing the immediate cause of Death.

Total number of Autopsies	652	Lymphatic Leukæmia ...	1
Beri-beri ...	37	Still birth ...	1
Plague ...	5	Senility ...	3
Cerebro-spinal Meningitis ...	3	Tetanus ...	2
Pneumonia Lobar ...	58	Diseases of the Nervous system ...	24
Accidents, etc. ...	70	Diseases of the Circulatory system ...	59
Poisoning ...	2	Diseases of the Respiratory system ...	62
Malaria ...	51	Diseases of the Alimentary system ...	26
Tuberculosis ...	51	Diseases of the Genitourinary system ...	25
Enteric Fever ...	6	Bones for identification of sex ...	1
Dysentery ...	44	Too decomposed for autopsy ...	9
Syphilis ...	4		
Suppurative Peritonitis ...	40		
Septic conditions, varied ...	21		
Ankylostomiasis ...	7		
Schistosomiasis ...	4		
Neoplasm ...	34		
Leprosy ...	1		
Splenic Anæmia ...	1		

Return showing Incidence of Disease.

Beri-beri	...	...	40	Cerebro-spinal Meningitis	...	3
Dysentery	...	...	83	Diphtheria	...	1
Amœbic Acute	...	9		Sapræmia	...	13
Amœbic Chronic	...	34		Septicæmia	...	6
Bacillary Acute	...	26		Pyæmia	...	1
Bacillary Chronic	...	4		Tetanus	...	2
Mixed Acute	...	2		Plague	...	5
Mixed Chronic	...	8		Bubonic	...	4
Enteric Fever	...	22		Septicæmia	...	1
Pigmented Peyer's Patches	...	15		Leukæmia-Lymphatic	...	2
Malaria	...	136		Splenic Anæmia	...	3
Acute S. T. R.	...	50		Tuberculosis General	...	7
Acute Quartan	...	1		Syphilis	...	136
Acute Mixed	...	1		Leprosy	...	4
Chronic S. T. R.	...	4		Neoplasm	...	45
Pigment only	...	80		Endothelioma	...	5
Ankylostomiasis	...	10		Sarcoma	...	2
Schistosomiasis	...	7		Carcinoma	...	38

A.—Nervous System.

Cerebral Softening	...	11	Tabes Dorsalis	...	1
Cerebral Gumma	...	6	Meningitis:—	...	20
Cerebral Hæmorrhage	...	15	Pneumococcic	...	8
Cerebral Oedema	...	4	Septic	...	1
Meningeal Hæmorrhage	...	4	Cerebro-Spinal	...	3
Subdural Hæmorrhage	...	14	Syphilitic	...	3
Encephalitis Pneumococcic	...	1	Tuberculous	...	5
Myelitis Transverse	...	1			

B.—Circulatory System.

Anæmia Splenic	...	3	Pericarditis Chronic	...	6
Leukæmia Lymphatic	...	2	Myocarditis Syphilitic	...	12
Aneurysm Aorta	...	9	Fatty degeneration of		
Aneurysmal dilation-Aorta	...	10	Heart	...	8
Aortitis Syphilitic	...	54	Gumma Heart	...	3
Syphilitic Endarteritis	...	68	Thrombosis	...	5
Arteriosclerosis	...	29	Pulmonary Artery	...	1
Acute Cardiac Dilation	...	1	Aorta-Abdominal	...	1
Endocarditis-Acute	...	6	Femoral Vein	...	1
Endocarditis Chronic	...	42	Lateral Sinus	...	2
Pericarditis Acute	...	21			

C.—Respiratory System.

Oedema-glottidis	...	2	Pneumococcic	...	52
Stricture Larynx Syphilitic	...	4	Pleurisy	...	230
Bronchiectasis	...	2	Acute	...	69
Broncho pneumonia	...	64	Chronic non-tubercu-		
Influenzal	...	4	lous	...	79
Septic	...	8	Tuberculous	...	82

C.—Respiratory System.—Continued.

Pneumonia Lobar Acute	61	Right side upper and lower lobe ...	1
Right side upper lobe	4	Right side complete	1
Right side middle lobe	7	Left side upper lobe ...	2
Right side lower lobe	8	Left side lower lobe ...	2
Right side upper and middle lobe ...	1	Left side complete ...	2
Right side middle and lower lobe ...	5	Double complete ...	2
Right side upper and lower lobe ...	2	Empyema ...	13
Right side complete ...	5	Tuberculous ...	1
Left side upper lobe ...	2	Septic ...	4
Left side lower lobe ...	14	Amœbic ...	1
Left side complete ...	5	Pneumococcic ...	7
Double right and left upper ...	1	Pneumonia, Hypostatic ...	10
Right upper and left lower ...	1	Pyopneumothorax ...	2
Right middle and left lower ...	1	Pulmonary Gangrene ...	15
Complete ...	5	Pulmonary abscess (one amœbic) ...	12
Pneumonia Lobar Chronic	24	Pulmonary Collapse ...	16
Right side upper ...	5	Pulmonary Carcinoma secondary ...	5
Right side middle ...	1	Pulmonary Sarcoma secondary ...	1
Right side lower lobe	2	Pulmonary Infarct ...	4
Right side upper and middle lobe ...	5	Fibrosis lung-Syphilitic ...	2
Right side middle and lower lobe ...	1 *	Tuberculosis lung ...	119
		Active ...	82
		Quiescent ...	37
		Tuberculosis Larynx ...	3
		Emphysema, Pulmonary ...	2

D.—Alimentary System.

Alveolar Abscess ...	2	Carcinoma Liver (9 primary)	17
Malignant Epulis ...	2	Tuberculosis Gut ...	33
Oesophageal ulcer simple	1	Tuberculosis Liver ...	9
Oesophageal ulcer malignant (carcinoma) ...	7	Tuberculosis spleen ...	8
Peptic ulcer chronic ...	28	Perisplenitis Chronic ...	16
Gastric ...	23	Spleen-Gumma ...	1
Duodenal ...	5	Spleen-Infarct ...	4
Carcinoma gastric ...	9	Peritonitis Acute General:—	
Appendicitis Acute ...	6	Perforated Enteric ulcer ...	11
Stricture small gut tuberculous ...	1	Perforated dysenteric ulcer ...	1
Stricture rectum-dysenteric	1	Perforated gastric ulcer simple ...	10
Cholangitis septic acute ...	9	Perforated gastric ulcer malignant ...	1
Cholecystitis ...	5	Perforated duodenal ulcer ...	3
Empyema of Gall bladder	1	Perforated tuberculous ulcer small gut ...	1
Calculi biliary ...	10	Perforated bileduct ...	1
Hepatic Cirrhosis ...	71	Perforated appendicitis	6
Concretion-Appendicular	1	Peritonitis-Pneumococcic ...	2
Intestinal obstruction Acute	3	Peritonitis Traumatic	7
Volvulus ...	1	Peritonitis Tuberculous ...	8
Intussusception ...	2	Peritonitis Chronic ...	5
Hepatic abscess ...	9		
Amœbic ...	2		
Septic ...	7		
Gumma Liver ...	3		
Congenital Cysts Liver ...	4		
Angioma Liver ...	3		

E.—Genito-urinary System.

Parenchymatous Nephritis		Cystitis Acute	...	7
Acute	...	Uræmia	...	6
Parenchymatous Nephritis	5	Tuberculosis Testes	...	3
Chronic	...	Tuberculosis Epididymis	...	3
Interstitial Nephritis	25	Stricture urethra	...	4
Pyelonephritis Acute	18	Prostate Hypertrophied	...	1
Pyonephrosis	...	Prostate abscess	...	1
Hydronephrosis	3	Extravasation of urine	...	1
Renal abscess	2	Chylocele	...	1
Renal Tuberculosis	1	Hydrocele Lunica Vagi-	...	1
Renal Infarct	...	nalis testis	...	9
Renal Calculi	...	Gonorrhœal urethritis	...	1
Renal Cysts	7			
	14			

F.—External Causes.

Asphyxia	...	11	Rupture—	
Hanging	...	8	Liver	...
Drowning	...	3	Spleen	...
Burns, Scalds, etc.	...	4	Stomach	...
Gun-shot wounds	...	4	Colon	...
Cut throat	...	2	Laceration—	
Stab wounds:—			Brain	...
Heart	...	6	Kidney	...
Lungs	...	11	Hæmorrhage:—	
Liver	...	5	Middle meningeal	...
Kidney	...	1	Subdural	...
Oesophagus	...	1	Cerebral	...
Stomach	...	2	Fracture:—	
Gut	...	1	Skull	...
Duodenum	...	1	Spine	...
Carotid artery	...	2	Femur	...
Aorta	...	1	Tibia	...
Posterior Tibial vessels	...	1	Fibula	...
Pulmonary artery	...	1	Mandible	...
Internal Jugular Vein	...	1	Ribs	...
Subclavian artery	...	1	Pelvis	...
Pericardium	...	1	Humerus	...
Abdomen alone	...	3	Sternum	...
Chest alone	...	2	Clavicle	...
Spleen	...	1	Multiple Injuries	...
Poisoning-opium	...	1		
Oxalic acid	...	1		

G.—Varied Conditions.

Abscess—		Tuberculosis sacro-iliac	
Psoas	...	synchondrosis	...
Mastoid	...	Kyphosis	...
Subphrenic	...	Endothelioma Cervical	...
Cellulitis Acute	...	glands	...
Sloughing scrotum	...	Sarcoma Femur	...
Cancrum Oris	...	Helminthiasis:—	
Otitis media	...	Ankylostomiasis	...
Necrosis jaw	...	Ascaris Lumbricoides	...
Arthritis Septic	...	Trichuris Trichiura	...
Arthritis Pneumococcic	...	Clonorchis Sinensis	...
Emphysema Surgical	...	Schistosomum Japoni-	...
Gumma bone	...	cum	...
Tuberculosis spine	...	Still birth	...
	3		
Died within 24 hours of admission	...		159
Died within 48 hours of admission	...		69
Inquest cases	...		157

II.—PENANG.

REPORT BY A. N. KINGSBURY, M.B., B.S., *Acting Government Pathologist.*
Statistical.

During the past year 10,238 blood films for malarial parasites, 11,526 specimens of faeces for protozoa and ova, 4,296 urines and 1,539 sputa have been submitted for laboratory diagnosis.

Films examined for gonococci, *B. lepræ*, *B. tuberculosis* in urine, meningococci, *B. diphtheriæ* and spirochaetae numbered 521, 67, 5, 37, 21, and 16 respectively.

Ninety-three Blood counts and 41 Widal's have been performed.

The Wassermann reactions for the year totalled 1,195 and histological reports were furnished on 46 specimens of tissue.

A total of 770 bacteriological cultures were made including the preparation of 24 vaccines and 38 examinations of water.

Autopsies were conducted on 236 cases. The total number of examinations for the year was 30,061.

Malaria.

Of the cases admitted to the District Hospital (Asiatic) about one-fifth are found to harbour malarial parasites.

Malignant tertian is most commonly met with (75.5 per cent), benign tertian is less common (22 per cent) and quartan is only occasionally seen (0.5 per cent). Mixed infections are rare.

No case of blackwater fever has been admitted to the hospital during the year.

Helminthiasis.

Ankylostomiasis and Ascariasis are very prevalent but rarely present serious symptoms. Forty-four per cent of the natives admitted to hospital are found to be infected with one or the other, or both. The ankylostome infections are not as a rule heavy. *Necator Americanus* is the common hookworm in the locality, but *ankylostoma duodenale* is frequently observed and *ankylostoma ceylanicum* has also been seen.

Cestode infections are common. No case of Trematode infection has been noted *post-mortem* although ova of *clonorchis sinensis* were found in the stools of one Chinese patient.

Dysentery.

Amoebic and bacillary dysentery account for 7.5 per cent of the admissions to the native hospital.

Amoebic is slightly the more prevalent and from the bacillary cases Flexner's bacillus has been the organism isolated in the majority of cases during the last three months of the year.

The classical chocolate coloured pus is not commonly seen in the evacuation of a liver abscess and when present it is probably an indication that the abscess is not of recent formation. Liver abscesses in the early stages appear to contain yellowish or yellowish green pus in which motile amoeba have been demonstrated in some numbers. When the pus is brownish red in colour amoebae have rarely been found.

The cellular exudate in the stools has not been of marked value for the differentiation of subacute and chronic bacillary from amoebic dysentery.

Two cases of *B. faecalis alkaligenes* septicæmia have been diagnosed by blood culture. One case came to autopsy. There were chronic dysenteric lesions of the cæcum and a marked nephritis.

Pulmonary Tuberculosis.

Among the Chinese and Tamils pulmonary tuberculosis progresses rapidly to a fatal issue. Early cases have little cough and the fever is frequently ascribed to malaria until this diagnosis is negatived by repeated blood examination.

Fibroid phthisis is infrequent and in both races an acute broncho-pneumonia is the usual cause of death. The mesenteric glands are often caseous, and tubercular ulceration of ileum is a common complication.

Occasionally an autopsy on a Chinese will reveal long standing pleural adhesions, fibrous nodules in the apices of the lung or calcified glands without any evidence of active tubercular disease. Health tuberculosis has also been found in one Tamil case.

An interesting condition which has been noted on two occasions is tubercular cavitation of the lower lobes without macroscopic lesions of the upper lobes.

Venereal Diseases.

More than half the cases admitted to the District Hospital show signs of active or latent syphilis. It is often impossible to persuade the cooly to remain in hospital for the completion of a thorough course of treatment and it can only be anticipated that large numbers of the cases will relapse later.

Gonorrhœa is very prevalent but only the cases which are incapacitated for work seek admission to hospital. Gonorrhœal arthritis is a very frequent complication.

Pneumonia.

Although lobar and broncho-pneumonia cases total only 3 per cent of the admissions to hospital, the death-rate from these diseases is high in both Tamils and Chinese. It is hoped that some typing sera will be available shortly, when the prevalent local type of pneumococci will be determined.

Malignant Disease.

Malignant disease is not uncommon. During the last four months of the year, a round cell sarcoma, two melonotic sarcomata and an epithelioma have been diagnosed histologically in Chinese patients.

The diagnosis of epithelioma has been confirmed histologically in two Tamils. In one case the site was the palate and in the second the pillar of the fauces.

Neither case had been betel nut chewers and the Wassermann Reaction was negative in both instances. The ages were 44 and 38 years respectively.

A case of a large bilateral hypernephroma without secondary deposits in a Chinese and a mixed parotid tumour in a Tamil were also noted.

In addition to the above cases *post-mortem* records include a sarcoma of the neck (Chinese aged 42) a carcinoma of the descending colon (Chinese aged 38), two cases of carcinoma of the liver (Chinese aged 51 and 55) and a carcinoma of the pylorus (Tamil aged 45).

Among the less common intestinal parasites, *Balantidia* have been found in three specimens (out of about 3,000 stool examinations). In no case were there dysenteric symptoms.

Endolimax nana, *giardia intestinalis* and *trichomonas hominis* have been occasionally seen.

The greater reliability of the examination of material from the scarification of nodular lesions rather than of the nasal secretion has been again noted in cases of leprosy.

During the past year no case of plague, cholera, melioidosis or kala azar has come to autopsy.

Beri-beri was very rarely seen.

Investigations.

There has been close collaboration with the District Hospital in investigations carried out on ankylostomiasis, dysentery and malaria.

In connection with the trial of bismuth sodium potassium tartrate in the treatment of syphilis and yaws quantitative Wassermann Reactions have been carried out before and after treatment. The positivity of the test shows marked decrease as the treatment progresses, but a frank negative reaction is seldom obtained owing to the difficulty of subjecting the patients to a long course of treatment.

The Levaditi test in addition to the Wassermann Reaction has been carried out on a large series of cases, with a view to determining the relative accuracy of these tests for syphilis. A report on this work is attached.

An interesting case of dermatitis in a European which proved to be a primary gonococcal infection of the skin over the elbow was investigated in the laboratory.

A report on the case is also attached.

Staff.

Dr. J. C. TULL, Government Pathologist, Penang, was in charge of the department until the end of August, when he was relieved by Dr. A. N. KINGSBURY.

Buildings and Equipment.

The new pathological laboratories and the Brick Kiln Road (Public) Morgue were opened on October 1: The arrangement of the laboratories has been found excellent and the equipment is now almost complete. Apparatus for the estimation of blood sugar is expected shortly and with the equipment included in the indent for 1924, the department will be thoroughly up to date.

The amount of work is consequently steadily increasing.

A table showing the examinations undertaken month by month is attached, together with a report on the *post-mortem* diagnosis for the year.

PATHOLOGICAL LABORATORY, PENANG.

Post-mortem diagnosis for 1923.

Number of examinations 236.

Abscess of brain	...	1	Brought forward	...	91
Abscess of liver	...	2	Endocarditis, ulcerative	...	2
Abscess of lung	...	1	Epithelioma, pharynx	...	1
Ankylostomiasis	...	1	Exhaustion	...	8
Asphyxia from hanging	...	15	Fractured spine	...	3
Asphyxia from strangulation	...	1	Fractured skull	...	13
Asphyxia from suffocation	...	1	Gas gangrene	...	1
Bronchiectasis	...	1	Gastric ulcer, hæmorrhage	...	1
Cardiac disease myocarditis and	...	1	Gastritis	...	1
endocarditis	...	16	Hæmorrhage, traumatic	...	3
Carcinoma of colon	...	1	Hæmothorax, traumatic	...	3
Carcinoma of liver	...	2	Malaria	...	3
Carcinoma of pylorus	...	1	Meningitis, pneumococcal	...	2
Cerebral hæmorrhage	...	5	Nephritis, acute	...	2
Cholecystitis	...	1	Nephritis, chronic	...	6
Cirrhosis of liver	...	5	Oedema of glottis	...	1
Cut throat	...	3	Pericarditis	...	3
Drowning	...	12	Peritonitis	...	1
Dysentery, amœbic	...	7	Pneumonia, lobar	...	15
Dysentery, bacillary	...	9	Pneumonia, bronchial	...	9
Empyema	...	6	Poisoning, irritant	...	1
Carried forward	...	91	Carried forward	...	170

<i>Brought forward</i> ...	170	<i>Brought forward</i> ...	186
Poisoning, alkaloidal ...	1	Sarcoma of shoulder ...	1
Pyonephrosis, with calculi ...	1	Septicæmia ...	3
Rupture of aneurysm ...	5	Still-births ...	4
Rupture of bladder ...	1	Syphilis, cerebral and visceral ...	9
Rupture of liver ...	3	Tuberculosis, pulmonary ...	31
Rupture of spleen ...	4	Tuberculosis, miliary ...	2
Sarcoma of neck ...	1		
<i>Carried forward</i> ...	186	Total ...	236

III.—MALACCA.

PATHOLOGICAL LABORATORY.

REPORT BY S. N. BARDHAM, L.M.S., D.T.M. AND H.

An abstract of works done at the Laboratory:—

Examination of stool ... 1,626

For ova.—

Ankylostoma ovo detected ...	133	8'11%
Round-worm ova detected ...	170	9'95%
Whip-worm ova detected ...	228	13'5%
Oxyuris vermicularis detected ...	2	'12%
Ankylostoma and round-worm ...	32	1'96%
Ankylostoma and whip-worm ...	59	3'62%
Round-worm and whip-worm ...	159	9'78%
Round-worm, whip-worm and ankylostoma ...	54	3'32%
No ova ...	695	42'74%

For Amœba Histalytica.—

Amœba detected ...	12
No Amœba detected ...	71

Culture for Cholera.—

No cholera grown ...	2
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Culture for Enterica and Dysenteries.—

No organism of the groups grown ...	7
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For occult blood.—

Blood detected ...	1
No blood detected ...	1

Examination of blood ... 1,095

Malarial parasites detected.—

Subtertian parasites detected ...	72
Quartan parasites detected ...	32
Benign tertian parasites detected ...	37
Benign tertian and quartan detected ...	3
Benign and subtertian quarten detected ...	7
Subtertian and quartan detected ...	3
Pigmented large monocuclear detected ...	6
No parasite ...	893
Widal reaction (with negative result) ...	15
Differential leucocytes count ...	24
For filaria (with negative result) ...	3

Examination of Urine ... 575

Routine examination for albumen, sugar, casts, etc. ... 568

Urine culture for B. coli.—

Positive ...	2
Negative ...	3

<i>Examination of Urine for T. B.—</i>				
Positive	...	...	...	1
Negative	...	...	...	1
<i>Examination of smears for gonococcus.—</i>				
Positive	...	...	...	25
Negative	...	...	...	62
<i>Examination of smears for Diphtheria Bacillus.—</i>				
Positive	...	...	...	1
Negative	...	...	...	7
<i>Examination of smears for lepra bacillus.—</i>				
Positive	...	...	...	8
Negative	...	...	...	33
<i>Examination of smears for Meningococcus.—</i>				
Positive	...	...	...	3
Negative	...	...	...	5
Examination of Pus for T. B. (negative result)	...	...	...	1
Examination of Pus Amœba (negative result)	...	...	...	1
Examination of Sputum	...	...	...	268
<i>For T. B.—</i>				
Positive	...	...	...	66
Negative	...	...	...	188
<i>For Pneumococcus.—</i>				
Positive	...	...	...	5
Negative	...	...	...	9
<i>Examination of smears for Plague Bacillus.—</i>				
Positive	...	...	...	7
Negative	...	...	...	11
<i>Examination of Medico legal exhibits.—</i>				
For blood, etc.	...	...	...	8
Examination of Rats for plague (with negative result)	...	...	...	11
Wassermann reaction	...	...	...	246
Positive markedly	...	...	...	79
Positive partially	...	...	...	27
Negative	...	...	...	140
Examination of sections, identification of insects and worms, etc.	...	...	...	10
Total number of examinations in the laboratory	...	...	...	4,003
Number of <i>post-mortem</i> examinations (including 22 medico legal cases)	...	...	...	62

APPENDIX P.

KING EDWARD VII COLLEGE OF MEDICINE, SINGAPORE.

REPORT BY G. H. MACALISTER, M.A., M.D., D.P.H., *Principal*.

College Council.—The Hon'ble Dr. A. L. HOOPS, President, went on leave in December, and was replaced by Dr. J. GRAY, Acting Principal Civil Medical Officer.

Staff.—Mr. C. J. SMITH, Professor of Clinical Surgery went on leave in August and Mr. CHAMBERS was appointed to act as Professor. Similarly, Dr. J. C. TULL, undertook the duties of Lecturer in Pathology during the absence of Dr. FINLAYSON. Dr. J. S. WEBSTER, Professor of Medicine, was temporarily transferred to another post and was relieved by Dr. R. B. MACGREGOR.

Dr. SCHARFF, Lecturer on Biology, went on leave and Mr. R. E. HOLTUM was appointed to act in his place.

Dr. F. R. SAYERS undertook the duties of the Lecturer in Public Health during the absence of Dr. G. E. BROOKE.

Dr. E. R. STONE was appointed Lecturer in Mental Diseases.

Students.—Twenty-one students completed their course and passed the final examination thus qualifying for the Diploma of L. M. S.

The total number of licentiates at the close of the year was 160.

There were at the close of the year 140 students distributed among the successive years of study as follows:—

First year	...	...	...	...	40
Second year	...	...	...	...	22
Third year	...	...	...	...	13
Fourth year	...	...	...	...	33
Fifth year	...	...	...	...	32

of these 6 are Straits Settlements Government Students and 45 are Federated Malay States Government Students.

Discipline.—The conduct of the students has been satisfactory.

Revised regulations are now in force defining the duties and obligations of students towards the hospital staff.

Curriculum.—The revised regulations for the medical course issued by the General Council of Medical Education and Registration for Great Britain and Ireland came into force on January 1, 1923. It was decided that these should be adopted by the College and that the new regulations should come into force in the academic year commencing on June 1, 1923, to apply to students then commencing their studies. The next few years will be years of transition from the old curriculum to the new.

The main features of the new course are, first the relegation of the general elementary sciences to a preliminary, pre-registration, year thus expanding the course to six years, second, the provision of two full years for the study of anatomy and physiology and third, the inclusion of courses in special branches of medicine and surgery in the final year.

Equipment and Accommodation.—The increased votes of the last few years have rendered it possible to remedy the deficiency of equipment.

By the laying of the foundation stone of the new College building, a definite step towards advancement has been made. The stone was laid on September 6 by Lady GUILLEMARD in the presence of a representative gathering including the members and delegates of the Far Eastern Association of Tropical Medicine at that time meeting in Singapore. Tenders have been invited for the erection of the new building, and the work of clearing the site was commenced before the close of the year 1923.

APPENDIX Q.

FIFTH CONGRESS OF THE FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE.

On the invitation of the Governments of the British Malaya, the Fifth Congress of the Far Eastern Association of Tropical Medicine was held in Malaya from the 3rd to 17th September, 1923.

It was attended by 300 medical members representing 15 different countries. Generous donations for the expenses of the Congress were received from the Governments of the Straits Settlements and Federated Malay States, Johore and Kedah, and from the Municipalities of Singapore and Penang. The Municipality of Singapore also gave the free use of the Victoria Theatre, and Memorial Hall for the Congress Meetings.

His Excellency the Governor and High Commissioner honoured the Congress by becoming its patron. His Excellency and Lady GUILLEMARD entertained the whole of the members at a garden party, and the office holders and official delegates at dinners.

His Excellency also delivered the opening address of welcome on 3rd September, before a crowded audience in the Victoria Theatre, Singapore.

The Hon'ble Dr. A. L. HOOPS, President of the Congress, followed with his presidential address on "The Prevention of Disease in the Tropics".

His Excellency then inspected the Congress Chambers with Lady GUILLEMARD and declared them open. On the afternoon of the 6th September, Lady GUILLEMARD graciously laid the foundation stone of the new College of Medicine in the presence of a large number of the members of the Congress and of the general public. On this stone are inscribed the words "*Nunquam aliud natura aliud sapientia dixit*".

When the ceremony was over the guests were entertained to tea in the new Nursing Staff quarters of the General Hospital. After tea, many of the Congress members inspected the wards of the new General Hospital at present under construction.

Malaria.—Two mornings of the Congress were devoted to papers and discussions on Malaria, under the Chairmanship of Dr. MALCOLM WATSON:—

- (a) For increased progress in the prevention of this disease, greater knowledge is needed. We do not yet know why one species of anopheline is a carrier, and another, hardly to be distinguished from it is not. We suspect that the same species is not of equal danger in different countries. We require more scientists to investigate and administrators to carry out methods of prevention. Anti-malarial measures should precede or accompany, the opening up of country, and should not be deferred until the disease becomes epidemic. Whatever possible, permanent measures, such as drainage, should be scientifically carried out, through temporary expedients such as oiling, screening and the administration of Quinine also have their place.
- (b) The committee for the determination of the spleen rate, formed at the last Congress, continued its meetings. Its report as follows, was unanimously adopted by the general meeting.

RESOLUTION REGARDING THE MEASUREMENT OF THE SIZE OF THE
ENLARGED SPLEEN IN CHILDREN.

1. Since the last meeting of the Congress, investigation has shown that the difficulty due to varying size of children can be met by the use of a correction table based on anthropometric data. Such a table can be constructed with regard to:—

- (a) sitting height;
- (b) the line suggested by Dr. KUNO (from upper edge of inner extremity of clavicle to iliac spine of opposite side).

2. The costal margin as a base for measurement of the spleen has been shown to be unreliable and misleading.

For careful scientific observation, actual trial has shown that the size and position of the spleen is (up to the present) best indicated by a measurement from the apex of the spleen to the umbilicus, and one from the same point to the midline of the body, which fixes the position on the apex of the spleen in relation to the abdomen as a whole. It is recognised that the umbilicus is not an absolutely fixed point, but it has nevertheless been selected, because actual observation has shown that in children it is less liable than any other point to give misleading results. It is desirable that the value of this method, and the best way of applying it to practicable use, should be further investigated.

4. For routine work the committee do not think it advisable as yet to lay down rules.

5. It is suggested that the present committee remain in being with the object of making a further report to the Association at its next meeting.

Signed by,

DR. KIEWIET DE JONGE,
DR. HACKER,
LIEUT.-COL. CHRISTOPHERS,
DR. J. VAN LONKHUYZEN,
DR. WELLINTON,
DR. TSURUMI.

Beri-beri.—A number of papers on *Beri-beri* were presented. At a meeting of the Council of the Congress held on the morning of 4th September, the Hon'ble Dr. A. L. HOOPS read the letter of His excellency the Governor to the countries interested asking them to send delegates authorised to discuss international action towards the control of *Beri-beri*.

After some discussion on the possibility of control measures, the President called upon the meeting to nominate a few members of "A committee on *Beri-beri* control", to consider the matter in detail and furnish a report to the Council.

The following were chosen:—

Professor C. D. de LANGEN (representing the Netherlands East Indies).

Professor S. KANAI (representing Japan).

Surgeon-General Prince THAVARA (representing Siam).

Dr. L. LOPEZ RIAL (representing the Philippine Islands).

Dr. F. H. GUERIN (representing French Indo-China).

Lieut.-Col. E. BISSET I.M.S. (representing British India).

Dr. A. T. STANTON, Chairman (representing British Malaya).

This Committee furnished their report to the Council on the morning of 8th September. A lengthy discussion ensued.

The representatives of the countries interested handed in written statements or proposals from which it appeared that only the Philippine delegate was in favour of uniform legislative action by the Governments concerned to discourage the consumption of overmilled rice. Other delegations considered that such action was either premature or impossible. The Dutch delegations also challenged the phosphorus pentoxide standard.

The following resolution was finally adopted by the Council, and was unanimously passed by the general meeting of the Association on the same day.

RESOLUTION RECOMMENDED BY THE COMMITTEE

AS

AMENDED BY THE COUNCIL AND PASSED AT THE GENERAL MEETING

OF THE

FIFTH CONGRESS OF THE FAR EASTERN ASSOCIATION OF

TROPICAL MEDICINE.

1. The Fifth Congress of the Far Eastern Association of Tropical Medicine has considered the proposals of the Philippine Islands delegation for international action in the control of *beri-beri*, and has taken note of the views of the official delegates of Governments represented in the Congress.

2. The Association is of opinion that, consequent upon the divergence of views disclosed in the statements of the official delegates, any international convention is at present impracticable.

3. The Association reaffirms its opinion that beri-beri is a disorder of nutrition, and that in the Far East, the principal factor in its causation is a diet of which overmilled rice forms the staple.

4. The Association recommends that interested Governments be invited to promote further research in the following questions in relation to beri-beri control:—

- (a) the standardisation of rice;
- (b) the effects of transport and storage on rice;
- (c) economic considerations.

5. The Association recommends that each of the Governments interested and the International Health Board of the Rockefeller Foundation be invited to nominate a representative on a "Beri-beri Committee" which shall report at the next Congress. The names of such representatives should be notified to the General Secretary-Treasurer.

6. The Association considers that, in the meantime, individual Governments should take such action for the control of beri-beri as may be suited to local conditions in their respective countries, and should devote special attention to devising and applying practical methods of improving the diet of the general population with regard to the too exclusive use of over-milled rice, and should be requested to make available to the next Congress of the Far Eastern Association of Tropical Medicine systematic observations and statistical data showing the results of these methods.

7. The Association considers that educational methods of control on the basis of the available scientific knowledge should be vigorously applied in all countries.

QUARANTINE.

As regards Quarantine procedure in the Far East the final resolution, as follows, was unanimously passed at the general meeting of the Association.

"The Fifth Congress of the Far Eastern Association of Tropical Medicine, at the meeting held at Singapore, on the 8th September, 1923, considers that:—

- (a) the regulations of the International Convention of Paris, 1912, are not suitable for the proper carrying out of quarantine measures in the Far East;
- (b) the revisions so far proposed by L'Office Internationale d'Hygiene and the Office of Hygiene of the League of Nations do not alter this unsuitability;
- (c) that circumstances in the Far East demand a quite different quarantine procedure from that in Europe.

It is, therefore, desirable that a separate agreement should be drawn up to govern quarantine regulations in the Far East to allow of the necessary co-operation between the different Far Eastern countries.

It is also agreed that a copy of this resolution be sent to all Governments of the Far East and the Office of the Health Committee of the League of Nations at Geneva, and L'Office Internationale d'Hygiene at Paris."

At the same meeting the following resolution was proposed by the President and unanimously adopted: "That this Association requests the Health Committee of the League of Nations:—

- (a) to arrange for the temporary interchange of sanitary personnel in countries of the Far East;
- (b) in this connection to provide for a course of instruction for Health Officers to be given in Tokyo, following the Meeting of the Sixth Congress.

A wide range of subjects was included in the 50 papers contributed by members.

The prevention and cure of Leprosy, Ankylostomiasis, Dysentery and Plague were fully dealt with.

New discoveries in Bacteriology and Protozoology were announced.

The Hon'ble Dr. GALLOWAY, in his paper on opium-smoking pointed out that the plant had been grown and the drug used by the Chinese, for at least 1½ centuries.

It is, however, hardly within the scope of this annual departmental report to review the proceedings.

The funds at the disposal of the Congress render it possible to publish the full Transactions, which will it is hoped, be available by the middle of 1924.

On the second day of the Congress the following resolution of sympathy with Japan was passed:—

"That this Congress expresses its sincere sorrow and its deepest sympathy with the Japanese delegates, their Rulers and their people, in the national calamity that has befallen them". A relief fund was then opened by the President of the Congress; the sum of \$4,330 subscribed was later remitted to Dr. Y. MIYAGAWA, Japanese Vice-President of the Congress, for the relief of victims of the Earthquake.

The general meeting accepted on invitation from Japan to hold the Sixth Congress about October, 1925, at the Tokyo Imperial University, Japan, under the presidency of Professor S. KITASATO.

At the close of the General Meeting, Dr. J. J. VAN LONKHUYZEN, Vice-President for the Dutch East Indies, rose to speak on behalf of all the overseas countries represented at the Congress. He said:—

"It is not possible at this moment to have any idea of the scientific and practical results of this Conference, but it is possible to state that it has been a great success in every direction. I am sure I speak for the rest of the members who have attended the Congress, when I express hearty thanks to those who have done their share in this splendid organisation and all who have extended their hospitality to us. We owe His Excellency and Lady GUILLEMARD, a great debt of gratitude for their kindness to us, and thanks are due also to our excellent and sympathetic President, Dr. HOOPS; not forgetting our hardworking Secretary, Dr. SCHARFF.

During the Singapore meeting visits were paid to St. John's Quarantine Station and to sites of anti-malarial works in both the Municipal and rural areas of Singapore.

Excursions were made on several afternoons to various points of interest.

An "At Home" was given by the Malaya Branch of the British Medical Association at St. Andrews Hospital on the 5th September. A smoking concert was held in the Victoria Theatre on the night of 7th September.

The Biennial dinner of the Association, at which 350 guests were present in the Europe Hotel, on the 8th September, brought the meetings to an end in a happy manner.

The second week of the Congress was occupied by a tour through the Federated Malay States to Penang. Over 50 members, mostly from foreign countries availed themselves of this privilege.

Anti-malarial works were viewed in various places.

In Kuala Lumpur, the Institute of Medical Research, and the Medical Bureau and Museum were visited.

The Leper Asylums at Pulau Jerejak, Penang, and at Kuala Lumpur and the Mental Diseases Hospital at Tanjong Rambutan were inspected.

Visits were also paid to the Quarantine Stations at Port Swettenham and at Pulau Jerejak, Penang.

Excursions were made to points of interest en route.

The members everywhere met with the height of hospitality.

The hearty thanks of the Association are due to the people of Malaya who by their whole hearted co-operation greatly contributed to the success of the Congress.



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