

Annual report on the Medical Department / Straits Settlements.

Contributors

Straits Settlements. Medical Department.

Publication/Creation

[Singapore] : [G.P.O.], [1933]

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STRAITS SETTLEMENTS

Annual Report of the Medical Department for the year 1933

By

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Director of Medical and Health Services, S.S.

UNITED STATES DEPARTMENT OF AGRICULTURE

Annual Report of the
Department of Agriculture
for the year 1903



W. L. GARDNER
Director

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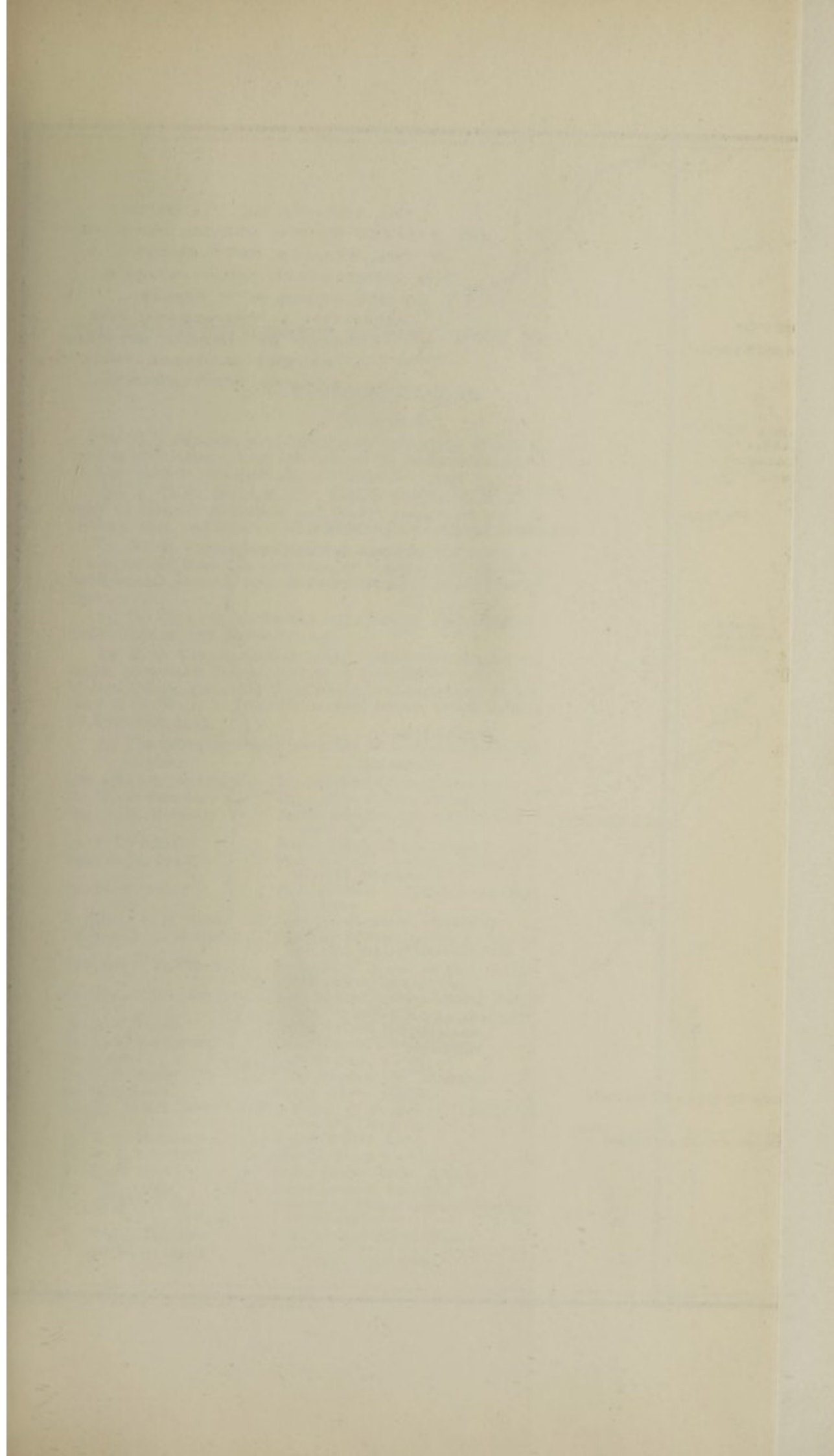
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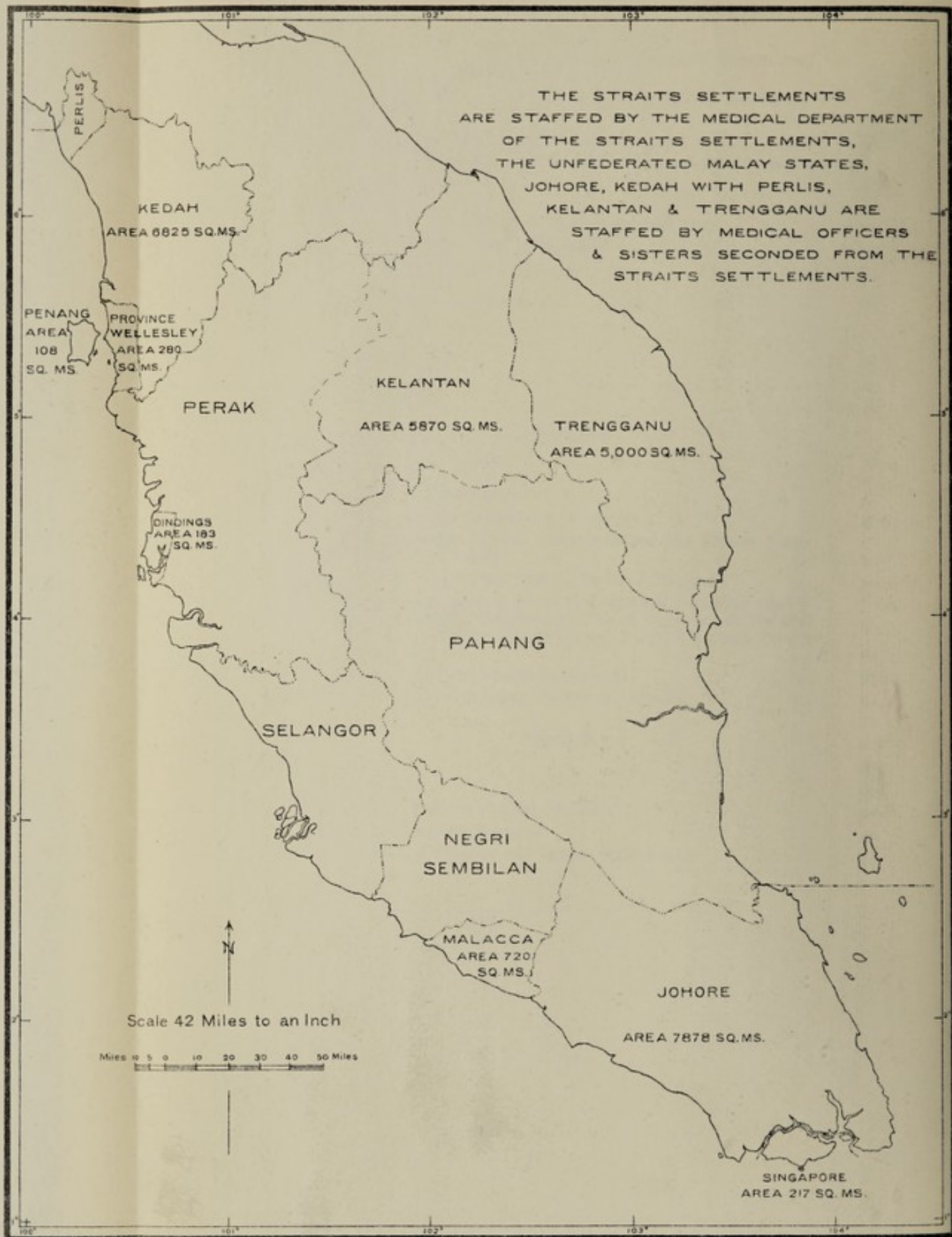
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THE STRAITS SETTLEMENTS MEDICAL REPORT FOR THE YEAR 1933

I.—ADMINISTRATION

(a).—Staff

Dr. C. J. WILSON, M.C., Director of Medical and Health Services, returned from leave on 28th January, 1933, and resumed the duties of his appointment. He proceeded on leave prior to retirement on 14th December, 1933.

Dr. R. D. FITZGERALD, M.C., Deputy Director of Medical and Health Services, acted as Director of Medical and Health Services from 1st January, 1933, to 27th January, 1933, and from 14th December, 1933, to the end of the year.

Dr. W. M. CHAMBERS, Chief Medical Officer, Singapore, acted as Deputy Director of Medical and Health Services from 1st January, 1933, till the date of his departure on leave on 20th January, 1933, and again acted on return from leave till the end of the year.

(2) Dr. (Mrs.) M. G. BRODIE was appointed Lady Medical Officer on a month to month basis on 27th September, 1933.

Dr. E. C. VARDY, Medical Officer, Federated Malay States, was appointed to the Straits Settlements Medical Service on 27th January, 1933, and Dr. D. M. McSWAN, Medical Officer, Federated Malay States, was transferred to the Straits Settlements in place of Dr. W. J. E. PHILLIPS, Medical Officer, Straits Settlements, with effect from 1st December, 1933.

(3) The following officers proceeded on leave during the year :—

Name	Appointment	Date
*Dr. (Mrs.) S. WINSTEDT ...	Lady Medical Officer, Singapore ...	1st January, 1933
Dr. W. M. CHAMBERS ...	Chief Medical Officer, Singapore ...	20th January, 1933
*Dr. N. H. HARRISON ...	Supernumerary Super Scale Medical & Health Officer, S.S. ...	26th January, 1933
Dr. J. W. SCHARFF ...	Senior Health Officer, Penang ...	13th February, 1933
Professor K. BLACK ...	Professor of Surgery, College of Medicine, Singapore ...	17th February, 1933
Dr. W. G. EVANS ...	Medical Officer i/c Officials and Gaol, Singapore ...	22nd February, 1933
Dr. (Mrs.) C. H. DUKE ...	Lady Health Officer, Schools, S. ...	17th March, 1933
Professor J. L. ROSEDALE ...	Professor of Biochemistry, College of Medicine, Singapore ...	30th March, 1933
Professor E. K. TRATMAN ...	Professor of Dental Surgery, College of Medicine, Singapore ...	28th April, 1933
Dr. (Miss) N. N. LOWTHER ...	Lady Medical Officer, General Hospital, Singapore ...	28th April, 1933
Dr. R. F. PINSON ...	Health Officer, Malacca ...	26th May, 1933
Dr. R. B. MACGREGOR ...	Chief Medical Officer, Malacca ...	13th June, 1933
Dr. J. GRAY ...	State Surgeon, Kedah ...	14th June, 1933
Dr. F. R. SAYERS ...	Chief Health Officer, Singapore ...	15th June, 1933
Dr. G. H. LOWE ...	Health Officer, Johore ...	18th August, 1933
Prof. J. R. KAY-MOUAT ...	Professor of Physiology, College of Medicine, Singapore ...	24th August, 1933
Dr. R. A. MACNAB ...	Medical Officer, Kedah ...	3rd September, 1933
Dr. A. H. LOWTHER ...	Medical Officer, Penang ...	3rd September, 1933
Dr. W. J. MOIR ...	Senior Health Officer, Johore ...	10th November, 1933
Mr. C. J. SMITH ...	Senior Surgeon, Singapore ...	8th December, 1933
*Dr. C. J. WILSON ...	Director of Medical & Health Services, Straits Settlements ...	14th December, 1933
Dr. H. G. HOLDBROOK ...	Chief Medical Officer, Penang ...	14th December, 1933

* Prior to retirement.

(4) The following officers returned from leave during the year :—

<i>Name</i>	<i>Appointment</i>	<i>Date</i>
Dr. J. C. TULL, F.R.C.P.	... Pathologist, Singapore ...	20th January, 1933
Dr. C. J. WILSON, M.C.	... Director of Medical and Health Services, Singapore ...	28th January, 1933
Professor B. M. JOHNS	... Professor of Clinical Surgery, College of Medicine, Singapore ...	18th February, 1933
Dr. H. G. HOLDBROOK	... Chief Medical Officer, Penang ...	30th March, 1933
Mr. E. A. JOY	... Accountant, Medical Department ...	31st March, 1933
Dr. J. S. WEBSTER	... Radiologist, Singapore ...	12th May, 1933
Dr. G. H. GARLICK	... Physician & Radiologist, Johore ...	27th June, 1933
Dr. W. L. BLAKEMORE	... Health Officer, Province Wellesley ...	31st August, 1933
Professor J. L. ROSEDALE	... Professor of Biochemistry, College of Medicine, Singapore ...	16th September, 1933
Dr. J. W. SCHARFF	... Senior Health Officer, Penang ...	16th September, 1933
Dr. W. G. EVANS	... Medical Officer i/c Officials and Gaol, Singapore ...	17th September, 1933
Professor K. BLACK	... Professor of Surgery, College of Medicine, Singapore ...	19th September, 1933
Dr. (Miss) N. N. LOWTHER	... Lady Medical Officer, General Hospital, Singapore ...	27th October, 1933
Dr. W. M. CHAMBERS	... Chief Medical Officer, Singapore ...	24th November, 1933
Dr. J. GRAY	... State Surgeon, Kedah ...	15th December, 1933
Professor E. K. TRATMAN	... Professor of Dental Surgery, College of Medicine, Singapore ...	22nd December, 1933

(5) The following officers resigned or retired or were retrenched during the year :—

<i>Name</i>	<i>Appointment</i>	<i>Date</i>
Dr. (Mrs.) A. E. BRUHN	... Lady Medical Officer, Malacca ...	26th January, 1933 resigned
Dr. (Mrs.) L. S. O'MAY	... Lady Medical Officer, S.S. ...	1st February, 1933 retired
Dr. E. L. ROBERT	... Medical Officer, S.S. ...	4th March, 1933 resigned
Dr. F. O'DRISCOLL	... Medical Officer, S.S. ...	11th April, 1933 retrenched
Dr. (Mrs.) S. WINSTEDT	... Lady Medical Officer, S.S. ...	11th August, 1933 retired
Dr. N. H. HARRISON	... Supernumerary Super Scale Medical & Health Officer, Straits Settlements ...	13th September, 1933 retired

(6) The following officers were lent by the Federated Malay States for service in the Straits Settlements during the year :—

<i>Name</i>	<i>Appointment</i>	<i>Date</i>
Dr. H. R. DIVE, M.C.	... Acting Chief Medical Officer, Penang ...	1st Jan., 1933 to 31st March, 1933
	... Acting Chief Medical Officer, Singapore ...	8th Dec., 1933 to 31st Dec., 1933
Dr. R. A. PALLISTER	... Medical Officer i/c Officials and Gaol, Singapore ...	1st May, 1933 to 31st Dec., 1933
Dr. J. E. McMAHON	... Medical Officer, Labuan ...	1st Jan., 1933 to 31st Dec., 1933
Dr. E. C. CHITTY	... Acting Professor of Clinical Surgery, College of Medicine, Singapore ...	1st Jan., 1933 to 2nd March, 1933
Dr. A. G. BADENOCH	... Health Officer, Malacca ...	22nd May, 1933 to 31st Aug., 1933
Mr. C. F. MUMMERY	... Dental Officer, Singapore ...	20th March, 1933 to 31st Dec., 1933

(7) The following officers were lent to the Federated Malay States during the year :—

<i>Name</i>	<i>Appointment</i>	<i>Date</i>
Dr. N. H. HARRISON	... Superscale Medical and Health Officer ...	1st Jan., 1933 to 25th Jan., 1933
Dr. W. J. E. PHILLIPS	... Medical Officer ...	1st Jan., 1933 to 30th Nov., 1933
Dr. R. WALKINGSHAW	... Medical Officer ...	1st Jan., 1933 to 27th April, 1933
Dr. D. R. McPHERSON	... Medical Officer ...	1st Jan., 1933 to 31st Dec., 1933
Dr. J. C. CARSON	... Medical Officer ...	29th Nov., 1933 to 31st Dec., 1933
Dr. J. PORTELLY	... Health Officer ...	9th June, 1933 to 31st Dec., 1933
Dr. R. D. GROSS	... Health Officer ...	1st Jan., 1933 to 2nd Sept., 1933
Mr. J. M. COUTTS	... Dental Surgeon ...	14th March, 1933 to 31st Dec., 1933

(8) The following officers were seconded for service in the Unfederated Malay States:—

<i>Name</i>	<i>Appointment</i>	<i>Date</i>
Dr. G. H. GARLICK	... Physician & Radiologist, Johore	... 27th June, 1933 to 31st Dec., 1933
Dr. W. J. MOHR	... Senior Health Officer, Johore	... 1st Jan., 1933 to 9th Nov., 1933
Dr. J. V. LANDOR	... Medical Officer, Johore	... 1st Jan., 1933 to 31st Dec., 1933
Dr. R. WALKINGSHAW	... Medical Officer, Johore	... 28th April, 1933 to 31st Dec., 1933
Dr. M. EDWARDS	... Medical Officer, Johore	... 1st Jan., 1933 to 31st Dec., 1933
Dr. J. PORTELLY	... Health Officer, Johore	... 1st Jan., 1933 to 8th June, 1933
Dr. S. W. EVESON	... Health Officer, Johore	... 4th Nov., 1933 to 31st Dec., 1933
Dr. G. H. LOWE	... Health Officer, Johore	... 1st Jan., 1933 to 17th Aug., 1933
Dr. W. PULESTON-JONES	... Health Officer, Johore	... 1st Jan., 1933 to 31st Dec., 1933
Dr. P. G. CURRID (F.M.S. Officer)	... Health Officer, Johore	... 18th Aug., 1933 to 31st Dec., 1933
Dr. (Mrs.) M. A. H. ZYLSTRA	Lady Medical Officer, Johore	... 1st Jan., 1933 to 31st Dec., 1933
Dr. J. GRAY	... State Surgeon, Kedah	... 1st Jan., 1933 to 13th June, 1933 15th Dec., 1933 to 31st Dec., 1933
Dr. D. T. SKEEN (F.M.S. Officer)	... Acting State Surgeon, Kedah	... 15th June, 1933 to 31st Dec., 1933
Dr. J. I. BAEZA	... Senior Health Officer, Kedah	... 1st Jan., 1933 to 7th Feb., 1933
Dr. J. H. BOWYER	... Health Officer, Kelantan	... 1st Jan., 1933 to 3rd Feb., 1933
	Health Officer, Kedah	... 4th Feb., 1933 to 31st Dec., 1933
Dr. H. J. LAWSON (F.M.S. Officer)	... Medical Officer, Kedah	... 29th Aug., 1933 to 31st Dec., 1933
Dr. (Mrs.) M. G. BRODIE	Lady Medical Officer, Kedah	... 5th Dec., 1933 to 31st Dec., 1933
Dr. R. A. MACNAB	... Medical Officer, Kedah	... 1st Jan., 1933 to 2nd Sep., 1933
Dr. R. C. BURGESS	... Health Officer, Kedah	... 1st Jan., 1933 to 31st Dec., 1933
Dr. J. A. P. CAMERON	... Medical Officer, Kedah	... 1st Jan., 1933 to 31st Dec., 1933
Dr. (Miss) E. M. WEIR	... Lady Medical Officer, Kedah	... 1st Jan., 1933 to 3rd Dec., 1933
Dr. L. W. EVANS	... Chief Medical Officer, Kelantan	... 1st Jan., 1933 to 31st Dec., 1933
Dr. G. I. H. BRAINE (F.M.S. Officer)	... Medical Officer, Trengganu	... 1st Jan., 1933 to 31st Dec., 1933
Dr. E. W. MARTINDALL	... Medical Officer, Brunei	... 1st Jan., 1933 to 31st Dec., 1933

(9) *European Matrons and Sisters.*—The number of Matrons and Sisters in the service, including those seconded to the Unfederated Malay States, was 86 in 1933 as compared with 99 in 1932.

(10) The staff of the local medical service numbered 71.

(b).—Ordinances

The following ordinances respecting public health were passed during 1933:—

Ordinance No. 4 of 1933.—An ordinance to amend Ordinance No. 224 (King Edward VII College of Medicine). The objects and reasons are to enlarge the purposes of the College of Medicine by establishing a school of dentistry and providing for the grant of a diploma in this subject.

Ordinance No. 15 of 1933.—On ordinance to amend Ordinance No. 99 (Medical Registration). The objects and reasons for the more important amendments proposed by this Bill are as follows:—

Clause 2: permits allowances and travelling expenses to be paid to members of the Medical Council in connection with attendance at meetings.

Clause 4 : requires satisfactory evidence to be produced to the Registrar before any degree or qualification can be entered on the register.

Clause 5 : empowers the Medical Council to remove names from the register in cases not at present provided for.

Clause 6 : enables necessary alterations to be made in the register from time to time.

Ordinance No. 16 of 1933.—An Ordinance to provide for the Registration of Dentists. The objects and reasons are to repeal and to re-enact in amended form Ordinance No. 202 (Dentists' Registration).

Ordinance No. 30 of 1933.—An ordinance to provide for the Registration of Pharmacists. The object of this Bill is to provide for the training of Pharmacists and also to provide for the registration of properly qualified pharmacists in the Straits Settlements.

Ordinance No. 37 of 1933.—An ordinance to amend and consolidate the law for preventing the introduction into and spread in the Colony, and the transmission from the Colony of Infectious Diseases. This Bill repeals the existing law relating to infectious diseases which is contained in Ordinance No. 157 (Quarantine and Prevention of Disease), as amended by the Statute Laws (Revised Edition) Operation Ordinance, 1926, and as amended by the Quarantine and Prevention of Disease (Amendment) Ordinance, 1931. The provisions of these Ordinances are in the main consolidated and inserted in the present Bill, and the requirements of the International Sanitary Convention, which was signed at Paris in 1926 and to which the Government of the Straits Settlements has adhered, have been incorporated.

(c).—Financial

The actual expenditure on medical and health services and the revenue collected in the various settlements were :—

EXPENDITURE

					\$
Singapore	...	...	...	...	2,241,610
Penang	...	...	...	...	924,460
Malacca	...	...	...	...	335,290
Labuan	...	...	...	...	23,475
Total	...	...	...	...	3,524,835

REVENUE

					\$
Singapore	...	...	...	...	787,650
Penang	...	...	...	...	325,300
Malacca	...	...	...	...	103,820
Labuan	...	...	...	...	3,585
Total	...	...	...	...	1,220,355

In addition to the above the Health Services of the Municipalities spent :—

					\$	c.
Singapore	...	...	...	...	715,000	66
Penang	...	...	...	...	248,394	90
Malacca	...	...	...	...	43,926	14
TOTAL	...	...	...	...	1,007,321	70

Further particulars are given in Table II on page 90.

Note.—\$1=2s. 4d.

II.—PUBLIC HEALTH

(a).—General Remarks

MONTHLY MORTALITY FIGURES FOR THE PAST SIX YEARS.

	1928	1929	1930	1931	1932	1933
January	2,577	2,571	2,387	2,487	2,224	2,177
February	2,219	2,139	2,117	1,956	1,947	1,967
March	2,401	2,410	2,411	2,004	1,924	1,966
April	2,615	2,307	2,689	2,208	2,026	2,000
May	3,004	2,734	3,219	2,903	2,279	2,250
June	2,921	2,629	3,194	2,742	2,173	2,214
July	2,980	2,571	2,870	2,323	1,961	2,084
August	2,495	2,302	2,603	2,255	1,834	1,884
September	2,496	2,323	2,588	2,033	1,867	1,936
October	2,524	2,443	2,658	2,046	2,042	2,068
November	2,607	2,482	2,639	2,112	2,092	2,238
December	2,677	2,633	2,553	2,300	2,172	2,417
Total Deaths	31,516	29,544	31,928	27,369	24,541	25,201

The economic depression of 1932 continued throughout the year under review necessitating further repatriation of Chinese and Indian labourers. 86,555 deck passengers returned to China and 32,339 deck passengers returned to India, as compared with 150,918 to China and 52,911 to India in 1932.

The continued high standard of health throughout 1933 may be attributed in part to the emigration of many sick and decrepit persons, but it is reasonable to conclude from the low mortality figures for communities not affected by emigration, that the year under review was a healthy one.

The number of admissions to hospitals decreased from 54,442 in 1932 to 50,206 in 1933.

The universal economic depression and the consequent lowering of the standard of living curiously enough did not give rise to any definite increase in those diseases which one would expect as a result from deficiency in quality or quantity of food.

The total number of deaths recorded in 1933 was 25,201, compared with 24,541 in the previous year.

The death-rate was 24.26 per mille, as compared with 21.39 per mille in 1932.

The infantile mortality was 168.04 per mille, compared with 162.43 in 1932.

The census population for 1931 and the population estimated racially and collectively of the Straits Settlements for the years 1931, 1932 and mid-year 1933 are shown in Table III C.

The method of calculating the population is that adopted by the Registrar-General of Statistics, Straits Settlements, who derives the mid-year population for the year 1933 from the 1931 census figures by adding the excess of births over deaths and subtracting the excess of emigrants over immigrants. The figure for the population of the Straits Settlements (excluding Christmas Island and Cocos Island) is 1,038,827.

The following table sets out the estimated population by race, mid-year, 1933, obtained by the balancing equation method (Census + Births - Deaths + Migrational Surplus) :—

Government of	Local Registration Area	Malays	Euro-peans	Eurasians	Chinese	Indians	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Straits Settlements	Singapore							
	Island ..	67,050	7,611	7,051	383,617	40,991	8,180	514,500
	Penang							
	Island ..	40,897	1,251	2,102	113,913	22,616	1,834	182,613
	Province							
	Wellesley	72,684	215	275	41,407	20,125	581	135,287
	Dindings ..	7,855	20	16	6,286	3,874	79	18,130
	Malacca ..	99,070	306	2,070	60,059	18,757	630	180,892
	Labuan ..	5,048	21	36	2,094	139	67	7,405
	Total, S.S. ..	292,604	9,424	11,550	607,376	106,502	11,371	1,038,827

The distribution of the population, on an estimated total of 1,038,827, was as under :—

Singapore	514,500
Penang	182,613
Province Wellesley	135,287
Dindings	18,130
Malacca	180,892
Labuan	7,405
	1,038,827

The deaths registered in the Straits Settlements were classified as follows :—

	Singapore	Penang	Province Wellesley	Dindings	Malacca	Labuan	Total
Died in hospital	3,724	1,011	339	98	492	11	5,675
Certified by private medical practitioners	2,330	718	1	..	266	18	3,333
Certified by registering officers	3,333	1,994	38	1	434	..	5,800
Uncertified	2,193	1,314	3,200	428	3,065	193	10,393
Total	11,580	5,037	3,578	527	4,257	222	25,201

The greatest accuracy in recording the cause of death was attained in Singapore city, where 64.5 per cent. of the deaths were certified by registered medical practitioners.

(b).—General Diseases

Beri-Beri.—The deaths registered as due to beri-beri in the last 10 years numbered :—

Year	Number of deaths	Year	Number of deaths
1924	910	1929	944
1925	973	1930	1,047
1926	1,098	1931	911
1927	1,528	1932	725
1928	1,146	1933	721

Attention was drawn in the 1931 report to the fact that a diminished mortality from beri-beri has coincided in past years with periods of lessened prosperity. The figures for 1932 and 1933 bear out this observation.

Pneumonia.—Pneumonia accounted for 1,992 deaths compared with 1,860 in the previous year. One thousand three hundred and five deaths from this disease occurred within the Singapore city municipal area.

Convulsions.—This term is used to cover a number of incorrectly diagnosed cases. Three thousand nine hundred and eighty-four deaths were recorded in 1933 as due to convulsions as against 3,815 in 1932. This figure represents 15.8% of the total deaths in the Straits Settlements.

Cancer.—A large proportion of the population of British Malaya is of immigrant origin, with a vast turn-over of persons coming and going, giving an average duration of residence of about three years. This immigrant element naturally tends to disturb the sex ratio, on the one hand, and the age distribution, on the other. It accounts for the low average age at death, which is probably between 25 and 30 years. In the Straits Settlements, for example, the proportion of persons 55 and over was only 4.3% for the male population and 5.2% for the female population, while in the state of Kelantan it was 7.3% for males and 7.2% for females. But considering individual races or racial elements, for the Malaysians it is shown that at ages 55 and over the proportion is 5.8% for males and 5.5% for females; for the Chinese this proportion is 4.7% for males and 5.1% for females; for East Indian immigrants from India the proportion was only 1.5% for males and 1.3% for females. Hence, the conclusion that the age distribution of male Chinese and Indians, who together constitute 59.7% of the male population, is mainly determined not by natural causes but by the age distribution of immigrants.

CANCER MORTALITY IN SINGAPORE, 1926—1931

	Buccal Cavity	Stomach Etc.	Intestines, Etc.	Female Genitals	Breast	Skin	Other & N.S.	Total	Rate
MALES									
Europeans ..	4	3	2	..	..	2	4	15	62.9
Eurasians ..	..	6	..	..	..	..	2	8	47.5
Chinese ..	19	411	31	..	..	11	114	586	47.5
Malays ..	1	14	2	..	..	1	5	23	17.0
Indians ..	8	25	3	..	..	1	11	48	23.9
Others ..	1	6	..	..	..	..	2	9	35.2
Total ..	33	465	38	..	..	15	138	689	42.1
Per cent ...	4.8	67.5	5.5	..	..	2.2	20.0	100.0	
Rate ..	2.0	28.4	2.3	..	..	0.9	8.4	42.1	
FEMALES									
Europeans ..	..	2	1	2	2	1	1	9	68.3
Eurasians ..	3	4	3	2	3	..	4	19	106.7
Chinese ..	11	72	8	78	33	5	38	245	35.0
Malays ..	2	15	..	7	10	1	..	35	31.7
Indians ..	2	8	1	4	4	..	..	19	52.7
Others ..	..	4	..	4	..	1	3	12	65.8
Total ..	18	105	13	97	52	8	46	339	37.8
Per cent ..	5.3	31.0	3.8	28.6	15.3	2.4	13.6	100.0	
Rate ..	2.0	11.7	1.5	10.8	5.8	0.9	5.1	37.8	
PERSONS									
Europeans ..	4	5	3	2	2	3	5	24	64.8
Eurasians ..	3	10	3	2	3	..	6	27	77.9
Chinese ..	30	483	39	78	33	16	152	831	43.0
Malays ..	3	29	2	7	10	2	5	58	23.6
Indians ..	10	33	4	4	4	1	11	67	23.3
Others ..	1	10	..	4	..	1	5	21	48.0
Total ..	51	570	51	97	52	23	184	1,028	40.6
Per cent ..	5.0	55.4	5.0	9.4	5.1	2.2	17.9	100.0	
Rate ..	2.0	22.5	2.0	3.8	2.1	0.9	7.3	40.6	

It is shown that the average death rate from cancer in Singapore for this period was 40.6 per 100,000 or respectively 42.1 for males and 37.8 for females. This rate compared with a rate of 43.1 in 1929 for Colombo, Ceylon, 43.6 in 1930 for Rio de Janeiro, 51.4 in 1930 for Naples and 51.8 in 1930 for Sao Paulo, Brazil. The rate therefore bears intrinsic evidence of reasonable trustworthiness and completeness, being measurably above the rate for Malacca, Straits Settlements, of 7.5, Penang, S.S., 8.3, Bangkok, Siam, 13.0, Havana, 13.0, and Bombay, 13.2. It is considerably below the excessive rate for London of 148.5, Manchester, England, 149.0, Paris, 149.7, Berlin, 165.1 Brussels, 175.6, and Vienna, 208.4.

On account of the predominating Chinese type of the population the rate, of course, is affected by racial distribution. For all the other elements the number of deaths is relatively small and the rates are conjectural. For the Chinese alone the rate for males was 47.5 and for females 35.0 and for both sexes combined 42.0.

I am indebted for these observations to F. L. HOFFMAN, LL.D., Consulting Statistician, Newark, N.J.

CANCER RETURNS, STRAITS SETTLEMENTS

	Cases	Deaths
Cancer or other malignant tumours of the digestive organs and peritoneum :—		
(a) Stomach	51	31
(b) Liver	61	34
(c) Other digestive organs	66	27
Cancer or other malignant tumours respiratory organs	27	11
Cancer or other malignant tumours of other female genital organs	24	5
Cancer or other malignant tumours of the uterus	43	3
Cancer or other malignant tumours of the breast	18	6
Cancer or other malignant tumours of the male genital urinary organs	24	5
Cancer or other malignant tumours of the skin	59	8
Cancer or other malignant tumours of the organs not specified	97	24
	<u>470</u>	<u>154</u>

(c).—Dangerous Infectious Diseases

Plague.—One fatal case of plague occurred in the Straits Settlements during the year.

Cholera.—One case of cholera occurred.

Small-pox.—There were four cases of small-pox with three deaths.

Cerebro-spinal fever.—There were four cases of which three died. One of the three deaths was an imported fatal case.

(d).—Other Infectious Disease

Tuberculosis.—Two thousand one hundred and sixty-nine deaths were reported as due to pulmonary tuberculosis, of these 1,279 occurred in Singapore city. While it must be admitted that very many cases of pulmonary tuberculosis escape detection, available statistics tend to show that tuberculosis is not on the increase. Housing improvement schemes and town planning schemes which are now in progress will it is hoped give a downward trend to the mortality curve for this disease. Special accommodation is provided in each Government hospital for tuberculous cases. At the General Hospital, Singapore, special treatment is available and similar accommodation is provided for in the new hospitals at Penang and Malacca. Tuberculosis wards at out-station hospitals are almost wholly occupied by advanced and hopeless cases.

The following table show the general downward trend of the mortality :—

	1931	1932	1933
Estimated population of the Straits Settlements	1,118,511	1,147,205	1,038,827
Total deaths from all causes	27,369	24,541	25,201
Death-rate per thousand	24.47	21.39	24.26
Total deaths from pulmonary tuberculosis	2,587	2,168	2,169
Pulmonary tuberculosis death-rate per thousand	2.31	1.89	2.09
Year	Deaths from Tuberculosis in the Colony	Deaths from Tuberculosis in Singapore city	
1927	2,903	1,523	
1928	2,727	1,411	
1929	2,710	1,500	
1930	2,795	1,622	
1931	2,587	1,377	
1932	2,168	1,088	
1933	2,169	1,189	

A comparison of mortality from pulmonary tuberculosis in urban and rural areas is shown by the following figures :—

	Estimated population	Death-rate from all diseases per thousand	No. of deaths from Tuberculosis	Tuberculosis death-rate per thousand
Singapore Municipality ...	477,380	19.66	1,189	} Cities 2.35
George Town (Penang) ...	130,355	20.33	253	
Malacca Municipality ...	40,200	20.64	85	
Rural areas of Colony ...	390,892	20.66	980	Rural areas 2.51

(c) Malaria

The years 1931 and 1932 were considered remarkable for the large decrease in the number of deaths attributed to malaria and fever unspecified, but the figures for the year 1933 still show a decrease.

The figures for the last eight years show a progressive decline :—

Year	Malaria	Fever unspecified	Total
1926	6,452	2,398	8,850
1927	6,283	2,161	8,444
1928	5,798	1,636	7,434
1929	4,648	1,764	6,412
1930	5,018	1,995	7,013
1931	3,506	1,513	5,019
1932	2,601	2,051	4,652
1933	1,747	2,821	4,568

This progressive decline may be ascribed to several factors. In the first place, during recent years the incidence of malaria in Malaya has been comparatively light, for reasons not yet ascertained. In the second place many sick and debilitated persons have left the country. There has been little immigration of non-immune persons, and there has been little movement of labour within the Colony; lastly, it is to be hoped that some of the reduction may be ascribed to greater efficiency of anti-malarial measures. No relaxation of anti-malarial measures can be allowed, since conditions cannot be expected always to remain as at present. With a renewal of trade and a return to more normal conditions on estates and mines there will be a large influx of non-immune labour into the country, and agricultural enterprise will necessitate the opening up of new land; these two factors, combined with the free movement of labour from place to place, will surely tend to an increase in the number of malarial cases. The usual periodical increase in malaria generally is also to be anticipated.

(f).—Bowel Diseases

Dysentery.—There were 473 deaths compared with 541 in the previous year; of the deaths occurring in hospital 49 were ascribed to amoebic dysentery, 66 to bacillary dysentery and 21 to undefined dysentery.

Diarrhoea and enteritis were recorded as the causes of 1,364 deaths in 1933, compared with 1,342 deaths in 1932.

Enteric Fever.—One hundred and twenty-two deaths were recorded as due to enteric fever; 87 of these deaths occurred in the Settlement of Singapore, 255 (7 paratyphoid) cases were notified to the Municipality of Singapore. The root cause of enteric fever in the towns is the itinerant hawker of foodstuffs.

In 1932 His Excellency the Governor, Straits Settlements, appointed a Committee to investigate the hawker question in Singapore. If and when the recommendations of this Committee are put into operation it is hoped that a greater measure of control over hawkers will result in a decrease of enteric fever.

Eighty-four cases of typhoid fever were notified in school children which were thoroughly investigated by the Municipal Health Authorities, Singapore.

To quote from the Annual Report for the year 1933 of the Health Department, Municipality of Singapore :—

“One school, St. Joseph's, had 19 cases in April, May and June. The houses of all these pupils were visited but in no instance was a second case found in a house, nor was there any history suggestive of a recent attack of the disease in any other member of the family. As the houses of the pupils were scattered all over the town this immediately suggested the source of infection as being at the school. With the added knowledge that most of the children obtained their lunch from food-hawkers who frequented the school compound, the field of investigation was further narrowed, and our attention was naturally focussed on these hawkers. Accordingly 33 hawkers selling at this school were admitted to Middleton Hospital and examined as to their “carrier” state. One was found to be excreting the typhoid organism. He himself stated that he sold mainly at this school but, to clinch matters, the affected children were shown the photographs of several hawkers, and 8 out of 13 invalids were emphatic in stating that they had bought food from the “carrier” within a month of the onset of their illness.

It is also worthy of note that 10 of the 13 invalids also recognised an iced water seller as one from whom they had bought cold drinks. And though he was not found infected it is significant that he lived with 29 other

food-hawkers in a house in Bencoolen Street, and, of these one was the "carrier".

Further, of the 30 hawkers in this house, 5, of whom the carrier was one, sold at St. Joseph's School with its 19 cases of typhoid, 2 sold at the Convent which had 6 cases in the same period, 2 sold at the Le Mercier school which had one case, and 4 sold at the Methodist Girls' School which had 8 cases.

When one realises that in addition to the 30 hawkers there were 55 other occupants of the house in Bencoolen Street and that the school children formed but a small part of the hawkers' clientele one trembles to think of the many more cases of unrecognised typhoid this one "carrier" most likely caused."

A licensed system of hawking such as exists in the large towns of Malaya from the health point of view is a menace to the public. It seems reasonable to advocate the imposition of hardship on hawkers by restriction of licences rather than to disseminate death and disease.

(g).—Diphtheria

Each year shows an increasing number of deaths under this heading. The increase in the main is due to more accurate diagnosis but it is probable that this disease is definitely on the increase.

Year	Deaths in the Colony	Cases notified in Singapore city
1926	15	46
1927	16	29
1928	21	59
1929	31	57
1930	31	63
1931	43	65
1932	56	124
1933	76	244

(h).—Venereal Diseases

There was a decrease in the total number of cases of venereal disease treated at Government clinics and dispensaries, the number of new cases being 23,256 in 1933, against 27,746 in 1932. The total number of attendances was 227,095 during 1933, compared with 300,545 during 1932.

(For details of anti-venereal work see Appendix G).

(i).—Leprosy

Reports on the Leper Settlements are attached as Appendix A and B.

The total number of new cases admitted during the year was 388 as compared with 271 during 1932 and 281 during 1931. This increase in admission is due to the inclusion of 101 cases transferred from the Sungei Buloh Leper Settlement, Federated Malay States, to relieve overcrowding there. The following tables shows the figures for the various Leper Settlements:—

	Remaining on 31-12-32	Admitted	Died	Absconded	Transferred	Discharged	Remaining on 31-12-33
Men { Pulau Jerejak, Penang	765	* 299	84	18	1	67	894
Men { Singapore	71	141	7	28	† 85	1	91
Women { Penang	67	13	12	1	5	3	59
Women { Singapore	102	36	3	5	..	11	119
Total ..	1,005	489	106	52	91	82	1,163

(j).—Helminthic Diseases

Ankylostomiasis.—During the year 1,305 cases of ankylostomiasis were admitted and treated in hospital; of these 29 died.

This disease is widespread in Malaya and gives rise to a lowered standard of health amongst the rural population and labouring classes.

Ascariasis.—Infestation with round worms is frequent in the Asiatic population.

Taeniasis.—This condition is rare in Malaya.

* Includes 85 transferred from Singapore.

† Transferred to Leper Settlement, Pulau Jerejak.

(k).—Improvement of Public Health

Two graphs and three diagrams numbered I, II, III, IV and V are enclosed. The graphs demonstrate the improvement in public health during the last generation.

Graph No. I shows the mean monthly death-rate in Singapore from all causes in the decennial periods 1902—1912 and 1913—1922 and 1923—1932 and 1933.

The diagrams are designed to show the amount of disease and of death that is possibly preventable.

(l).—Vital Statistics

Under heading Table III, pages 92 to 94 the following ten tables are appended :—

Table III A.—Estimated population with birth and death-rates for the years 1932 and 1933.

Table III B.—Quarterly death-rates for various parts of the Colony during the past three years.

Table III C.—Population estimated racially and collectively of the Straits Settlements for the years 1933, 1932 and 1931.

Table III D.—Births registered in the Straits Settlements during 1933 and their ratio per mille of population.

Table III E.—Births registered in the Straits Settlements during 1933 according to nationalities.

Table III F.—Deaths registered in the Straits Settlements according to nationalities.

Table III G.—Deaths registered in the Straits Settlements during 1933 under different groups of ages.

Table III H.—Table showing the infantile mortality (under one year) in the Straits Settlements including children born elsewhere.

Table III I.—Table showing the infantile mortality (under one year) in the Straits Settlements, according to nationalities, excluding children born elsewhere.

Table III J.—Deaths registered in the Straits Settlements as regards certificates in the year 1933.

The number of births registered throughout the Straits Settlements during the year 1933 was 42,538 (males 22,231 and females 20,307) as against 41,106 (males 21,196 and females 19,910) in the previous year; this represents a crude birth-rate of 40.95 per mille persons living as compared with 35.83 in 1932 and 36.98 in 1931.

In every 100 births registered, there were 52.26 males and 47.74 females.

One thousand four hundred and eight still-births were registered in 1933 as compared with 1,460 in the previous year. The percentage to those born alive was 3.31 as against 3.55 in 1932 and 3.72 in 1931.

The highest birth-rate according to nationalities was 43.21 per mille of population amongst the Chinese, the Malays coming next with a ratio of 39.86 per mille of population *vide* Table III E.

The deaths from all causes in 1933 were 25,201 (males 15,004 and females 10,197) as against 24,541 (males 14,773 and females 9,768) in the previous year.

The average death-rate for the last 10 years was 27.23 per mille.

Death-rates for the last 33 years are :—

Year	Ratio per mille	Year	Ratio per mille
1901 (Census)	... 39.85	1918	... 43.85†
1902	... 42.96	1919	... 33.04
1903	... 39.49	1920	... 33.20
1904	... 39.00	1921 (Census)	... 31.54
1905	... 40.51	1922	... 30.68
1906	... 37.82	1923	... 27.80
1907	... 39.07	1924	... 27.42
1908	... 43.06	1925	... 27.26
1909	... 37.58	1926	... 31.81
1910	... 41.88	1927	... 33.55
1911 (Census)	... 46.46	1928	... 28.76
1912	... 39.01	1929	... 26.10
1913	... 34.93	1930	... 27.32
1914	... 34.13	1931 (Census)	... 24.47
1915	... 29.15*	1932	... 21.39*
1916	... 30.70*	1933	... 24.26
1917	... 36.98		

* Several thousands of decrepit Chinese were repatriated in 1915 and 1916 as a war measure, and in 1932 on account of economic depression.

† The Influenza pandemic occurred in 1918.

The Municipal Health Officer, Singapore, reports the death-rate for the city as 19.66 per mille against 20.12 and 25.20 in the two previous years. Two hundred and twenty persons died who had been less than three months resident in Singapore, deducting these the death-rate is reduced to 19.20 per mille.

The highest racial death-rate in the Colony was amongst Malays with a ratio of 26.19 per mille of population, the Chinese being next with a ratio of 24.19 per mille of population.

It is always difficult to assess the true infantile mortality. In illustration of this, the figures for the Singapore Municipal area where registration is more accurate than elsewhere, are quoted. Sixteen thousand eight hundred and eighty-one children were born in this area, a birth-rate of 35.36 per mille; infantile deaths number 2,980 a rate of 176.5 per 1,000 births.

The infantile mortality rate for the Straits Settlements is 168.04 per mille.

(m).—Sickness, Invaliding and Deaths among European and non-European Officials

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

	1931	1932	1933
1. Total number of European officials on the establishment ...	2,089	2,168	2,182
2. Average number resident in Colony ...	1,993.12	2,041.84	2,061.47
3. Total number on sick list ...	439	343	345
4. Total number of days on sick list ...	4,662.5	3,187	3,118
5. Total number invalided ...	21	21	20
6. Total deaths ...	11	7	3
7. Total deaths in Colony ...	7	5	2
8. Average daily number on sick list ...	12.77	8.71	8.54
9. Average number of days on sick list ...	10.62	9.29	9.03
10. Percentage of deaths to number resident ...	.50	.34	.14
11. Percentage of sick to the average resident during the year ...	17.26	16.79	16.73

Table showing the sick, invaliding and deaths of non-European officials :—

	1931	1932	1933
1. Total number on the establishment ...	11,707	11,600	12,971
2. Average number resident ...	11,026.1	10,930.87	12,476.74
3. Total number on sick list ...	8,190	8,376	6,655
4. Total number of days on sick list ...	50,102	55,164	47,210
5. Total number invalided ...	267	249	232
6. Total deaths ...	117	59	92
7. Average daily number on sick list ...	137.27	150.72	129.34
8. Average number of days on sick list ...	6.11	6.59	7.09
9. Percentage of deaths to number resident ...	.64	.53	.73
10. Percentage of sick to number resident ...	43.28	76.63	53.33

III.—VACCINATIONS

During the year 65,644 vaccinations and re-vaccinations were performed in the Straits Settlements. The results were as follows :—

Perfect	...	...	...	...	41,389
Modified	...	...	...	...	1,316
Failed	...	...	...	...	2,872
Not seen	...	...	...	...	20,067
					65,644

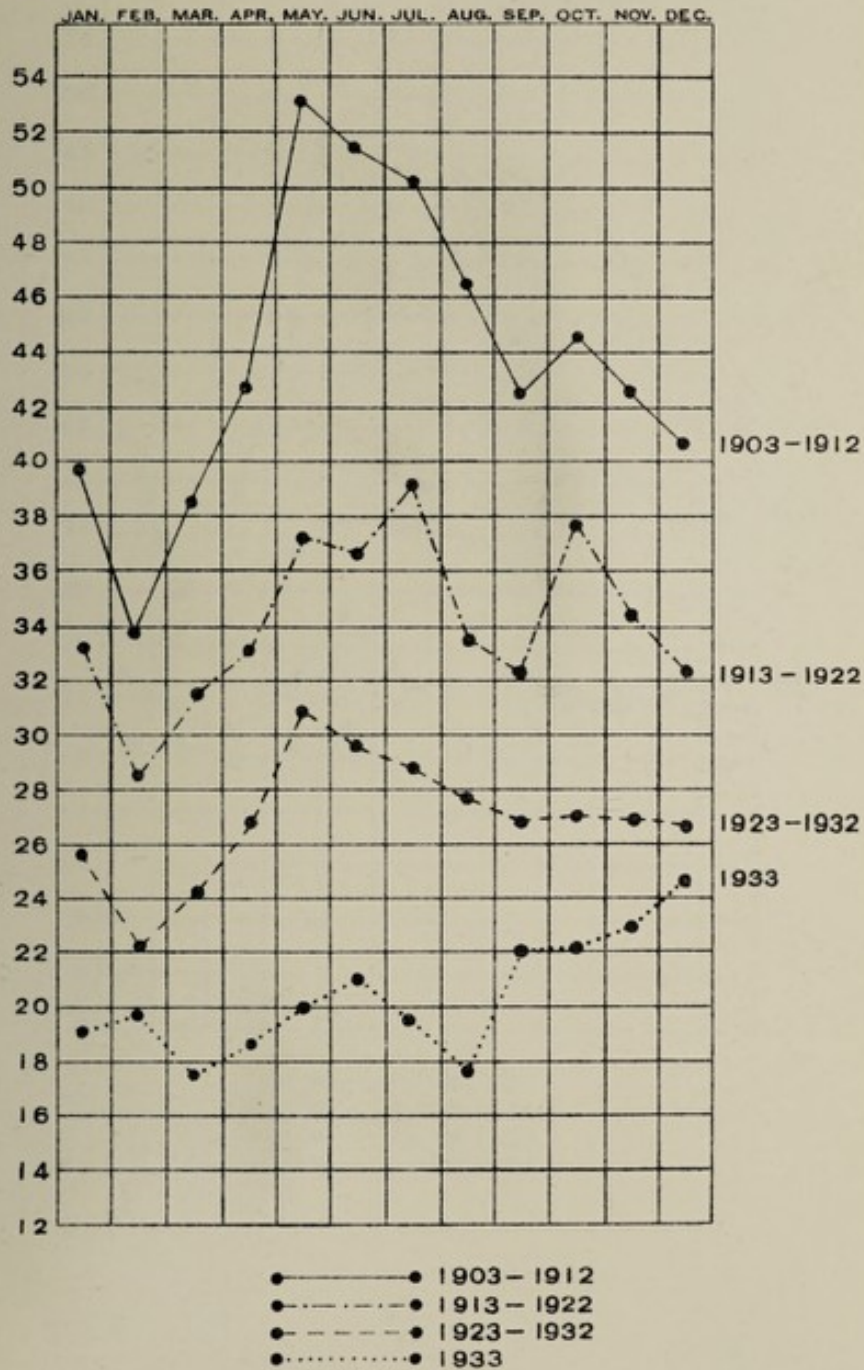
The number of births registered throughout the Straits Settlements was 42,538. A thorough programme of vaccination is carried out in the Straits Settlements, and the number of those who avoid vaccination is negligible.

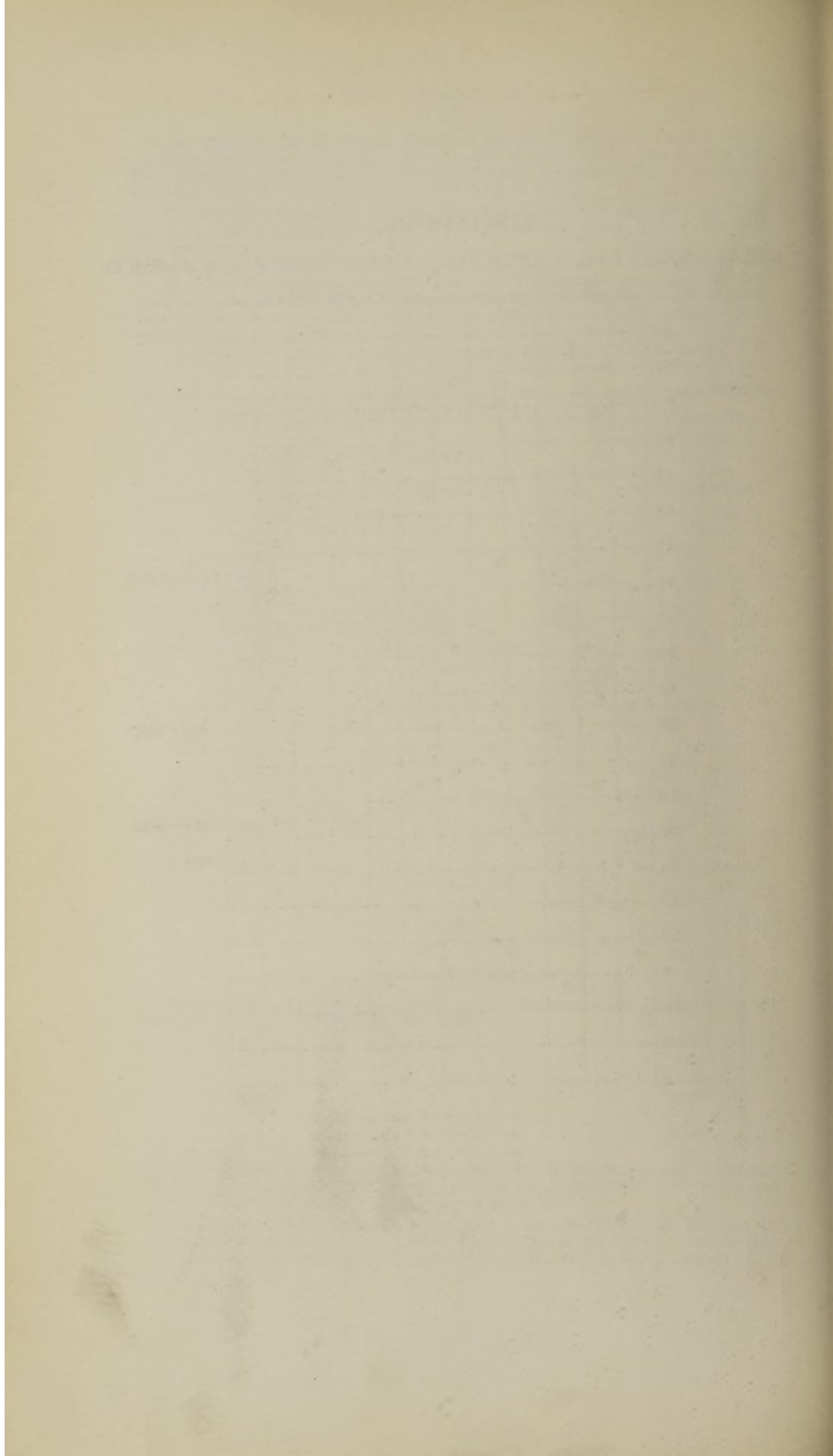
The increase in the number 'not seen' can be accounted for by the fact that the majority occur within the group vaccinated at the Quarantine Station, Pulau Jerejak, Penang where passengers are discharged before there is time to obtain a record of the result.

(1)

SINGAPORE

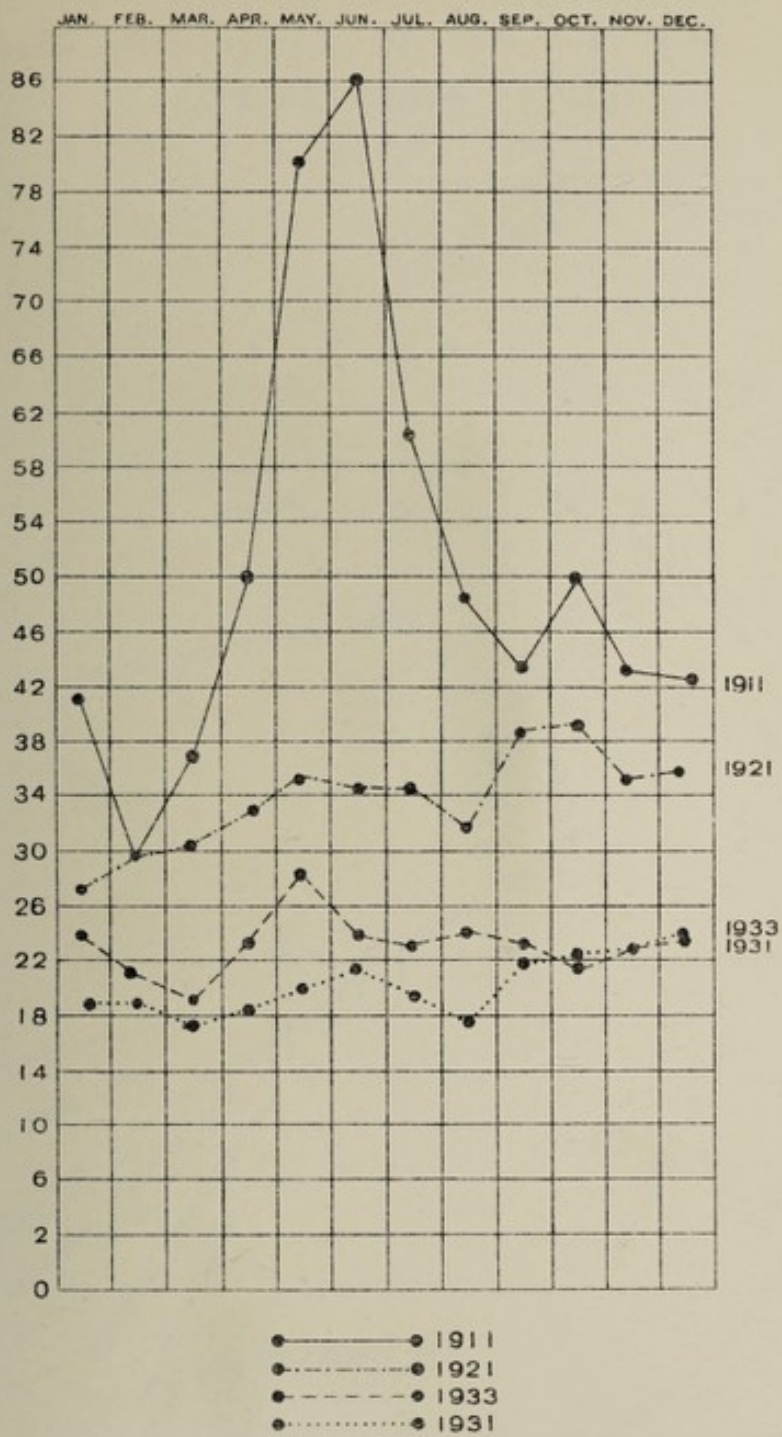
MEAN MONTHLY DEATH RATE FROM ALL CAUSES

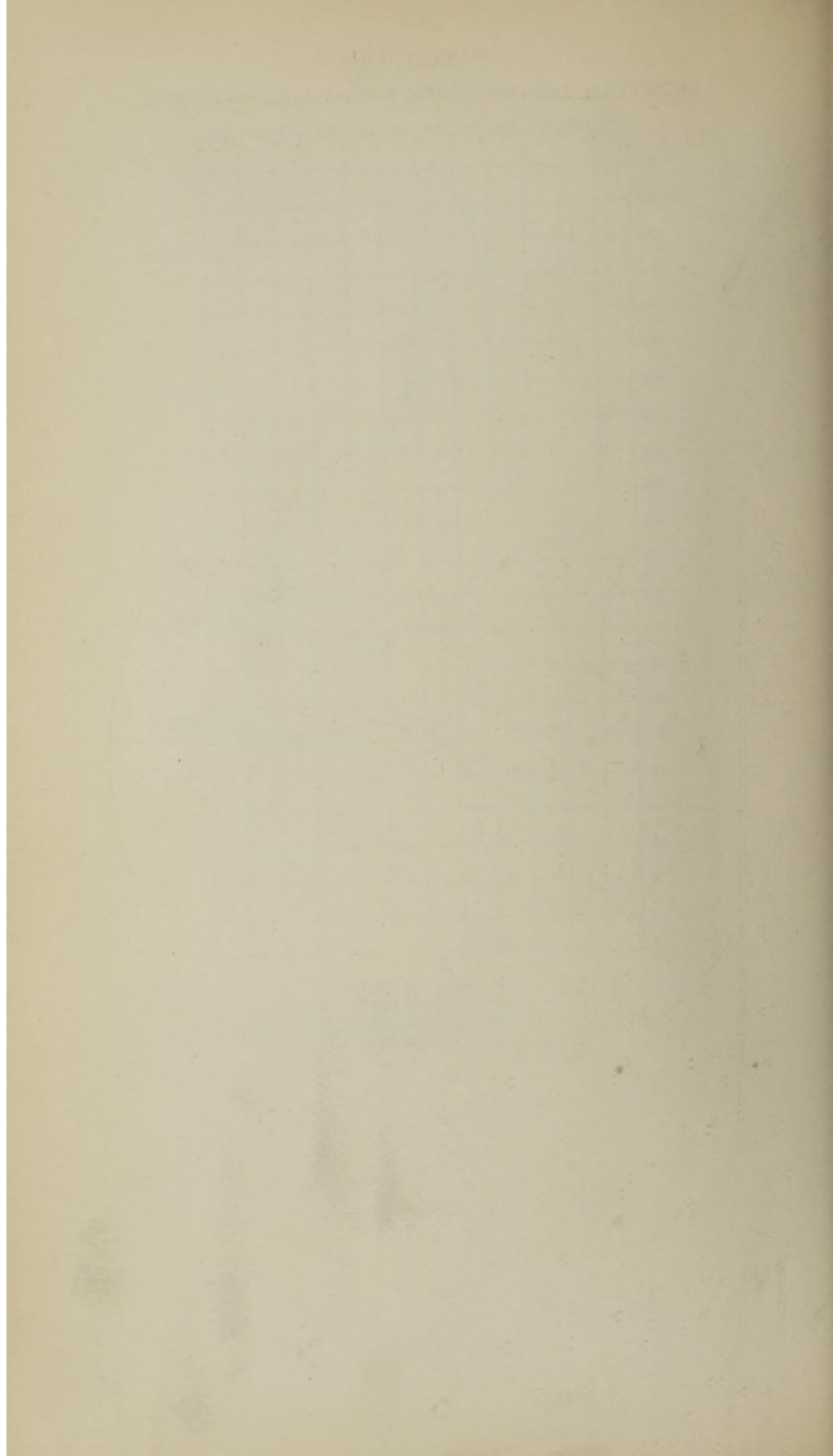




SINGAPORE

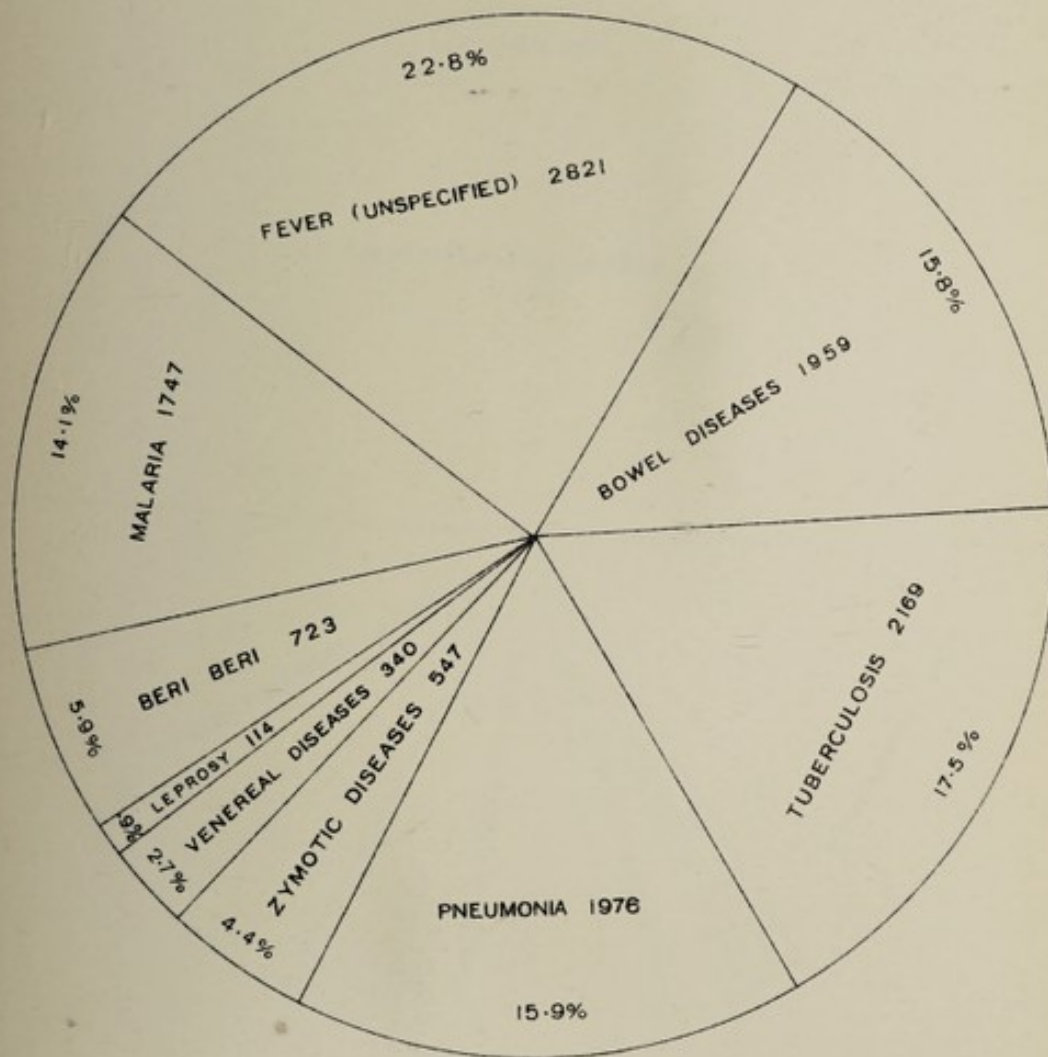
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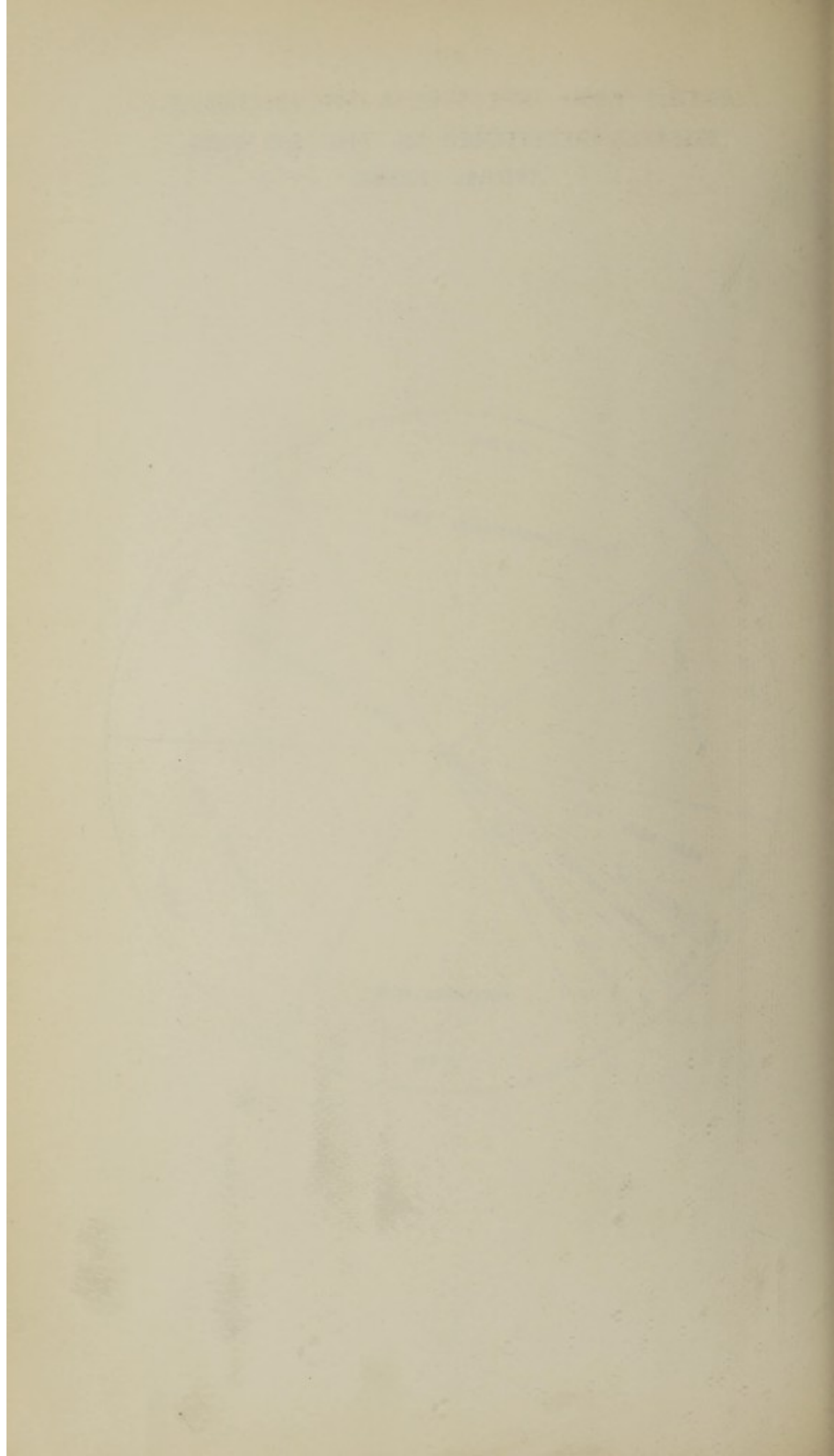




(III)

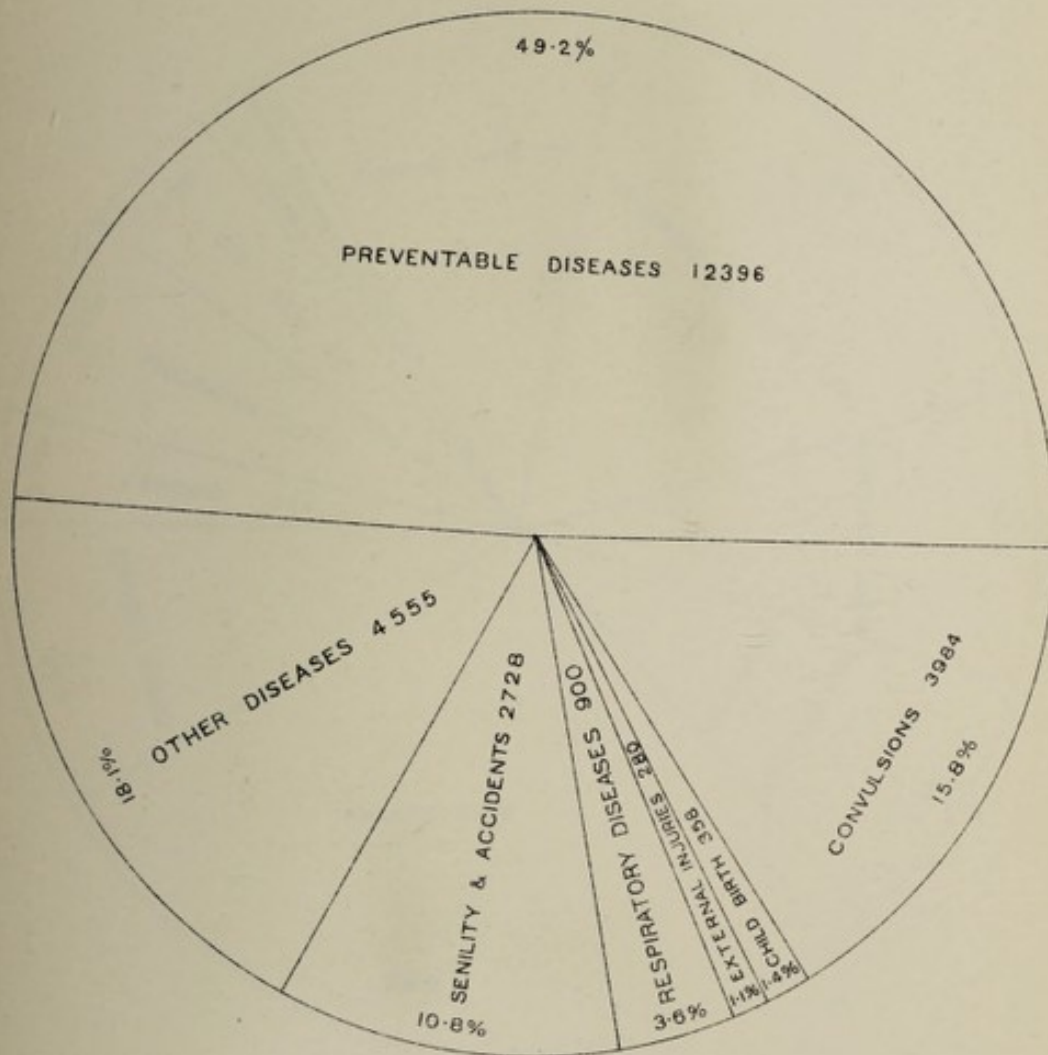
DEATHS FROM INFECTIVE & PREVENTABLE
DISEASES REGISTERED IN THE S.S. 1933
TOTAL 12396

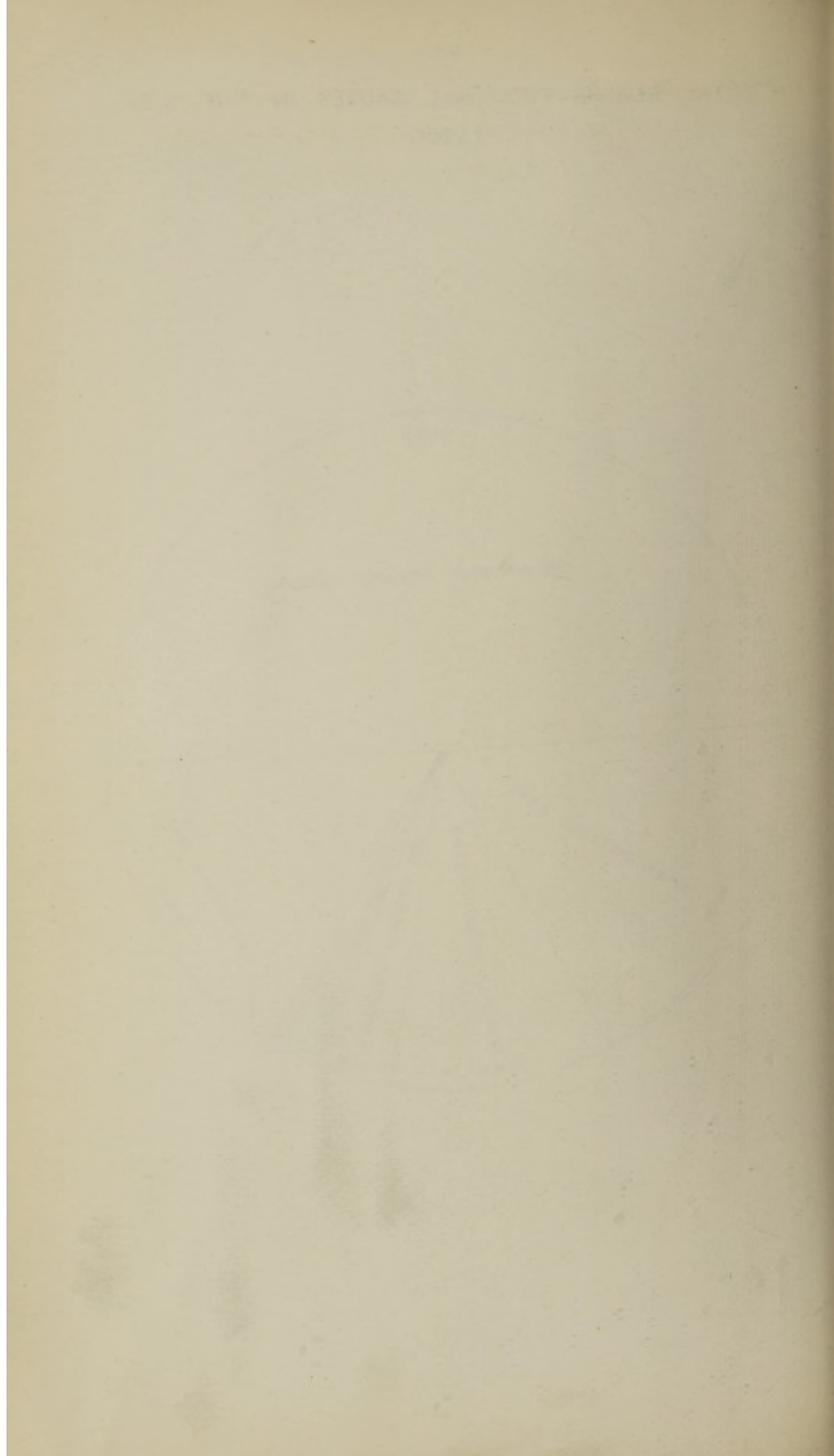




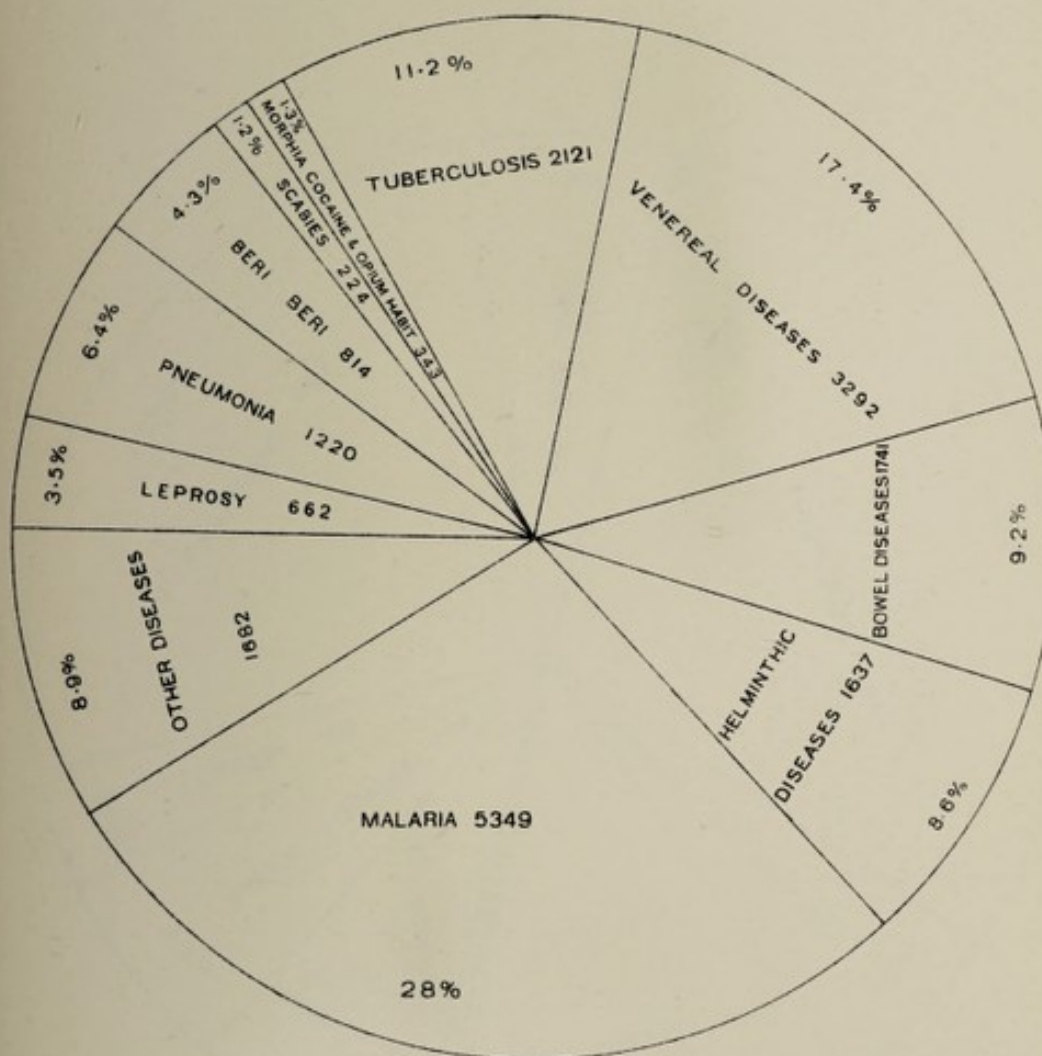
(IV)

TOTAL DEATHS FROM ALL CAUSES IN THE S.S.
25201





INFECTIVE AND PREVENTABLE DISEASES ADMITTED TO
THE S.S. GOVERNMENT HOSPITALS DURING 1933
TOTAL CASES 19085

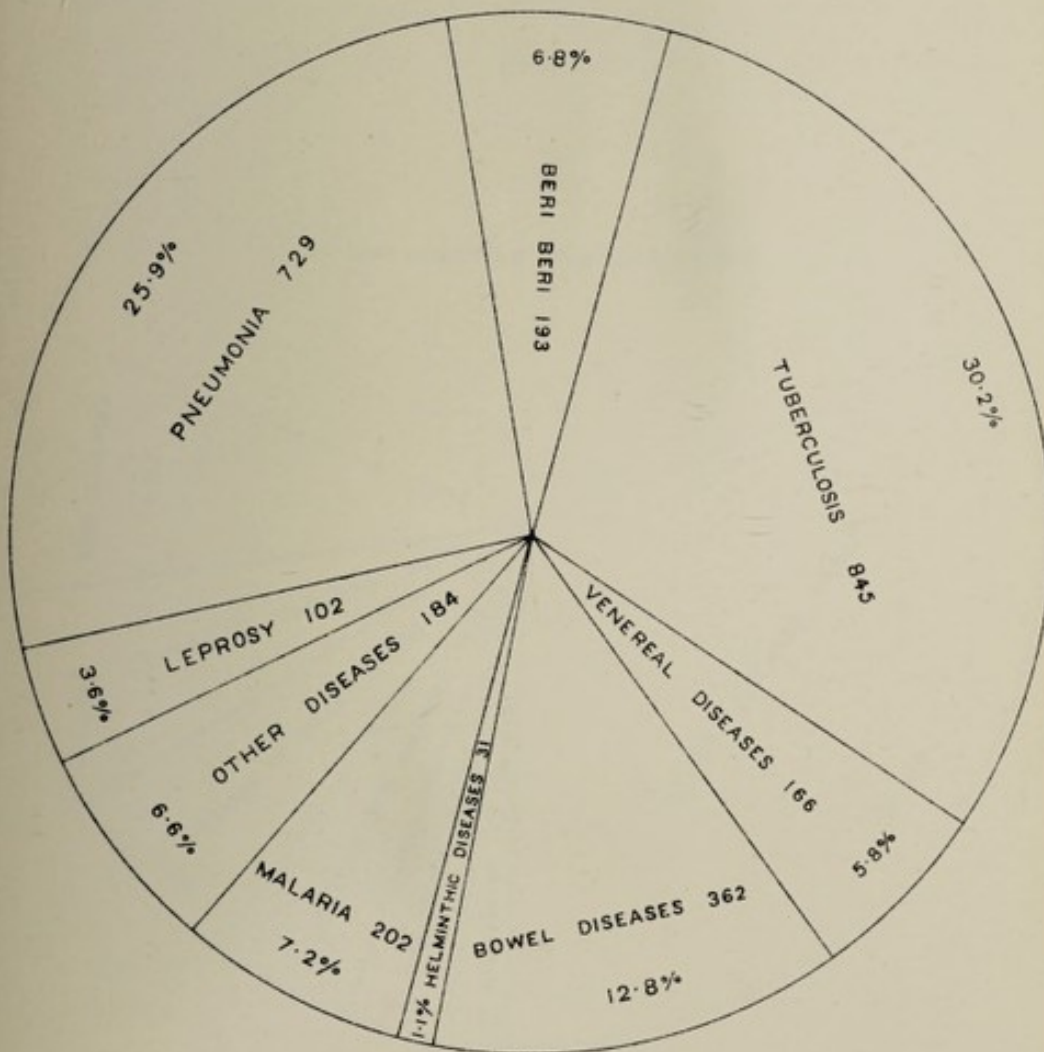


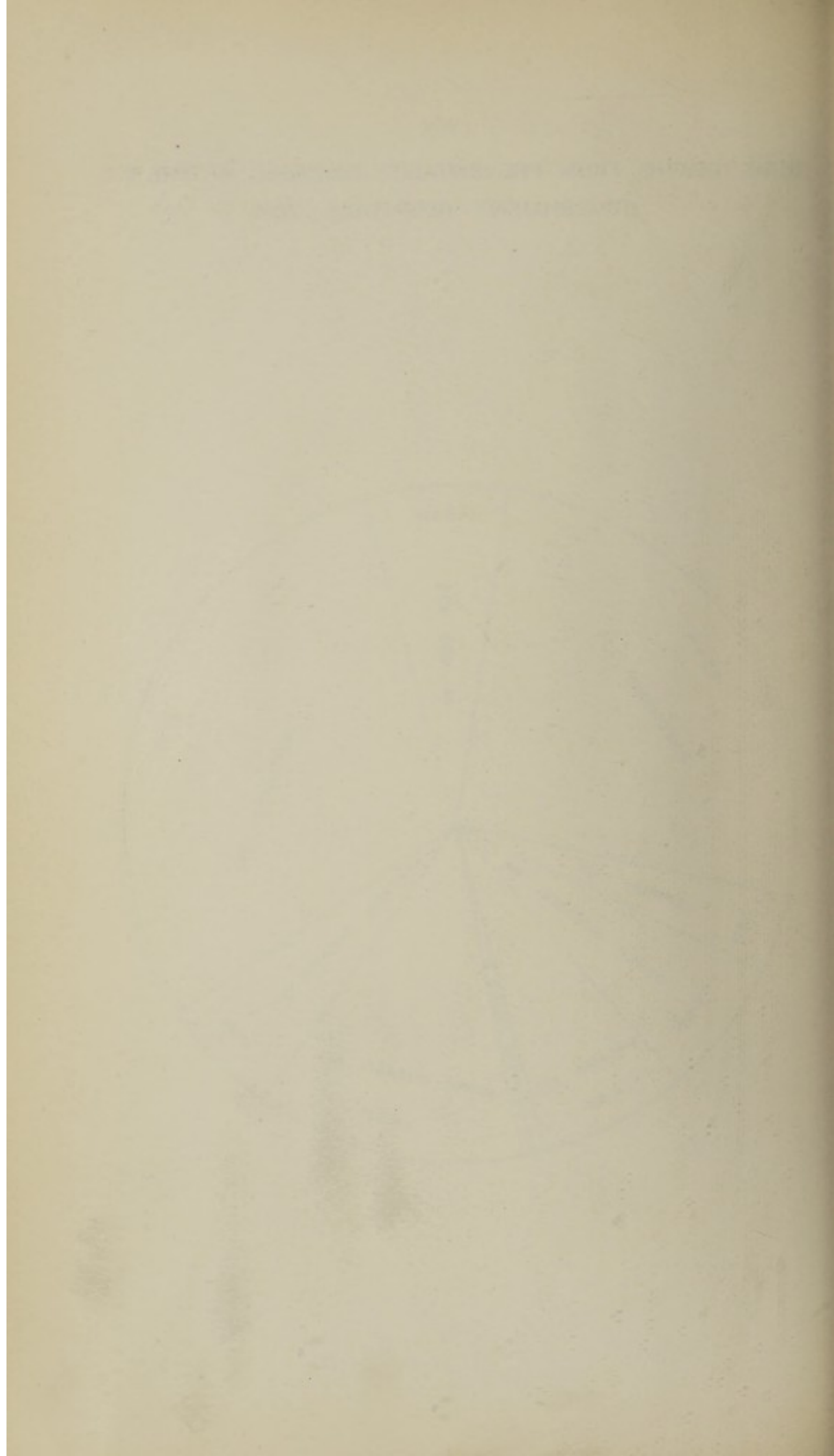
THE NATIONAL BUREAU OF INVESTIGATION
UNITED STATES DEPARTMENT OF JUSTICE
WASHINGTON, D. C. 20535

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(VI)

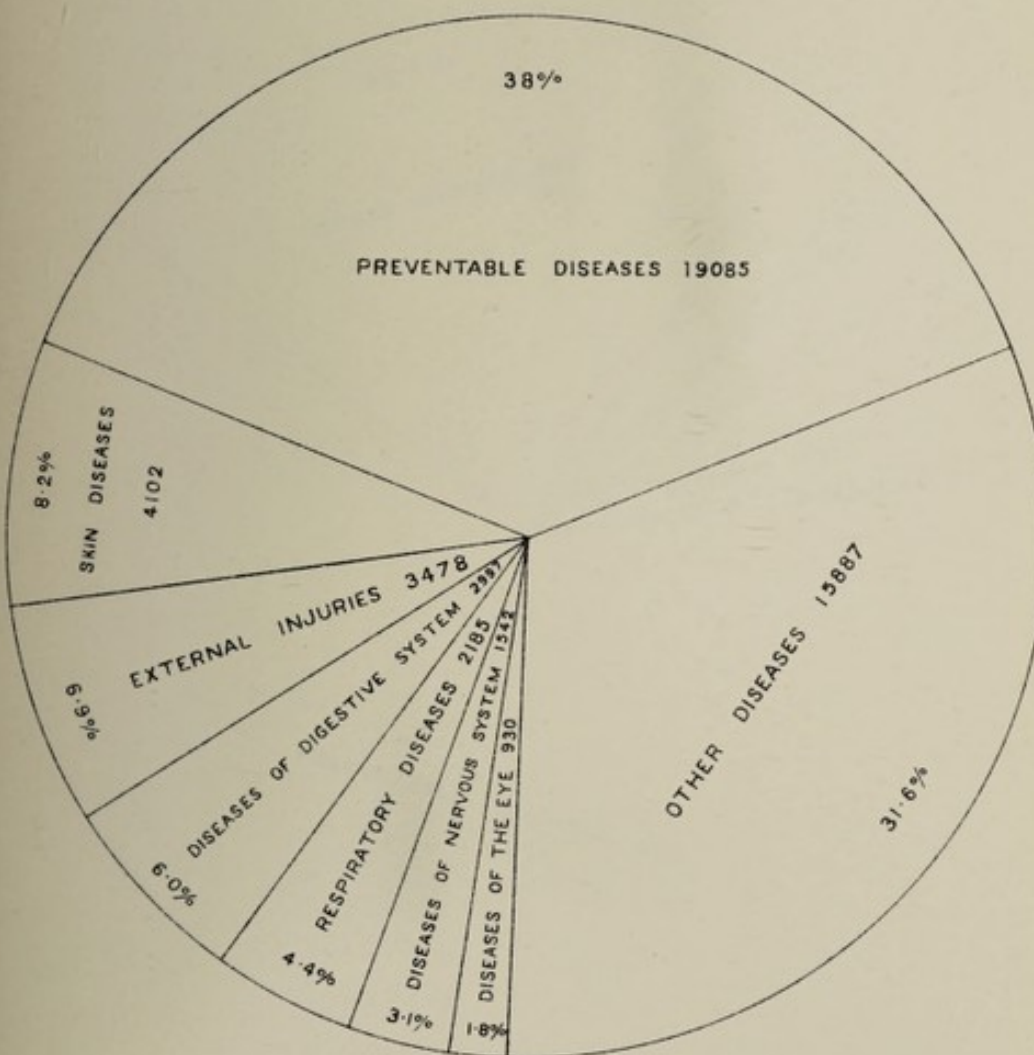
TOTAL DEATHS FROM PREVENTABLE DISEASES IN THE S.S.
GOVERNMENT HOSPITALS 2814





(VII)

GENERAL SYSTEMIC AND PREVENTABLE DISEASES
ADMITTED TO S.S. GOVT. HOSPITALS DURING 1933
TOTAL CASES 50206



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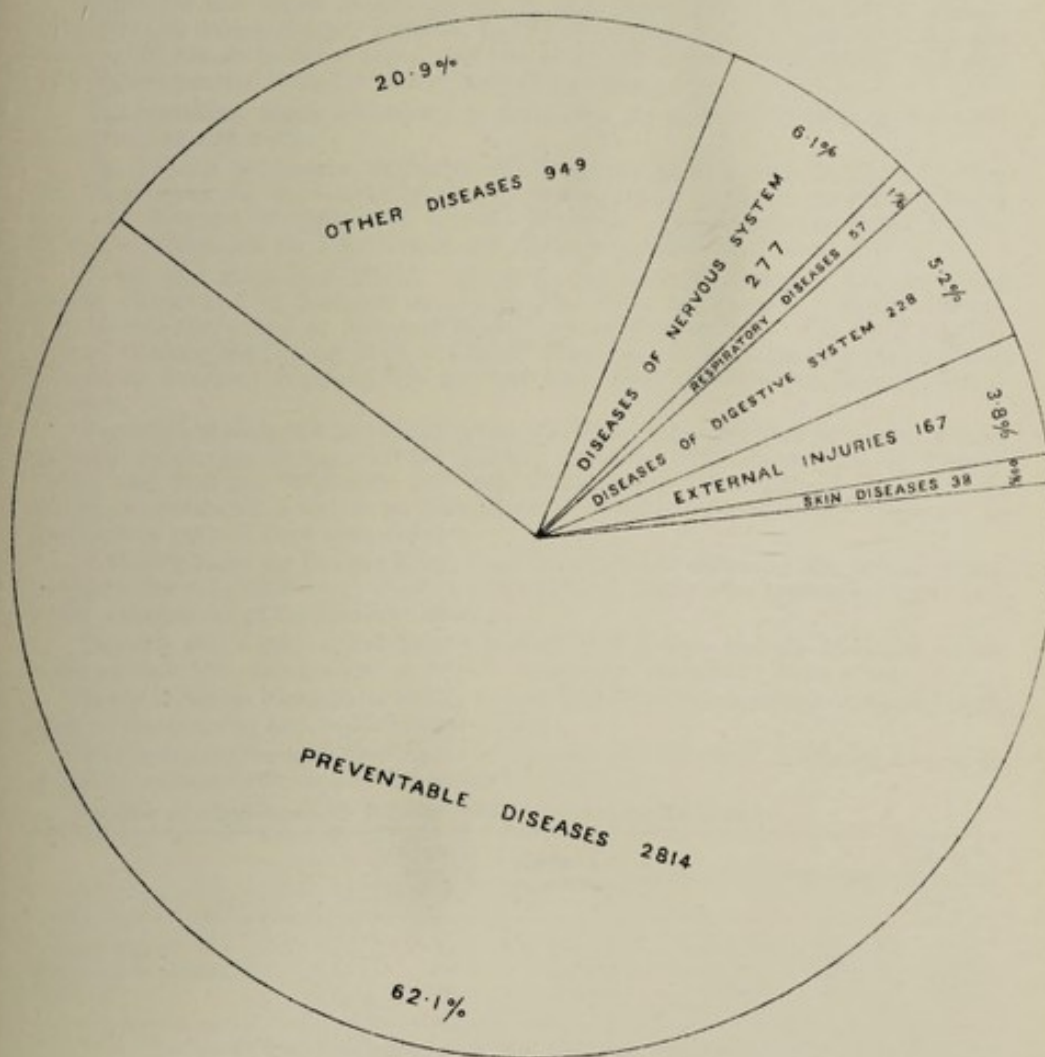
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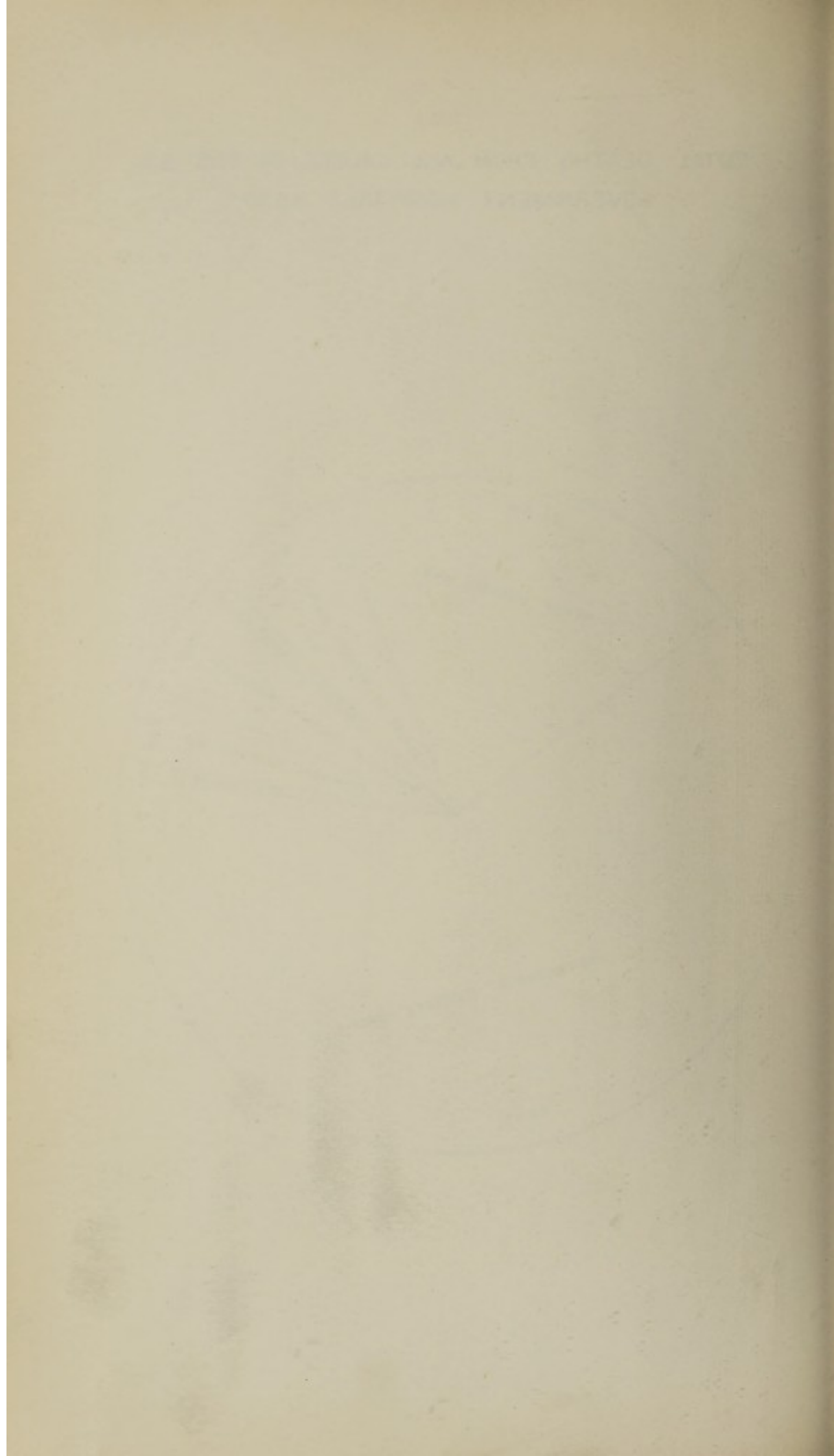
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(VIII)

TOTAL DEATHS FROM ALL CAUSES IN THE S.S.
GOVERNMENT HOSPITALS 4530





IV.—HYGIENE AND SANITATION

A.—Organisation of the Health Branch

The Director of Medical and Health Services is the head of the Health Branch of the Straits Settlements.

The Chief Health Officer, Singapore, is responsible for the health of the port and the rural areas of the island, and also for school inspection both within and without the Municipal areas.

The Chief Health Officer's staff consists of one Rural Health Officer, one Deputy Rural Health Officer, one Assistant Health Officer (Schools), one Lady Medical Officer (Schools), one Port Health Officer, one Assistant Port Health Officer, one Health Officer, Quarantine Station.

There is one European Chief Sanitary Inspector for the Rural areas of Singapore. Under him are a staff of locally trained sanitary officers.

The Rural areas of Singapore are divided into five sanitary districts, with one Sanitary Inspector in each district.

The Health Office is the centre from which the district health propaganda and welfare work are developed. Wherever there is a district dispensary, the office of the Sanitary Inspector is usually situated either in the same building or nearby.

There are two Rural Health Sisters in Singapore, under whom locally trained district health nurses conduct maternal and child welfare clinics, make house to house visits, visit schools in the villages, and also carry out a certain amount of maternity work in conjunction with the locally trained midwives.

The travelling motor dispensary in Singapore, in addition to treating the sick, co-operates in this work.

The Penang Settlement, excluding the Municipality of George Town, is divided into three areas for the administration of public health measures (i) Penang Rural Area, (ii) Province Wellesley and (iii) the Dindings. In addition the Senior Health Officer is responsible for Port Health and Quarantine work of Penang port.

Under him there is a Health Officer for Province Wellesley, a Deputy Rural Health Officer and an Assistant School Health Officer for Penang, a Senior Deputy Port Health Officer and an Assistant Health Officer (Quarantine). The Lady Medical Officer, Penang, the Deputy Medical Officer, Dindings and the three Assistant Medical Officers in Province Wellesley are also part-time Health Officers in their respective districts.

There is a European Chief Sanitary Inspector and there is a staff of locally trained Sanitary Inspectors in each of the sanitary districts. The rural areas of Penang Island and Province Wellesley are each divided into four sanitary districts; the Dindings constitutes a single sanitary district. There is one Sanitary Inspector in residence in each of these nine districts.

A Health Sister for Penang Rural Area has charge of maternity and infant welfare work; in Province Wellesley, there is a Senior Staff Nurse who undertakes this work under supervision of the Health Officer.

There is also a staff of five locally trained Staff Nurses and six Midwives whose work extends into villages and to remote kampongs throughout these areas.

In the Dindings there is one locally trained Midwife who attends to maternity work both in the hospital and neighbouring villages.

The travelling motor dispensaries in Penang and Province Wellesley co-operate in public welfare work, in addition to treating the sick.

Details of rural areas in Penang Settlement are as follows :—

	Area in square miles	Estimated population	Birth-rate	Death-rate	Infantile Mortality Rate
Penang Rural	98½	52,258	34·31	24·60	151·70
Province Wellesley	280	143,887	36·88	24·87	144·36
Dindings	183	21,939	37·29	29·07	183·43

The Health Officer, Malacca, and his staff are responsible for the whole of Malacca. He is also the Rural Board and Municipal Health Officer, Port Health Officer and Registrar of Births and Deaths, Malacca. The Deputy Health Officer is on full-time health work, but the Assistant Health Officers are in charge of two district hospitals in Malacca and are under the Health Officer as regards health and sanitation. There is also a staff of trained Sanitary Inspectors in all the districts. The rural area of Malacca is divided into three sanitary districts—central, north and south. One Sanitary Inspector and one Sanitary Overseer are stationed in the southern district and

two Sanitary Inspectors are stationed in the northern and central districts. The Health Office of the district is in the central area from where the district health and welfare work are controlled. There is in Malacca Town one Health Sister, under whom locally trained Health Nurses work, including house and school visiting in the villages and kampongs, and in some cases maternity work. Attendances in clinics were 10,274 in 1933 as compared with 11,653 in 1932.

Extent and population of rural areas are as follows:—

			Area in square miles	Estimated population
Singapore	...	...	185	37,120
Penang Island	...	...	98½	52,258
Province Wellesley	...	...	280	135,287
Dindings	...	...	183	18,130
Malacca	...	...	720	140,692
Labuan	...	...	28½	7,405
			1,495	390,892

B.—General Review of work done and progress made

(i).—Preventive Measures

Government provided the following votes for anti-malarial work in 1933 as compared with 1932:—

Settlement	1932 \$	1933 \$
Singapore	60,000	60,000
Penang	75,000	60,000
Malacca	31,000	31,000
Labuan	5,000	5,000

(a) *Singapore*.—A vote of \$60,000 was available for anti-mosquito works in Singapore. Wages of labourers accounted for \$33,399, anti-malarial oil cost \$7,125, \$2,926 provided for material and incidental expenses.

Forty-six thousand gallons of oil were sprayed and it is estimated that an area of sixteen square miles and a population of 64,000 is protected by all anti-malarial measures.

A considerable proportion of permanent subsoil and open drainage exists in the more populous parts of the Rural Area. In those districts not completely protected by these permanent works a regular oiling programme at definite intervals is in force and the efficacy is checked by weekly larval surveys by specially trained mosquito collectors.

During the year but little permanent drainage was undertaken. The total length of subsoil pipes laid was 1.11 miles with 0.21 miles of open cement channels in connection with existing drainage schemes, attention was directed principally to maintenance of existing works. The total length of drainage upkeep exceeds 45 miles of subsoil piping and 15 miles of open cement drainage.

Since 1921 approximately \$1,020,505 have been spent on rural anti-malarial work in Singapore Island.

Over 10,000 anopheline larvae were collected of which 15.05% were *A. maculatus*, the main vector in malarial transmission in Malaya.

A reduction in the number of cases of malaria treated at the outdoor and travelling dispensaries was evident. The spleen rates in school children within protected areas is less than 1%.

(b) *Penang*.—The protection of the rural population from malaria forms an important section of the activities of the Health Branch. Uncombated, this disease, in our rural areas, alone exacts a greater toll of sickness and social devastation than all other diseases combined.

Works are generally carried out under the legal provisions of Ordinance 174 (Destruction of Mosquitoes). This Ordinance endows the Sanitary Authority with adequate means of enforcement of all such anti-mosquito measures as may be necessary and reasonable for the betterment of the public health in the more populous areas.

A provision of \$60,000 was made for such anti-mosquito work in the Northern Settlement during the year. Since 1926 the Health Branch has undertaken gradually extending measures for the permanent control of malaria in villages throughout the rural areas of Penang, Province Wellesley and Dindings. Complete anti-malaria protection is also assured for the whole of Penang Hill residential area and for Pulau Jerejak Quarantine Station and Leper Settlement.

The seriousness of the malaria problem throughout the hilly districts of the Northern Settlement is due to the widespread distribution of breeding places for *Anopheles maculatus*. Measures are directed against the larval stage of the mosquito, this work is associated also with general sanitary measures and, in some selected areas, with drug prophylaxis. There is also free distribution of quinine. Anti-larval operations extend to within a distance of half a mile of the outskirts of malarial villages. The practice of anti-larval control consists of applying larvicide (anti-malarial oils or Paris Green) to all the breeding places of dangerous mosquitoes within the protection zone; permanent protection works such as drainage and earth filling are then taken in hand so as to replace by gradual degrees anti-malaria measures which are lacking in permanence and reliability.

In the Dindings permanent anti-malarial works have been extended around Lumut, where malaria is now under complete control and further extensions of protection zones have taken place around the villages of Damar Laut and Segari.

The following table gives a resume of works done :—

—	Notices served	Feet of sub-soil drains relaid	Feet of open masonry drains constructed or repaired	Feet of earth drains dug and graded	Anti-malaria wells constructed	Cubic yards of earth filling	Gallons of oil used	Mosquito larvæ examined
Penang ..	38	15,471	2,266	20,274	16	9,150	49,362	47,407
Province Wellesley	11	1,515	168	14,176	6	320	27,566	19,597
Dindings ..	14	1,346	2,234	1,095	1	533	7,152	1,560

An expenditure of \$52,229 was incurred in the maintenance and extension of anti-malaria drainage works. Expenditure is incurred in the payment of staff on temporary wages, in labour, in the purchase of materials and on the upkeep of a motor lorry, etc. A sum of \$3,119 was recovered from private owners on whose land anti-malaria measures were carried out; this together with the balance on the vote has been credited to Colonial revenue.

(c) *Malacca*.—During the year the sum of \$29,003 was spent on temporary and permanent anti-mosquito measures. A scheme for the permanent drainage of a ravine near Gadek Estate was undertaken during the year and was almost completed at the end of 1933. In addition, repairs were carried out to existing permanent works at Jasir and Pulau Sebang.

(ii).—General Sanitation and Village Conservancy

SINGAPORE

A progressive improvement in the general sanitation of rural kampongs is evident. The labour force engaged in scavenging work consists of 137 coolies and six mandores (foremen) distributed within the five sanitary districts into which the Rural Area of the island is divided. The Sanitary Inspector of each district is responsible to the Health Officer for the efficient prosecution of sanitary measures.

During the year, a daily average of 4,000 cubic feet of refuse was incinerated or buried. Six new incinerators were constructed at an average cost of \$300 as follows :—Pasir Panjang and Paya Lebar Districts, one each; Geylang District, four. It is considered that requirements are probably more adequately served by the provision of multiple inexpensive incinerators rather than by the erection of expensive single or double chambered incinerators situated at widely separated intervals.

CONSERVANCY

Village conservancy in Rural, Singapore is of the dry pail system, and daily collection is in force. A further advance in the prevention of soil pollution was recorded. Three hundred and forty sanitary latrines were demolished and 870 were constructed or reconstructed on sanitary principles. The machinery for the collection of excreta remains similar to that of former years i.e. by approved nightsoil contractors utilising their own labour and transport under the supervision of the Health Officer. Only the more residential areas are catered for under this system these being gazetted as "Compulsory Nightsoil Removal Areas". The contractor is authorised to collect up to \$1 per pail per month. In many cases, a mutual adjustment is attained between the contractor and the householder at a lower figure. This system of collection continues to give satisfaction and adequate supervision is maintained to ensure final disposal in the trenching grounds or septic tanks provided for the purpose. There are at present four trenching grounds and three septic tanks. The number of pails on the removal list is 3,546 compared with 3,050 at the end of 1932 and 1,470 in 1930.

It is proposed to try experimentally a number of rubber pails during the coming year of the standard pattern in use at present. Owing to difficulties in control, it was not considered expedient to encourage the construction of tube latrines in populous rural areas.

OFFENSIVE TRADES

The supervision of premises engaged in any offensive trade is carried out by an inspector specially appointed for this purpose. During the year under review, seven new slaughter houses and one market were erected. Since the appointment of this officer in 1931 the number of licenses shows a continuous increase with a corresponding increase in revenue derived from these sources. In 1933, the revenue inclusive of fines totalled \$5,402 compared with \$2,160 in 1931, the licence fees for piggeries alone amounting to \$1,275 as against \$53 in 1931.

POLICE STATIONS

There are 13 police stations in the Rural Area which are regularly visited by the District Sanitary Inspectors and inspected by the Health Officer once monthly. Three hundred and twenty-three visits were paid.

GOVERNMENT BUILDINGS

Defects in the sanitation of Government buildings within Municipal limits are reported when they occur by the Sanitary Inspector (Town) while similar buildings in the Rural Area are supervised by the inspector in whose district they occur.

SCHOOLS

Regular visits were paid by Sanitary Inspectors to schools and a satisfactory sanitary standing was maintained.

INFANT WELFARE

There are five Infant Welfare Centres in Rural, Singapore which cater for the requirements of all nationalities. One additional centre was opened temporarily on the island of Pulau Tekong. It is intended to utilise two sub-centres at Kranji and Seletar during 1934 more especially for the immediate resident Malay population.

The figures for attendances by nationalities at all centres during the year were :—

<i>Malays</i>	<i>Chinese</i>	<i>Indians and others</i>	<i>Total</i>
7,874	36,456	2,774	47,104

In addition, 32,497 home visits were made by the staff of the centres.

VACCINATIONS

During the year the vaccine lymph in use was supplied from the Institute of Medical Research, Kuala Lumpur. Primary vaccinations are performed principally by the Government Vaccinator, the Medical Officer-in-charge travelling dispensary and at the Infant Welfare Centres. In the Rural Area 4,165 primary vaccinations were carried out by these officers. In addition, 6,922 children, chiefly those in attendance at school, received re-vaccination and 490 of the police staff.

PENANG

Rural sanitation is carried on mainly under the jurisdiction of the Rural Boards of Penang, Province Wellesley and the Dindings.

The Rural Board Health Departments are responsible for the progress of scavenging and conservancy in villages and kampongs and for the prevention of communicable diseases throughout the rural areas. The Health Staff undertakes regular sanitary surveys for the improvement of housing conditions and for the supervision of coffee shops, eating houses, bakeries, dairies, cattle-sheds, pigstyes, slaughter houses and offensive trades. Action is taken where necessary under appropriate laws or bylaws to stimulate public opinion or to enforce public health requirements.

The following figures refer to routine inspections carried out by the Sanitary Staff :—

	NUMBER OF INSPECTIONS OF:						
	Houses	Latrines	Police Stations	Schools	Estates & copra sheds	Cattle sheds	Pigstyes
Rural Penang ..	14,881	16,881	312	459	388	1,654	4,998
Province Wellesly ..	20,193	28,623	264	384	267	1,089	649
Dindings ..	2,796	873	278	253	43	148	1,461

In Penang Island there were 73 prosecutions and the total number of fines realised were \$109.50.

In Province Wellesley, the number of prosecutions were 225 and fines amounted to \$488.23.

In the Dindings 41 prosecutions were effected; fines were \$75.

An organised system of night-soil removal and disposal is now fully established in all gazetted villages. Pail latrines are obligatory in places where buildings are close together; elsewhere in villages and throughout the rural area bore-hole latrines or corresponding types of sanitary convenience are provided by the responsible occupier. Owing to the adoption of the contract system, these conservancy schemes are self supporting and can be adapted to suit the different circumstances met with in each locality. Under this scheme a total of 4,647 nightsoil pails are dealt with daily at a rate which varies from \$1 to 50 cents per month inclusive of the cost of the pail and of disinfectants used. Throughout the residential area of Penang Hill, and in a number of residences along the coast road, water carriage and septic tank systems have been installed.

During the year 3,359 latrines have been constructed or reconditioned so as to render them sanitary. Insanitary latrines to the number of 1,166 have been demolished. One hundred and ninety-nine deep bore-hole latrines have been constructed and 724 pit latrines have been dug upon instruction by the sanitary inspectors. Sale of night-soil for manure is not permitted and as a rule disposal is effected by trenching, but at Lumut and Butterworth dumping at sea is successful. Altogether 4,086 notices under Section 209 (1) and Section 227 of Ordinance 135 Municipal were served in connection with this work; throughout the rural areas action is taken to minimise the risk of soil and water pollution.

In regard to scavenging, the occupiers of all licensed premises and better class houses in gazetted villages are required to possess and use rubbish bins of an approved type; in addition, Rural Board refuse bins are placed on concrete platforms along the road-side in places convenient for the public; domestic refuse collected in these bins together with road sweepings, is collected into hand-carts and disposed of either by incineration in the village incinerators or by "controlled tipping". Within the past year an extended use has been made of the latter system of rubbish disposal; which, in the first instance, depends upon the choice of a suitable site for dumping refuse. A disused gravel pit or other waste ground which affords easy access and an ample supply of earth for covering over rubbish, is selected near a village; the refuse is deposited in layers not more than 4 feet in depth and 10 to 15 feet in width in a position marked out by the sanitary inspector. The sides of each layer slope at an angle of 45°. The refuse when discharged from the rubbish cart is dealt with according to a definite routine. Paper, rags, baskets, boxes and other bulky materials are flattened and laid at the bottom of the pit. Buckets and tins are crushed or filled up with earth. Bottles, jars and similar receptacles are broken up. Vegetable and other waste matter, together with road sweepings, are raked down on to the top of this and stamped tight. Consolidated in this way all the rough material is placed at the bottom of the dump and a compact layer of rubbish lies above. Finally the face and sides of the dump are covered daily with a layer of not less than 6 inches of soil, stamped hard. The refuse carts which are hauled over the dump assist in the consolidation of the material upon which depends the successful working of the scheme. By careful packing air spaces are avoided: the exclusion of air prevents spontaneous combustion, and rats, flies and other harmful insects are prevented from finding a breeding place.

Gradually by biological action, the organic content of the refuse is transformed into simple inorganic compounds. Most of the material with the exception of glass and china-ware, is broken down into harmless products and within a period of 12 to 18 months, if the refuse be exposed, it presents an appearance of dark sandy soil. Local experiments which have been carried out for the past two years have shown that this method, wherever practicable, is hygienically sound and may sometimes be more economical than the older method of burning. Valuable land has moreover been reclaimed and fertile ground has been provided for cultivation of crops where previously the land was arid and useless.

There are 41 village incinerators within gazetted areas and three, in addition, on Penang Hill, most of which have given good service throughout the year.

MALACCA

The Rural Area of Malacca is 632 square miles in extent. Sanitary supervision is exercised by the Health Officer assisted by the Deputy Health Officer in the Central District, a part time Assistant Health Officer at Alor Gajah, a similar officer at Jasin, six sanitary inspectors and one sub-overseer.

During the year the various officers delivered 117 lectures on health measures in the various Vernacular Schools.

The Rural Health Department continued to carry out scavenging of all gazetted village areas and some ungazetted areas, control of night-soil collection and disposal, house-inspecting, maintenance of permanent anti-malarial work, control of temporary anti-malarial measures and supervision of all health matters.

Regular inspection of coffee-shops, slaughter-houses, pigstyes, dairies and cattle-sheds continued to be carried out as in previous years.

CONSERVANCY

The advance in the control of soil pollution made in 1932 was maintained. Some 10,078 latrines being inspected during the year. Insanitary latrines abolished and new latrines constructed number 193 and 607 respectively.

(iii).—Water Supplies

Singapore.—The more populous parts of the Rural Area are provided with a piped water supply. The Rural Board provided adequate facilities to enable poorer families to obtain water by the installation of stand-pipes at convenient positions in relation to the various kampongs adjacent to the pipe line. Opportunity has been taken during a number of years past to utilise the subsoil water in connection with anti-malaria schemes in establishing a fairly satisfactory water supply to isolated kampongs and individual groups of squatters huts. The supply although far short of the purity obtainable with a piped system is yet an improvement on the type of open unlined well which the rural householder frequently constructs. Washing facilities are also provided where practicable.

Water samples are sent periodically for examination as to purity.

Penang.—The water supply of George Town (Penang) is good in quality and abundant. A number of the surrounding villages are served with Municipal supplies.

Elsewhere in rural areas, spring water is as a rule plentiful along the foothills, but in such situations malaria is also prevalent, and wherever practicable anti-malaria drainage schemes are specially designed to provide wholesome water and good bathing facilities for the villagers.

These new water supplies of which there are now one hundred and thirty in daily use have proved most beneficial to health and are very popular with the inhabitants. Protected wells are provided in the majority of villages and kampongs on flat land.

The inadequacy of potable water along the coastal and inland plains of Province Wellesley is a serious health problem.

Brapiit Reservoir supplies Bukit Mertajam, Butterworth and Prai but as the reservoir has not a catchment area large enough to provide a constant supply in times of drought, the quality of the water is unsatisfactory. Analysis shows it to be free from dangerous pollution, but the presence of a red algae renders it unpalatable without domestic filtration. The erection of a filtering plant is under consideration.

A supplementary reservoir is in course of construction at Chero To'Kun; when completed this will partially remedy these defects and may permit the installation of a water carriage system in certain parts of Butterworth.

The supply to the villages of Nibong Tebal and Sungei Bakap from Bukit Panchor reservoir in South Province Wellesley continues to be treated through a filtration plant with satisfactory results, but the amount of water available is insufficient for the needs of a growing population.

Practically the whole of the large Northern area of Province Wellesley is lacking in a good water supply; the agricultural and village population depend upon heavily polluted surface wells. Twenty-one rubber estates in Province Wellesley have their own piped water system, notably Bertam estate which obtains a supply of filtered water from the Muda river. The water supply on Bertam Estate is a model on which in more prosperous times a plant might be erected for service in the district.

Added to the question of domestic supply, the inadequacy of the water supply is quoted as a deterrent to the supply of modern sanitary installations in developed areas, and where these have been installed great difficulty is found in their maintenance due to the interrupted supply in drought periods.

In Lumut, the headquarters of the Dindings, there is a piped supply from hill streams impounded in two catchment reservoirs. An additional dry weather emergency supply, from wells in the Pundut Valley, is now available.

(iv).—School Hygiene

Singapore.—Regular medical inspection of school children by the Lady Health and Assistant Health Officer (Schools) was in force throughout the year. There are 42 Government and 23 Government Aided Schools on the visiting roster of these officers.

Eight thousand four hundred and ninety-four pupils were inspected in the former and 9,165 in the latter. The Sanitary Inspector of Schools is responsible for an adequate standard of sanitation being maintained. The travelling dispensary visits a proportion of the Malay Schools each week.

Regular dental treatment is offered to pupils and free transport is provided between the outlying schools and the dental clinic.

The schools are also included in the routine roster of the Government Vaccinator and all children are re-vaccinated before the age of seven and a half years.

Penang.—The number of children of school age subject to regular medical examination in Government and Government-aided schools in Penang Settlement is 21,121 of whom 16,631 are boys and 4,490 girls. Of these 11,517 attend at 102 vernacular Malay Schools and 9,604 are in 21 Government English and Aided Schools. There are in addition 98 private Chinese and Tamil schools with 9,989 children; the latter schools are subject only to sanitary survey. The appointment of an assistant school Medical Officer for Penang has made it possible to make a complete survey of all boys schools in this Settlement. This officer is aided as a part time duty by members of the health and medical staffs. The Lady Medical Officer is also a part time school medical officer and carries out an annual medical inspection in all girl schools.

Treatment of minor ailments is carried out by the medical officer with the assistance of a dresser and where necessary children are referred to the out-door dispensaries for further treatment. Children suffering from defective vision, enlarged tonsils, etc., are advised to attend hospital.

The travelling dispensaries and public vaccinators co-operate in this work in rural areas and the Health Officer arranges for a dresser to pay regular visits to the schools for the treatment of children that he has examined.

(Details of schools work are shown in the Appendix F.)

Malacca.—Medical inspection of school children in Malacca is carried out by the Lady Medical Officer, who examines the female pupils at Government-aided institutions, and girls' vernacular schools; by the Deputy Health Officer who examines male pupils at Government-aided institutions and the boys vernacular schools of the Central District; and by the Assistant Health Officers at Alor Gajah and Jasin who examine the pupils at the various boys' vernacular schools in their respective Northern and Southern Districts.

Many children are found to be suffering from eye and dental defects. Those that can afford to pay for spectacles are examined and prescribed for errors of refraction at the Government Clinic conducted by the Deputy Health Officer. The children take little notice of advice given in regard to seeking dental treatment. The Settlement is sorely in need of a school dental service.

(v).—Labour Conditions

Singapore.—The most important event in the year's history of local labour was the passing of the Workmen's Compensation Act in the second half of the year.

The labour force employed by the Health Department is mainly Indian with one or two Malays and Chinese.

The health of estate labour and the sanitation of the coolie lines is supervised by the Health Officer and his subordinate staff.

There are on the island 113 rubber estates and 72 coconut estates. Only 28 estates employ a labour force of more than 25 coolies. Cases of sickness which require hospital treatment are referred to Government Hospitals in the city.

The coolie lines of the Public Works Department are inspected regularly. The largest force of this Department which is engaged on excavation work in the Changi area in connection with the filling operations of the new civil aerodrome has its own Dresser and Sanitary Inspector who are supervised by the Health Officer.

Penang.—Estates in Penang Island subject to medical inspection are 30 in number, of which only 4 are over 100 acres in extent. In the Dindings there are 34 estates including 10 large estates under European management. The estates in the Dindings are inspected annually by the Deputy Medical and Health Officer and this officer makes additional inspections at such other times as occasion may require. There are 209 estates over 25 acres in extent in Province Wellesley; regular bi-annual visits of inspection by the Health Officer are made to 54 of these estates; of these 27 receive in addition special and routine visits of private medical practitioners. There is a resident medical practitioner in the Caledonia group of estates. A number of estates are still exempt from inspection by reason of their having no resident labour force. There are three estate hospitals in Province Wellesley and two in the Dindings; elsewhere patients requiring hospital treatment are sent to the nearest Government hospital.

Malacca.—Estates in Malacca are inspected by the Government Health Officer and Assistant Health Officers. In Malacca there is a Planters' Board named the Malacca Agricultural Medical Board which provided medical service for most of the estates in Malacca, and during the year employed five medical practitioners (two whole-time European, two whole-time Chinese and one half-time Chinese) stationed at convenient centres. Twenty-two estates in Malacca are served by estate hospitals and there are twenty-six dispensaries. Estates which have no hospitals use Government hospitals. All estates send most of their serious cases into Government hospitals.

OTHER LABOUR

The health of the Public Works and other labour forces in the rural area of Singapore is cared for directly by the Medical Department. Offensive trades preponderate in the Municipality, where they are controlled effectively. Offensive trades in Rural Singapore are controlled by the Rural Board Inspector of Offensive Trades under the direction of the Health Officer.

The health of Public Works Department labourers and other forces in rural areas in Penang was inspected by officers of the Health Branch and the labourers received free hospital treatment when necessary.

(vi).—Housing and Town Planning

Singapore.—Various plans for the sub-division of land and road widening were submitted to the Health Department for approval.

Houses in the Rural Area are in the main of attap roof and plank wall structure but the number of better type houses continue to increase.

Attention has been directed in the last few years to the improvement of existing squatter houses and all new houses of this type must comply with certain fixed requirements as to size of cubicles and provision of latrine, kitchen, etc. There are in addition regulations affecting the type of house which can be built within 100 feet of main roads.

Three hundred and fifty-one applications for construction of buildings of a temporary nature were submitted to the Health Officer for approval and 117 applications were made for reconstruction of existing premises. Eighty-three plans for buildings of a permanent nature were approved with minor alterations in several instances.

No buildings were demolished during the year. The number of houses in the Rural Area is estimated at 18,000.

Penang.—The estimated number of houses in rural Penang is 13,965 of these 2,971 are within gazetted village limits. In addition to regular inspection of all schools, police stations and public buildings in their respective districts, the sanitary inspectors reported upon 14,881 house to house inspections in the course of their routine duties.

The Health Officer also inspects houses as occasion requires. Verbal advice and warning to remedy sanitary defects are generally given followed by an intimation notice and, if not complied with, nuisance notices are subsequently served.

Overcrowding and consequent lack of ventilation is the commonest defect in all types of dwelling, but considerable improvement has been effected in recent years as a result of inspections by the Sanitary Authorities.

Malacca.—Supervision of housing continued during the year and insanitary conditions were dealt with as and when they were discovered. Routine house to house inspections were carried out by the Sanitary Inspectors who carried out 10,716 such inspections during the year.

(vii).—Food in relation to Health and Disease

Singapore.—All premises engaged in the manufacture or sale of food or drink for human consumption are inspected regularly. The majority of such premises with the exception of eating houses and coffee shops which are licensed by the police on the recommendation of the Health Officer are licensed by the Rural Board. Special attention was paid to dairies not only with reference to existing sanitary conditions but also as regards the quality of the milk produced. One hundred and eighty-seven samples were sent to the Government Analyst for examination.

Five thousand six hundred and nineteen visits were paid to eating houses, coffee shops, fish shops, grocery shops, butchers and slaughter houses. Rural markets were inspected on 1,113 occasions and regular inspections were made to bake-houses, toddy shops, etc.

Penang.—The inspection and control of food is carried out by the Municipal and Government health officers in their respective areas. There are markets in all the principal towns and villages.

Milk vendors, eating houses, coffee shops, meat shops and aerated water factories are licensed and inspected. Water, milk and other beverages and food stuffs both local and imported are regularly analysed, and action is taken if indicated.

The practice of referring to the Health Branch applications for licences for coffee shops, eating shops, slaughter houses, markets, milk vendors, etc., has been continued with satisfactory sanitary results.

Inspections, as tabulated, were carried out in the Northern Settlement :—

---	Eating houses and coffee shops	Toddy shops	Markets	Milk vendors and cow sheds	Bakeries, &c.	Slaughter houses
Penang ...	1,783	197	839	81	142	318
Province Wellesley ...	3,586	121	985	1,352	1,140	639
Dindings ...	249	60	167	113	...	109

In addition, bakeries, fishmongers' shop, grocers' shops, toddy-shops, and slaughter-houses were regularly inspected.

Malacca.—All applications for licences for coffee-shops, eating-shops, slaughter-houses, markets, dairies etc., are investigated by the Health Department and, before a licence is issued, applicants have to comply with fairly stringent sanitary requirements.

The following inspections were performed during the year :—

Coffee-shops and eating-shops	...	...	...	5,655
Toddy-shops	...	...	...	8
Markets	...	...	...	1,479
Dairies and milk vendors	...	...	...	148
Slaughter houses	...	...	...	349

C.—Measures taken to spread the knowledge of Hygiene and Sanitation

The education of the indigenous population is regarded as one of the most important measures in disseminating the practices and principles of hygiene and sanitation. These principles are inculcated by friendly talks between the District Sanitary Inspector on his rounds and the various house-holders and it has been realised that much can be accomplished by verbal request accompanied by the explanation of the reasons associated therewith. The law is brought in as a corrective agent only when other measures fail.

The officers in charge of travelling dispensaries contribute their quota by imparting instruction at the wayside halting places while the minds of the younger generation are influenced by lectures and film displays in the schools.

Much good work is also done at the various Infant Welfare Centres and penghulus (headmen) of outlying kampongs (villages) also lend valuable aid.

D.—Training of Sanitary Personnel

By arrangement with the Royal Sanitary Institute, London, a course of training is held yearly in Singapore and on the recommendation of the Board of Examiners, the Institute grant their certificate if the candidate has obtained the necessary standard at the examination held on completion of the six monthly course.

The student sanitary inspectors are of two classes, Government and private, and are recruited from the whole of Malaya.

Instruction includes sanitation, infectious diseases and their prevention; malariology including microscopic and practical field work and mosquito identification; physics and chemistry; sanitary engineering and food inspection.

The course has been in existence since 1921, the class is restricted to a maximum of 25 students in order to enable a greater amount of individual attention to be given to each student. The fee for the course is \$125 with an additional \$35 as examination fee. Students who fail at the first attempt may re-sit the following year on payment of the examination fee only. Thirty students were in attendance this year of which twenty have been recommended for the Certificate of the Institute.

V.—PORT HEALTH WORK AND ADMINISTRATION

A.—Singapore

1. Number of ports from which vessels arrived	...	...	531
2. Names of ports against which quarantine measures were declared during the year :—	Alexandria, Basrah, Bombay, Calcutta, Canton, Cebu, Chittagong, Colombo, Hongkong, Karachi, Madras Moulemein, Muscat, Nanking, Negapatam, Pondicherry, Rangoon, Shanghai, Swatow.		
3. Total tonnage of ships entering the port	...	...	14,807,204
4. Number of ships entering the port	...	...	20,689
5. Ships examined including pilgrim ships and infected ships	...	...	965
6. Outgoing pilgrim ships examined	...	...	3
7. Returning pilgrim ships examined	...	...	3
8. Infected ships examined (all small-pox)	...	...	2
9. Ships fumigated or disinfected	...	...	142
10. Crew examined	...	...	66,753
11. Passengers examined including Muslim pilgrims and Chinese immigrants	...	...	76,012
12. Outgoing pilgrims examined	...	...	575
13. Revenue for charges for fumigation or disinfection of ships and from certificates issued to such ships	...	...	\$8,025
14. Returning pilgrims examined	...	...	1,511
15. Chinese immigrants examined	...	...	26,750
16. Corpses inspected in harbour	...	...	23
17. Water boats inspected in harbour	...	...	49
18. Passengers undertakings issued for surveillance ashore	...	...	2
19. Optional certificates issued to ships fumigated or disinfected	...	...	127
20. Bills of health issued	...	...	1,916
21. Permits to import and export corpses issued	...	...	25
22. Revenue from Bills of Health fees (45 free to Warships)	...	...	\$9,355
23. Revenue from permits to import and export corpses	...	...	\$250
24. Charge of water supplied to passengers at Quarantine Station recovered from agents	...	...	\$347.05
25. Total revenue	...	...	\$17,977.05
26. Exemption certificates issued to ships	...	...	363
27. Deratisation certificates issued	...	...	6
28. Rats trapped and bacteriologically examined :			
R. <i>Decumanus</i>	R. <i>Rattus</i>	Others	Total
129	284	23	436
			Plague infected Nil
29. Prosecutions :—			
Under rule 20 (3) of Ordinance 157, Two passengers ex. s.s. <i>Amboise</i> , fined \$25 each	...	...	1
30. Drinking water from water boats examined	...	...	4

ST. JOHN'S ISLAND QUARANTINE STATION

FIGURES FOR THE YEAR 1933

1. Total passengers admitted during the year	...	...	21,733
2. Greatest number admitted on any one day (13-3-33)	...	...	610
3. Maximum number in residence on any one day (27-2-33)	...	...	527
4. Minimum number in residence on any one day (11-1-33)	...	...	1
5. On 215 days there were none in residence.			
6. Total sick treated in hospital, i.e. total admissions during the year and patients remaining in hospital on 31-12-32	...	...	18
7. Maximum number in hospital on any one day (29-4-33)	...	...	4
8. Minimum number in hospital on any one day (14-5-33)	...	...	1

(Note.—On 224 days there were none in hospital)

9. Average daily number of sick in hospital ...	...	...	783
10. Total deaths during the year ...	...	...	Nil
11. Deaths per mille in hospital ...	...	...	Nil
12. Death rate per mille amongst passengers admitted ...	...	...	Nil
13. Total cases of cholera admitted ...	...	...	Nil
14. Total cases of plague admitted ...	...	...	Nil
15. Total cases of cerebro-spinal fever admitted ...	...	...	Nil
16. Total cases of small-pox admitted ...	...	...	1
17. Number of non-infected ships whose passengers subsequently developed infectious diseases on the Island ...	...	...	Nil
18. Number of infected ships whose passengers subsequently developed infectious diseases on the Island ...	...	...	Nil
19. Number of primary vaccinations ...	...	...	9,460
20. Total re-vaccinations ...	...	...	73
21. Total vaccinations with anti-cholera vaccine ...	...	...	Nil
22. Total vaccinations with anti-meningococcus vaccine ...	...	...	Nil
23. Total number of N.A.B. injections ...	...	...	Nil
24. Cases treated as outdoor patients (contacts and staff) ...	...	...	307
25. Total births ...	...	...	1
26. Number of Municipal contacts and patients admitted :			
Small-pox contacts ...	...	...	Nil
Plague contacts ...	...	...	Nil
Cholera contacts ...	...	...	Nil
Cerebro-Spinal meningitis contacts ...	...	...	Nil
27. Number of Government contacts and patients admitted :—			
Small-pox contacts ...	...	...	12
Plague contacts ...	...	...	Nil
Cholera contacts ...	...	...	Nil
Cerebro-spinal meningitis contacts ...	...	...	Nil
28. Number of Municipal contacts who developed infectious diseases on the Island ...	...	...	Nil
29. Number of Government contacts who developed infectious diseases on the Island ...	...	...	Nil
30. Corpses sent to station for (P. M. examination and) burial ...	...	...	1
31. Number of gallons of Singapore water pumped up ...	...	...	3,742,592
32. Average daily number of passengers in quarantine ...	...	...	80.29

RESUMÉ OF PORT HEALTH WORK, SINGAPORE, FOR 31 YEARS

Year		Crew and Passengers examined	Passengers sent to St. John's Island	Visits to Vessels	Bills of Health issued
1903	...	321,365	21,253	809	1,000
1904	...	279,297	17,852	712	1,036
1905	...	323,431	12,109	1,279	1,220
1906	...	493,021	30,076	1,625	1,674
1907	...	377,325	25,408	1,226	1,318
1908	...	303,484	29,356	1,506	1,344
1909	...	291,625	15,072	1,251	1,299
1910	...	467,868	35,062	1,920	1,200
1911	...	538,291	53,961	2,100	1,800
1912	...	539,677	56,726	1,927	2,145
1913	...	506,925	56,838	1,818	1,582
1914	...	402,583	18,193	1,803	1,802
1915	...	200,978	3,335	821	1,563
1916	...	426,584	9,738	1,617	1,726
1917	...	277,442	78,881	694	1,915
1918	...	284,198	24,182	1,709	2,086
1919	...	411,921	28,318	2,130	2,160
1920	...	507,176	31,991	2,023	2,878

RESUMÉ OF PORT HEALTH WORK, SINGAPORE, FOR 31 YEARS

Year	Crew and passengers examined	Passengers sent to St. John's Island	Visits to vessels	Bills of Health issued
1921	511,747	8,950	1,851	2,951
1922	369,072	15,343	1,552	2,720
1923	395,583	7,374	1,360	2,718
1924	408,419	39,053	1,433	2,912
1925	366,671	46,063	1,018	3,204
1926	550,443	78,963	1,650	3,273
1927	643,066	20,169	1,568	3,071
1928	501,009	13,993	1,342	3,345
1929	526,048	84,282	1,578	3,255
1930	431,017	43,659	1,186	2,922
1931	205,542	2,733	697	2,401
1932	238,075	19,947	1,183	2,240
1933	142,767	21,733	965	1,871

B.—Penang

Ports of clearance on which quarantine restriction was imposed were:—

Small-pox.—Alexandria, Basrah, Bombay, Calcutta, Canton, Colombo, Karachi, Pondicherry, Swatow, Hongkong, Madras, Shanghai, Nanking, Rangoon, Moulmein, Muscat, Nagapatam.

Cholera.—Calcutta, Chittagong, Moulmein, Cebu, Madras.

Plague.—Nil.

Cerebro-spinal Meningitis.—Nil.

The only infected ship to arrive in Penang during the year was s.s. "Rohna" from Madras on 2nd November, 1933, with a case of small-pox.

Other details are summarised as follows:—

1.	Passengers admitted to quarantine station	...	13,989
2.	Greatest number admitted on any one day (21-9-33)	...	913
3.	Passengers medically examined	...	63,457
4.	Crew medically examined	...	48,073
5.	Maximum number in residence on any one day (21-9-33)	...	913
6.	Minimum number in residence on any one day	...	1
7.	Sick treated in hospital (patients remaining on 31-12-33 included)	...	99
8.	Total deaths during the year	...	2
9.	Death-rate among those treated	...	2.3%
10.	Number of births	...	Nil
11.	Cases of cholera admitted	...	Nil
12.	Cases of plague admitted	...	Nil
13.	Number of vaccinations	...	12,691
14.	Number of anti-cholera inoculations	...	Nil
15.	Number of out-patients treated	...	481
16.	Number of anthelmintic treatments	...	1
17.	Corpses examined in harbour	...	9
18.	Permits to import or export corpses	...	49
19.	Certificates to accompany hides	...	2
20.	Water boats examined	...	12
21.	Revenue in stamp fees	...	\$4,004
22.	Number of vessels entering the port (including native craft)	...	8,418
23.	Tonnage of these vessels	...	6,616,726
24.	Number of ships examined (ship infected 1)	...	359
25.	Number of pilgrim ships proceeding to Jeddah	...	3
26.	Outgoing pilgrims examined	...	708
27.	Number of pilgrim ships returning from Jeddah	...	2
28.	Returning pilgrims examined	...	575
29.	Infected ships proceeding to quarantine	...	1
30.	Fumigations and disinfections by disinfecting launch	...	Nil
31.	Number of disinfection certificates issued	...	Nil
32.	Passengers undertaking issued	...	239
		(on behalf of passengers)	529
33.	Bills of health issued (2 free)	...	704
34.	Exemption permits issued	...	142

RESUMÉ OF PORT HEALTH WORK, PENANG, FOR 30 YEARS

Year	No. of Vessels visited	Bills of Health issued	Passengers and crew units examined	Passengers sent to Quarantine	Number of Small-pox admissions	Number of cholera admissions	Number of Plague admissions	Vaccinations carried out
1904	748	..	184,691	2,217	16	5	2	..
1905	869	266	214,136	10,406	10	1	..	..
1906	675	460	204,988	23,288	16	8	2	6,490
1907	633	..	219,839	17,650	4	24	1	5,625
1908	1,205	..	176,119	21,175	51	9	2	5,691
1909	503	..	161,971	23,058	23	2	1	5,614
1910	526	..	217,967	71,876	62	33	2	12,205
1911	1,144	..	277,151	134,957	109	387	1	63,988
1912 *	634	..	287,373	55,493	75	4	4	38,297
1913	818	..	272,473	53,937	11	12	1	37,276
1914	1,040	..	215,067	48,399	171	9	..	32,609
1915	405	396	148,622	23,179	3	..	..	21,562
1916	662	..	213,726	42,736	11	1	..	36,806
1917	367	437	203,737	37,595	11	12	..	36,808
1918	551	612	173,813	33,481	7	80	..	29,536
1919	493	633	210,839	50,733	6	264	..	39,941
1920	432	602	207,424	43,733	4	8	..	41,230
1921	461	393	197,446	19,653	42	3	..	10,377
1922	480	530	197,579	31,247	6	..	..	26,675
1923	442	646	182,349	24,129	2	9	..	23,359
1924	461	793	214,936	28,701	..	151	..	25,779
1925	417	754	203,204	44,984	8	47	..	42,514
1926	885	753	282,530	85,607	5	91	..	77,879
1927	3,201	733	367,183	88,849	11	41	..	83,675
1928	1,821	898	257,507	43,273	11	..	..	40,354
1929	532	1,058	262,476	58,013	1	..	..	54,554
1930	480	1,020	216,125	35,778	..	..	..	33,450
1931	375	783	136,503	6,837	3	5	..	6,659
1932	378	730	115,217	4,467	1	..	..	3,961
1933	359	704	111,530	13,989	1	..	..	12,691

VI.—MATERNITY AND CHILD WELFARE

I.—Maternity Hospitals

There are government maternity hospitals in both Singapore and Penang, and maternity wards in several of the government district hospitals, in the Church of England Mission Hospitals at Singapore and Malacca, and in the Kwong Wai Shiu Hospital, Singapore, a charity supported by the Chinese community.

The following is a statement of the number of women admitted to and delivered in maternity institutions in the Straits Settlements, 1933 :—

	Admitted	Delivered
1. Maternity Wards, General Hospital, Singapore	1,277	1,135
2. Free Maternity Hospital, Kandang Kerbau, Singapore	2,417	2,303
3. Maternity Ward, St. Andrew's Mission Hospital, Singapore	300	300
4. Maternity Ward, Kwong Wai Shiu Hospital, Singapore	196	196
5. (i) King Edward VII Maternity Hospital, Penang	1,541	1,364
(ii) Maternity Wards in Province Wellesley and Lumut Hospitals ...	188	156
6. Maternity Wards in Malacca and other District Hospitals	185	185
	<u>6,104</u>	<u>5,639</u>

The ever increasing number of patients admitted to the maternity hospitals and wards is a source of considerable gratification to all concerned. In no other section of the medical service has such progress been attained.

St. David's Mission Hospital, Malacca, was closed in 1933.

* New Quarantine Station opened and old Quarantine Station converted into Leper Camp.

TABLE SHOWING MATERNAL MORTALITY RATE IN THE STRAITS SETTLEMENTS, 1933.

(a).—Singapore

	<i>Total admissions</i>	<i>Total delivered</i>	<i>Total maternal deaths and details therefrom</i>	<i>Percentage of deaths to total treated</i>
Maternity Ward, General Hospital ...	1,277	1,164	*20	1'56

*Causes of death were:—

Placenta prævia and post-partum hæmorrhage ...	1		
Eclampsia ...	5		(of which 2 were undelivered, and 1 delivered before arrival).
Accidental hæmorrhage ...	2		
Neglected shoulder presentation ...	1		(undelivered).
Chronic malaria ...	1		
Acute subtertian malaria ...	1		
Secondary anæmia ...	2		
Bilateral lobar pneumonia ...	1		
Puerperal septicæmia ...	1		
General peritonitis & acute toxæmia ...	1		
Beri-beri ...	4		(of which 1 undelivered).
	20		

	<i>Total admissions</i>	<i>Total delivered</i>	<i>Total maternal deaths and details therefrom</i>	<i>Percentage of deaths to total treated</i>
Maternity Hospital, Kandang Kerbau ...	2,417	2,303	*27	1'10

*Causes of death were:—

Retained placenta, shock and hæmorrhage (all delivered at home before admission) ...	3		
Beri-beri ...	3		
Chronic cardiac disease ...	3		
Placenta prævia ...	3		
Eclampsia ...	2		
Toxic accidental hæmorrhage ...	2		
Severe anæmia of pregnancy ...	2		
Lobar pneumonia ...	2		
Enteric fever ...	1		
Exophthalmic toxic goitre ...	1		
Vesicular mole ...	1		
Toxæmia from septic macerated undelivered foetus ...	1		
Antepartum septicæmia ...	1		
Puerperal septicæmia ...	2		
	27		

(b).—Penang

	<i>Total admissions</i>	<i>Total delivered</i>	<i>Total maternal deaths and details therefrom</i>	<i>Percentage of deaths to total treated</i>
King Edward VII Maternity Hospital ...	1,541	1,364	(i) 26	1'69
Butterworth Hospital ...	35	27	(ii) 6	17'14
Bukit Mertajam Hospital. ...	33	31	(iii) 1	3'33
Sungei Bakap Hospital. ...	57	42	(iv) 3	7'14
Lumut Hospital ...	63	56	(v) 1	1'58

Causes of death were :—

(i) *Maternity Hospital.*—

Beri-beri	...	...	...	...	1
Anæmia of pregnancy	...	...	...	...	2
Revealed accidental hæmorrhage	...	...	...	...	2
Hæmatoma & sloughing of Vulva, toxæmia	...	...	...	...	1
Retained placenta, post-partum hæmorrhage	...	...	...	...	3
Albuminuria of pregnancy and toxæmia	...	...	...	...	5
Eclampsia	...	...	...	...	3
Pulmonary embolism	...	...	...	...	1
Retained placenta, sepsis	...	...	...	...	1
Ankylostomiasis, anæmia	...	...	...	...	1
Broncho-pneumonia	...	...	...	...	1
Cerebral malaria	...	...	...	...	2
Malaria cachexia	...	...	...	...	1
Subtertian malaria	...	...	...	...	1
Influenza	...	...	...	...	1
					26

(ii) *Butterworth Hospital.*—

Post-partum hæmorrhage	...	...	...	...	1
Puerperal septicæmia	...	...	...	...	3
Eclampsia	...	...	...	...	1
Pulmonary embolism	...	...	...	...	1
					6

(iii) *Bukit Mertajam Hospital.*—

Puerperal septicæmia	...	...	...	...	1
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(iv) *Sungei Bakap Hospital.*—

Obstructed labour, heart failure	...	...	...	...	1
Albuminuria and heart failure	...	...	...	...	1
Toxæmia of pregnancy	...	...	...	...	1
					3

(v) *Lumut Hospital.*—

Post-partum hæmorrhage	...	...	...	...	1
------------------------	-----	-----	-----	-----	---

(c).—*Malacca*

	Total admissions	Total delivered	Total maternal deaths and details therefrom	Percentage of deaths to total treated
Durian Daun Hospital	130	110	(a) 9	6.92
Alor Gajah Hospital	25	15	(b) 3	12.00
Jasin Hospital	30	28	(c) 2	6.66

Causes of death :—

(a) *Durian Daun Hospital.*—

Placenta prævia	...	...	...	...	1
Puerperal septicæmia	...	...	...	...	2
Puerperal sepsis	...	...	...	...	1
Abnormal labour	...	...	...	...	5
					9

(b) *Alor Gajah Hospital.*—

Puerperal septicæmia	...	...	...	...	2
Abnormal labour	...	...	...	...	1
					3

(c) *Jasin Hospital.*—

Puerperal septicæmia	...	...	...	...	1
Abnormal labour	...	...	...	...	1
					2

II.—Training and Work of Midwives

Midwives are trained at the Government Hospitals; a few are trained at the Mission Hospitals.

Class *A* midwives comprise women with sufficient English education to undergo a 12 months' training and examination similar to the C.M.B., for which they receive a diploma. Nurses with British diplomas are registered in this class also.

Class *B* midwives comprise Asiatics of lower education, who undergo a practical training given in Malay for from six to nine months, and pass a practical examination.

Class *C* consists of women who have been registered, though unable to pass an examination because they were in regular practice before the passing of the Midwives Ordinance.

The number of registered midwives in the Colony is:—

		Singapore	Penang	Malacca
Class <i>A</i>	...	136	80	9
Class <i>B</i>	...	346	276	25
Class <i>C</i>	...	32	186	194
		514	542	228

Steps are being taken to train as many midwives as possible in Malacca to replace those in Class *C*.

The number of births in the Colony in 1933 was 42,538.

III.—Infant and Child Welfare Services

These are conducted by the Municipalities of Singapore, Penang and Malacca within Municipal boundaries, by the Singapore Child Welfare Society, and, in rural area, by Government.

A.—IN MUNICIPALITIES

Infants up to the age of 12 months are attended at the three Singapore Municipal Clinics. During the year 14,190 new infants were placed on the registers of the infant welfare clinics, this figure represents 84% of the total births in the city.

The total number of attendances was 49,237 as compared with 41,215 in the previous year.

The four District Sisters paid a total of 19,398 visits to homes, of these 14,666 were first visits to newly born babies.

The Municipal Health Officer in his annual report for 1932 stated that congenital syphilis was found to be the most important cause of chronic ill-health, and this investigation was continued throughout the year 1933, the results confirming those of the previous year.

The Penang Municipality employs two European Health Sisters.

In Malacca two Assistant Health Visitors are employed, under the supervision of a Health Sister who is the Government Health Sister but is also employed part time by the Municipality.

B.—THE SINGAPORE CHILD WELFARE SOCIETY

This Society is supported by subscriptions and donations and a Government grant.

The Society supports two clinics and a creche. Children between one and five years of age are treated free at these clinics.

The Municipal clinics which treat babies up to the age of 12 months, pass to the Society's care children over one year of age who require treatment.

The Society employs two qualified European Matrons and four locally trained Chinese nurses all of whom, after a morning's work at the clinics and creche, carry out a routine of house to house visiting in slum districts.

The total number of attendances was 55,854, which is 5,726 in excess of 1932 figures.

All children needing treatment which cannot be given at the clinics are sent to hospital, the majority being sent to St. Andrew's Mission Hospital.

Minto Road Creche.—The total number of attendances was 9,059 a decrease of 249 over 1932, due undoubtedly to the curtailing of work at certain factories. The total number of new admissions was 134 as compared with 127 in the previous year. The average daily attendance was 29.

C.—GOVERNMENT INFANT WELFARE CENTRES.

There are two Government Health Sisters in Singapore, one in Penang, one in Province Wellesley and one in Malacca. There are five centres in Singapore, two in Penang, three in Province Wellesley and four in Malacca. The clinics are held at the various centres on stated days and hours.

D.—COMBINED RETURN SHEWING VISITS PAID TO HOMES AND ATTENDANCES AT WELFARE CLINICS

			<i>Visits to Homes</i>	<i>Attendances at Clinics</i>
<i>Municipalities.—</i>				
Singapore	...	...	126,215	49,237
Penang	...	...	54,538	—
Malacca	...	...	18,860	4,078
			199,613	53,315
Singapore Child Welfare Society	...	...	39,783	55,854
<i>Government.—</i>				
Singapore	...	...	32,497	47,104
Penang	...	...	54,356	40,302
Province Wellesley	...	...	51,520	52,144
Malacca	...	...	16,806	10,274
			155,179	149,824
Grand total			394,575	258,993

IV.—Associated Activities

Women's and children's dispensaries are conducted by Government in Singapore, Penang and Malacca, and by Missions in Singapore and Malacca. The dispensaries are staffed by Lady Medical Officers.

The returns for 1933 are:—

	<i>New patients</i>	<i>Repetitions</i>	<i>Total</i>	<i>Total No. of children amongst the new patients</i>
<i>Women's and Children's Dispensaries, Singapore—</i>				
(a) Kandang Kerbau	14,626	23,881	38,507	8,403
(b) General Hospital Outdoor Dispensary	4,508	16,943	21,451	2,081
Women's and Children's Dispensary, Penang	9,932	9,824	19,756	5,883
Women's and Children's Dispensary, Malacca	9,246	6,835	16,081	5,160
St. Andrew's Mission Dispensary, Singapore	6,759	16,518	23,277	—
	45,071	74,001	119,072	21,527

Motor Travelling Dispensaries.—There were 123,179 attendances in 1933. Of these 19,609 were women and 30,333 children.

St. David's Mission Dispensary, Malacca, was closed in 1933.

VII.—HOSPITALS, DISPENSARIES AND VENEREAL CLINICS

The following table shows the hospitals maintained by the Medical Department, the average daily number of patients in each, the total number of patients admitted during the year, the total number of deaths and the death-rate per hundred treated:—

<i>Hospitals</i>	<i>Average daily number of patients</i>	<i>Total No. of patients treated</i>	<i>Deaths</i>	<i>Percentage of deaths to total treated</i>
<i>I.—SINGAPORE—</i>				
General Hospital	610.86	14,043	1,551	11.04
Tan Tock Seng Hospital	777.34	7,742	929	11.90
Maternity Hospital, K.K.	34.73	2,417	27	1.10
St. John's Island Hospital	.78	18	—	—
Police Hospital	15.12	941	—	—
Mental Hospital	1,349.50	1,718	165	10.41

<i>Hospitals</i>	<i>Average daily number of patients</i>	<i>Total No. of patients treated</i>	<i>Deaths</i>	<i>Percentage of deaths to total treated</i>
II.—PENANG—				
General Hospital ...	168.26	4,563	396	8.67
Maternity Hospital ...	26.68	1,582	26	1.64
District Hospital ...	282.90	3,827	449	11.73
Balik Pulau ...	11.95	163	2	1.22
Lumut Hospital, Dindings ...	60.02	2,078	84	4.04
Butterworth Hospital, P.W. ...	79.93	1,928	95	4.92
Bukit Mertajam Hospital, P.W. ...	81.14	1,631	87	5.33
Sungei Bakap Hospital, P.W. ...	103.59	2,601	112	4.30
III.—MALACCA—				
Durian Daun Hospital ...	306.53	4,683	384	8.19
Jasin Hospital ...	43.93	896	59	6.59
Alor Gajah Hospital ...	24.93	879	45	5.12
IV.—LABUAN—				
District Hospital ...	10.43	286	11	3.87

TABLE SHOWING MALE AND FEMALE PATIENTS TREATED AT THE VARIOUS HOSPITALS IN THE COLONY, 1933

(a).—Singapore

			<i>Total treated</i>
General Hospital ...	Male ...	...	9,006
	Female ...	...	4,679
Tan Tock Seng Hospital ...	Male ...	...	8,203
	Female ...	...	129
Mental Hospital ...	Male ...	...	1,263
	Female ...	...	455
Leper Settlement ...	Male ...	...	212
	Female ...	...	138

(b).—Penang

General Hospital ...	Male ...	...	3,268
	Female ...	...	1,295
District Hospital ...	Male ...	...	3,827
	Female ...	...	—
Maternity Hospital ...	Male ...	...	—
	Female ...	...	1,582
Prison Hospital ...	Male ...	...	267
	Female ...	...	—
Balik Pulau Hospital ...	Male ...	...	163
	Female ...	...	—
Female Leper Settlement ...	Male ...	...	—
	Female ...	...	80
Pulau Jerejak Leper Settlement ...	Male ...	...	1,064
	Female ...	...	—
Quarantine Station ...	Male ...	...	74
	Female ...	...	25
Butterworth Hospital ...	Male ...	...	1,563
	Female ...	...	365
Bukit Mertajam Hospital ...	Male ...	...	1,329
	Female ...	...	302
Sungei Bakap Hospital ...	Male ...	...	1,883
	Female ...	...	718
Lumut Hospital ...	Male ...	...	1,470
	Female ...	...	608

(c).—Malacca

Durian Daun Hospital ...	Male ...	...	3,689
	Female ...	...	994
Alor Gajah Hospital ...	Male ...	...	658
	Female ...	...	221
Jasin Hospital ...	Male ...	...	717
	Female ...	...	179

The preceding table *VII* excludes the number treated at the Leper Settlements of Penang and Singapore, and the Prisons Hospitals (*vide* Appendices *A* and *B* and section *X* (*a*), (*b*) and (*c*). These figures are included in the return of in-patients and diseases as shown in Table *V*, page 108.

Prevailing Diseases among Hospital Patients:—

<i>Diseases</i>	<i>Admissions</i>	<i>Deaths</i>	<i>Mortality</i>
Malaria, acute ...	4,487	172	3.83
Malaria, chronic ...	859	29	3.37
Venereal Diseases ...	3,292	166	5.04
Influenza ...	1,028	3	0.29
<i>Chest Affections—</i>			
Bronchitis ...	1,063	14	1.31
Pneumonia and broncho-pneumonia	1,220	729	59.75
Pulmonary Tuberculosis ...	2,121	845	39.83
<i>Intestinal Affections—</i>			
Dysentery ...	626	136	21.72
Diarrhoea and Enteritis ...	797	130	16.31
<i>Other Affections—</i>			
Helminthic Diseases ...	1,637	31	1.89
Beri-Beri ...	888	203	22.86
Anaemia ...	236	35	14.83
<i>Surgical Conditions—</i>			
Chronic Ulcers ...	1,706	8	0.46
Wounds ...	2,673	96	3.59
Fractures, etc ...	2,372	96	4.00
Abscesses, etc. ...	1,456	25	1.71

The total number of in-patients treated during 1933 was 50,206 with 4,530 deaths, as against 54,442 with 4,446 deaths in 1932.

The distribution in the three Settlements was as follows:—

	<i>Admissions</i>	<i>Deaths</i>
Singapore ...	25,610	2,682
Penang ...	18,174	1,349
Malacca ...	6,145	488
Labuan ...	277	11
Total ...	50,206	4,530

The total number of beds and the average daily number of patients in the three Settlements in 1933 were:—

	<i>Beds</i>	<i>Average daily No. of patients</i>
Singapore ...	3,506	3,034.20
*Penang ...	2,314	1,718.30
Malacca ...	504	373.42
Labuan ...	25	10.75

POLICE HOSPITAL, SINGAPORE

MEDICAL STAFF.—

- One Assistant Medical Officer.
- One Lady Assistant Medical Officer.
- One Dresser.

Medical attention is given to the members of the police force by one part-time Lady Assistant Medical Officer who attends to the women and children and one full-time Assistant Medical Officer.

The men are treated as far as possible as out-patients. Those that need special attention are admitted into the police hospital at the Dépôt, into the General Hospital or into the Middleton Hospital. Cases sent to the General Hospital are those that need more attention than can be given to them at the Dépôt Hospital. Those sent to the Middleton Hospital are cases of infectious diseases.

Routine work at the Dépôt hospital commences at 6-30 every morning. In addition to the ordinary routine hospital work the Divisions are visited every morning between the hours of 7 and 9 and medical advice given to those reporting sick. All the stations within Municipal limits are visited once a month and those outside once in

* Includes Province Wellesley and Dindings.

six months. The men stationed at the Dépôt are medically examined once a month and those at the Divisions once in six months. Lectures in First Aid are given to the men at the Dépôt four days a week and during the latter part of the year under review a course of lectures in First Aid was commenced for the European Assistant Superintendents of Police and Inspectors.

The number of cases attended to during the year under review was 4,765, an average of 13.1 per day as compared with 13 the previous year and 14.6 in 1931. The average strength of the Force including the men at the Dépôt for 1933 was 2,388, so the percentage of men reporting ill per day was 0.55.

The following were the chief complaints:—

Affections of the respiratory system	...	...	1,777
Affections of the digestive system	...	...	531
Wounds and other injuries	...	...	430
Ulcers and abscesses; eczema and other skin affections	...	...	813
Fever of unknown origin	...	...	326
Affections of the eye	...	...	106
Affections of the ear	...	...	52
Malingering	...	...	96
Infectious disease:			
Mumps	...	...	26
Chicken pox	...	...	2

Venereal disease incidence: This shows a small increase over the previous two years.

	<i>Syphilis</i>	<i>Gonorrhœa</i>	<i>Soft Sore, etc.</i>	<i>Total</i>
1931	90	50	18	158
1932	84	74	6	164
1933	88	80	12	180

One thousand one hundred and four cases were admitted into hospital during the year; 941 into the Dépôt Hospital, 137 into the General Hospital, and 26 into the Middleton Hospital. From the Dépôt Hospital 31 cases were transferred to the General Hospital and 3 to the Middleton Hospital.

Total number of days patients detained in Dépôt Hospital	...	5,284
Total number of days patients detained in General Hospital	...	2,649
Total number of days patients detained in Middleton Hospital	...	398
Total number of days patients detained in barracks	...	1,669
Total	...	10,000

Thus the total number of days men were off duty owing to illness was 10,000 an average of 27.4 men per day and a percentage of 1.15 of the whole force.

There were five deaths during the year.

Forty-five men were found to be unfit for further service and were boarded out.

Two hundred and sixty-four recruits were medically examined and 55 of these were found medically unfit.

The following terminal causes of death were noted in 197 fatal malarial cases:—

	General Hospital, Singapore	Tan Tock Seng Hospital, Singapore	Penang Hospital	Malacca Hospital	Total
Ankylostomiasis	6	..	..	..	6
Cardiac failure	18	9	59	4	90
Cachexia	..	2	7	10	19
Coma or convulsions	2	..	20	..	22
Coma: cerebral malaria	..	14	..	9	23
Dysentery and enteritis	3	1	..	..	4
Failure of liver function	..	2	..	..	2
Hyper-pyrexia	2	..	3	8	13
Malaria—complicated with beri-beri	3	3	..	..	6
Malaria complicated with hypostatic pneumonia	4	..	..	..	4
Malaria—complicated with inter-current lobar and broncho-pneumonia	..	2	..	..	2
Malaria—complicated by nephritis	1	..	..	..	1
Other pulmonary complications	2	3	..	..	5
Total ..	41	36	89	31	197

The approximate daily cost of diets per head in the Colony for the year 1933 was :—

Scale		First Class	Second Class	Third Class									
				\$1 Grade					50 Cents Grade				
				Chinese	Moslem	Tamil	Bengalee Hindu	Sikh	Chinese	Moslem	Tamil	Bengalee Hindu	Sikh
		\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
A	..	1 32	94	28	24	24	..	..	19	21	18	25	33
A1	..	..	98	..	..	..	..	..	..	..	..	..	..
A2	..	..	96	..	..	..	..	..	..	..	..	..	..
B	..	1 38	96	48	48	48	..	..	16	16	..	..	..
C	..	1 06	1 03	..	..	..	..	..	10	10	10	15	15
Special													
A. T.B.	..	..	..	39	35	35	25	33	..	..	..	..	..
B. T.B.	..	..	..	59	59	59	..	..	..	..	..	..	..

OUT-DOOR DISPENSARIES

Out-patients treated at all out-door dispensaries and hospitals, including travelling dispensaries, totalled 293,115, and the attendances were 544,002. This does not include those treated at social hygiene clinics, infant welfare centres, or at school inspections, all of which are recorded elsewhere in this report.

These out-patients can be classified under three headings :—

					<i>Out-patients</i>	<i>Attendances</i>
(I) At Hospitals	...	...	(a) Singapore	...	24,930	43,519
			(b) Labuan	...	4,562	5,652
(II) At Dispensaries	...	...	(a) Singapore	...	48,556	96,447
			(b) Penang*	...	83,928	198,115
			(c) Malacca	...	39,459	77,090
(III) At Travelling Dispensaries	...	...	(a) Singapore	...	17,608	20,517
			(b) Penang Island	...	24,942	36,203
			(c) Province Wellesley	...	19,674	25,196
			(d) Malacca	...	29,456	41,263
					293,115	544,002

The number of out-patients treated for yaws was 8,060 as compared with 9,655 in 1932. More Malays suffering from this disease have come forward voluntarily to accept treatment.

The attendances at the Women's and Children's Dispensary, Kandang Kerbau, Singapore, numbered 38,507 as compared with 36,400 in 1932.

In the Women's and Children's Dispensary, Penang, the attendances were 19,756 as against 19,942 in the previous year.

The total number of attendances at the Women's and Children's Dispensary, Malacca, was 16,081. Of 9,246 new patients who received treatment 5,160 were children. This clinic has now been separated into two district units—a women's and children's dispensary and an infant welfare centre.

VIII.—MENTAL HOSPITAL, SINGAPORE

There remained on 31st December, 1932, nine hundred and eighty-two males and three hundred and fifty females. Two hundred and eighty-one males and one hundred and five females were admitted during 1933. The total treated was one thousand seven hundred and eighteen persons.

Of the admissions forty males and thirteen females had been previously inmates of Singapore Mental Hospital.

Of the total treated ninety-eight males and twenty-eight females were discharged as recovered, twenty-seven males and twelve females as improved, eight males and five females as not improved and six males and one female as not insane on admission. Eight males and one female absconded. One hundred and twenty-nine males and thirty-six females died.

* Penang includes Province Wellesley and the Dindings.

There remained on 31st December, 1933, nine hundred and eighty-seven males and three hundred and seventy-two females.

The daily average was 989.74 males and 360.76 females.

The maximum and minimum daily numbers respectively were one thousand three hundred and sixty-nine and one thousand three hundred and thirty.

The nationalities of the admissions were:—

			<i>Males</i>	<i>Females</i>
British	...	...	5	1
Eurasians	...	...	4	11
Chinese	...	...	166	68
Tamils	...	...	61	7
Malays and allied races	...	...	31	14
Other nationalities	...	...	14	4

The physical condition of those admitted was:—

			<i>Males</i>	<i>Females</i>
Good	...	...	97	25
Fair	...	...	82	45
Impaired	...	...	85	29
Greatly impaired	...	...	17	6

There were forty-eight less admissions than in 1932, the admission rate however being slightly above the average for the previous ten years. Some cases of mental disorder were primarily caused by privation and starvation but on the whole prevailing economical conditions do not appear to have affected the admission rate adversely to any marked extent. Heredity, alcohol, syphilis, fevers and critical periods of life as usual figure in some instances as factors contributing to the causation of insanity.

The recovery rate for the year was 32.64.

Criminal patients:—

			<i>Males</i>	<i>Females</i>
There remained on 31st December, 1932	...	...	46	3
During 1933—number admitted	...	...	12	1
No. discharged from the Mental Hospital:				
(a) to prison as not insane on admission	...	...	2	—
(b) as fit to make their defence	...	...	4	1
No. whose sentence expired	...	...	2	—
Number who died	...	...	5	—

There remained on 31st December, 1933, forty-five male and three female criminal patients.

Mortality.—The death-rate based on the average daily number resident was 12.22 for 1933. In 1933, as in 1932, dysentery, pulmonary tuberculosis, general paralysis of the insane and pneumonia in order of frequency were the chief causes of death and caused 72% of the mortality. No suicides or fatal assaults on patients took place during the year but one patient died as the result of injuries caused by a fall.

Industries.—Seven thousand six hundred and eighty yards of cotton cloth were woven for use in the institution. Eighty-two thousand nine hundred and sixty pounds of vegetables were grown for the use of the patients and a small quantity of fruit was also available. One thousand nine hundred and ten cocoanuts were harvested.

Revenue was \$21,994.69.

Staff.—No change in the medical staff took place in 1933.

IX.—PRISONS

(a).—Singapore Prison

The general sanitary condition of the Prisons has been good. There has not been any out-break of serious infectious disease during the year and, with the exception of one disease, the health of the prisoners has been very satisfactory. A preliminary report concerning this disease was submitted in November, 1933. The main clinical features of the disease consist of a superficial glossitis, an eczematous condition affecting the scrotum and the corners of the mouth. Among a few of the long sentence prisoners stiffness of the legs and diminution in vision follows. The cause is possibly dietetic but the condition is still under investigation. It is hoped that some conclusions regarding etiology and prophylaxis may be formed in the near future. It should be pointed out that the prisoners affected are nearly always treated as out-patients and therefore the condition has not figured prominently in the hospital admissions. There is no evidence that it is any worse this year than previously.

There were five cases of mild enteric fever admitted into the Prison Hospital during the year and no deaths. Of these two cases (Nos. 1 and 2 on statement hereunder) returned from the General Hospital during the early part of the year. The other three cases were not in contact with each other and no common source of infection was found. All the cooks and bakers were examined bacteriologically and no carriers were found.

	Date admitted to prison	Date of first having fever	Results of Widal	Location
1.	2-12-32	5-12-32	+ in 1 in 250	E. Hall
2.	20-2-30	4-11-32	+ in 1 in 50	D. Hall
3.	17-7-33	4-10-33	+ in 1 in 50	D. Hall
4.	14-1-33	1-11-33	+ in 1 in 25	D. Hall
5.	15-9-33	29-11-33	+ in 1 in 25	D. Hall

The average daily ratio of sick to prison population was :—

1st Quarter	...	...	...	...	1 to 33
2nd "	...	...	...	...	1 to 35
3rd "	...	...	...	...	1 to 35
4th "	...	...	...	...	1 to 33

Admissions to the prisoners hospital during the year numbered 1,254. This with 51 remaining at the end of the previous year gives a total of 1,305 treated of which 59 were Europeans and Euarsians and the rest Asiatics.

The principal diseases were :—

Pyrexia Malarial type Non-		Arthritis	...	...	9
Malarial type 269	284	Herpes zoster	...	...	8
Pulmonary tuberculosis	32	Laryngitis	...	...	7
Scabies	119	Hemiplegia	...	...	5
Ankylostomiasis	21	Enteric fever	...	...	5
Influenza	58	Dysentery unclassified	...	...	4
Gastritis	79	Aortic incompetence	...	...	3
Bronchitis Acute 30 Chronic 14	44	Cirrhosis of liver	...	...	2
Syphilis Primary 5 Secondary 33	38	Chronic nephritis	...	...	2
Cellulitis	39	Diabetes	...	...	1
Hæmorrhoids	20	Cystitis	...	...	1
Corneal Ulcer	10	Hæmorrhage due to rupture of	...	...	1
Conjunctivitis	24	suprarenal vessel	...	...	1
Senility	19	Appendicitis	...	...	1
Secondary Anæmia	14	Leprosy	...	...	5
Asthma	25	Chronic interstitial myocarditis	...	...	1
Diarrhoea	56				

The number of deaths in the Prisons Hospital was 18 as compared with 17 for 1932 giving a death rate of 10.69 per mille. Of these 12 were vagrants, 1 remand and the rest criminals. Excluding vagrants and remand, the death rate is 2.97 per mille.

The causes of death were :—

Pulmonary tuberculosis	...	8	Chronic interstitial nephritis	...	1
Senility cum arterio sclerosis	...	2	Acute intestinal obstruction due	...	1
Aortitis cum aortic incompetence	...	1	to strangulation of small gut	...	1
and polycystitic kidneys	...	1	Cerebral hæmorrhage due to	...	1
Empyema	...	1	hyperpiesia	...	1
Chronic malaria	...	1	Vesical calculus with basal lobar	...	1
Malaria subtertian	...	1	pneumonia	...	1

Prophylaxis of Dysentery.—Prisoners who were sentenced to three weeks and over and vagrants were given a course of oral treatment of polyvalent anti-dysenteric vaccine. The long sentence prisoners and vagrants receive this course of treatment once every three months. Altogether 2,969 prisoners were treated during the year as per details below :

Nationality	Total No. of Bowel Cases	No. of Bacillary Dysentery	No. of Amoebic Dysentery	Dysentery undefined	No. of prisoners having no oral Vaccine	No. of Oral Vaccine given
Europeans	1	..	1	..	..	7
Chinese	44	1	..	4	..	2,538
Malays	7	..	..	..	..	162
Indians	3	1	..	..	..	262
Total	55	2	1	4	..	2,969

Worm Infestation. The stools of all prisoners and vagrants were examined on admission and those who were found to be suffering from helminthiasis were treated. During the year 7,205 stools were examined with the following results:—

Nationality	Anky	Anky. R.W.	Anky. W.W.	Anky. R.W. W.W.	R.W.	R.W. W.W.	W.W.	Neg.	Total
Europeans ..	..	..	..	..	..	..	..	12	12
Chinese ..	982	190	241	13	782	329	471	3,564	6,572
Malays ..	31	15	3	1	26	6	10	99	191
Indians ..	55	17	8	..	58	17	23	252	430
TOTAL ..	1,068	222	252	14	866	352	504	3,927	7,205

One thousand five hundred and seventy-seven prisoners were treated for ankylostomiasis of which 21 were in-patients. As these cases were admitted into the Prison Hospital for one night only they were not included on the sick list.

The routine treatment for ankylostomiasis was as follows:—

1. Urine is examined for albumen.
2. If no albumen is present one ounce of magnesium sulphate is given at 5 P.M.
3. Next day at 6 A.M. a dose of syrup is given.
4. Half an hour later the following mixture:—

R. Carbon—tetrachloridi	...	...	30 minims.
Olei chenapodii	...	...	10 minims.
Liquidum paraffin	...	...	ad ½ ounce.
5. One ounce of magnesium sulphate is given immediately after the mixture.

Transfers.—

Hospital	Number transferred	Number died	No. remaining in Hospital	Returned to Prison and released
General Hospital ..	76	6	10	60
Mental Hospital ..	9	1	6	2
Leper Asylum ..	5	..	5	..
TOTAL ..	90	7	21	62

Outdoor Cases.—32,046 prisoners were treated during the year.

Diets.—The quality of the prisoners diets is very satisfactory and complaints are rare.

Corporal Punishment.—During the year 85 prisoners were flogged.

Overcrowding.—The actual accommodation of the prisoners is 1,788 whilst the daily average muster was 1,696. The female prison was noticeably crowded during the early part of the year but this has been greatly relieved through the completion of an extra ward.

Executions.—During the year 9 prisoners were executed, 4 Chinese and 5 Indians.

Suicides.—There were three cases of suicides during the year, one in the Female Prison, one in the Civil Prison and the last in the Old Prison.

Dr. W. G. EVANS was Medical Officer in charge from January to March when he was relieved by Mr. J. W. WINCHESTER until May, 1933, when Dr. R. A. PALLISTER assumed charge. Dr. ABDUL SAMAT continued as Assistant Medical Officer.

Total patients treated and mortality in the Prison Hospital for the year ending 31st December, 1933:—

Number treated 1st and 2nd class wards	Number of deaths 1st and 2nd class wards	Number treated 3rd class wards	Number of deaths 3rd class wards	Total 1st, 2nd and 3rd class wards		Percentage of deaths 1st & 2nd class wards	Percentage of deaths 3rd class wards	Percentage of deaths on total treated
				Cases	Deaths			
Nil	Nil	1,305	18	1,305	18	Nil	1·38	1·38

(b).—Penang Prison

Admissions.—

- (a) There were 12 cases remaining in hospital at the beginning of the year. 255 cases were admitted during the year making a total of 267 cases treated in all as compared with 495 cases in 1932.
- (b) The daily average number of sick for the year was 6.17 as compared with 7.32 for the previous year.

Diseases.—The principal diseases treated amongst the inpatients were as follows :—

Malaria	...	18	Bowel diseases	...	17
Tuberculosis	...	6	Ankylostomiasis	...	5
Veneral diseases	...	16	Skin diseases	...	46
Diseases of the respiratory system	16		Injuries	...	12

Deaths.—There were 2 deaths amongst those transferred to the General Hospital during the year with a death rate of 7.49 per mille, as compared with 7 deaths and a death rate of 14.14 in the previous year.

Causes of deaths:—

Lobar pneumonia	...	1	Septicæmia	...	1
-----------------	-----	---	------------	-----	---

The above 2 deaths were among criminals.

Out-patients.—995 cases were treated as out-patients during the year as compared with 1,052 cases in the previous year. The average daily attendance was 2.72.

The principal diseases treated among the out-patients were:—

Veneral diseases	...	101	Bowel disorders	...	121
Fever (not specified)	...	102	Skin diseases	...	137
Opium habit	...	57	Ulcers	...	87
Diseases of the respiratory system	103		Other diseases	...	287

Veneral Diseases.—

- (a) Three hundred and twenty-six specimens of blood were taken for Wassermann Test as compared with 573 in 1932.
- (b) One hundred and twenty-eight gave positive results as against 196 in 1932.
- (c) Six hundred and thirteen intravenous injections of N.A.B. were given as against 606 in 1932.
- (d) Six hundred and thirteen Bismuth preparations were given as against 606 in 1932.

Hookworm.—

- (a) Seven hundred and twenty-seven specimens of stool were examined for ova of intestinal parasites etc., as compared with 967 specimens for the previous year.
- (b) Two hundred and twelve were found positive to ova as compared with 329 the previous year.
- (c) Two hundred and twelve cases received treatment for hookworm and ascariasis during the year (114 for ankylostomiasis and 98 for ascariasis).

Minor Operations.—The following minor operations were performed :—

Incision of bubo	...	...	...	...	2
Insision of abscess	...	...	...	...	5
Extraction of teeth	...	...	...	...	8
TOTAL					15

Prison Strength.—There were 228 prisoners and 25 vagrants at the beginning of the year.

One thousand one hundred and eighty-five were admitted during the year under review. (Of the total admitted 1,004 were prisoners and 185 vagrants). The number of prisoners and vagrants remaining on 31st December, 1933, were 165 prisoners and 18 vagrants respectively.

Judicial Hanging.—There were two cases of judicial hanging during the year on 10th October, 1933.

Health.—The sanitary condition of prison and the health of prison staff and prisoners were satisfactory throughout the year.

Hospital Buildings.—The wards and out-buildings were kept in a good state of repair and were painted and whitewashed during the latter part of the year.

Staff.—Dr. A. SOMASUNDARAM was relieved by Dr. R. K. PONNIAH from April, 1933, who was subsequently relieved by Dr. H. R. SARAVANAMUTHU from November, 1933.

(c).—Malacca Prison

The Prison in Malacca is provided with accommodation for 135 prisoners (129 males and 6 females).

The daily average number of inmates was as follows:—

Criminals	...	...	...	...	...	84.89
Remands	...	...	...	...	...	8.54
Vagrants	...	...	...	...	...	5.04

Buildings.—The buildings are well constructed and were kept in good repair throughout the year.

Sanitation.—The cells and precincts of the Prison have been maintained in a sound sanitary state throughout the year.

Feeding.—The feeding of the prisoners throughout the year has been generous and the food well cooked. The vast majority of the prisoners on discharge showed increase in weight as compared with their weight on admission.

Medical Attention.—The prison is provided with a hospital of 8 beds for treatment of in-patients.

This is utilized merely as a detention ward for treatment of minor maladies, all serious cases being transferred to Durian Daun Hospital for treatment.

Dr. S. THAMBIPILLAY, Assistant Medical Officer in charge of the Town Dispensary, visits twice a week and is called for emergencies. The Chief Medical Officer, Malacca, visits the prison every Saturday morning.

A Dresser and an attendant are also attached to the Prison Hospital.

Admissions to the hospital during 1933	...	...	76 cases.
Mortality	...	...	—

The cases treated in hospital were chiefly trivial and included 3 cases of malaria. The daily average number of sick treated was 2.24.

X.—KING EDWARD VII COLLEGE OF MEDICINE**Abstract of Annual Report**

The Council.—There were seven meetings of the Council during the year, the average number of members present being eleven.

The Hon. Dr. C. J. WILSON, M.C., returned from leave on 28th January and was President of the Council till 14th December, when he proceeded on leave prior to retirement.

The Hon. Mr. A. M. GOODMAN, Secretary for Chinese Affairs, Straits Settlements, was transferred to Penang as Resident Councillor. The Hon. Mr. A. B. JORDAN became Vice-President of the Council in his place.

The Hon. Mr. L. RAYMAN acted as a member of the Council during the absence of the Hon. Mr. A. S. SMALL from 17th March to 10th November, 1933.

The Hon. Dr. NOEL L. CLARKE was elected as a member of the Council for a period of three years by the Electoral Board at its meeting held on 31st March, 1933.

The Senate.—Four meetings of the Senate were held during the year with an average attendance of ten members.

Students.—There was an entry of 17 medical and 20 dental students in June, 1933. Nineteen medical students and 7 dental students left the College during the year. Of these 11 completed the medical course and obtained the Diploma of the College. The first 2 dental graduates obtained their Diplomas during the year. There were 151 students including 37 dental students at the College in December, 1933 as against 140 in December, 1932. The number of fee-paying students increased from 61 in 1932 to 79 in 1933.

Teaching.—The re-examination in Chemistry, Physics and Biology was held at the end of May instead of August as in previous years. This change was adopted to enable all students who had passed in these subjects to commence their studies of Anatomy, Biochemistry and Physiology in June at the beginning of the academic year. Students who fail in the May re-examination are required to take the whole course in these subjects again. The course in Organic Chemistry and Biochemistry were combined and now extend over three terms of the second year and the combined examination is held in these subjects at the end of the academic year. The course in Physiology was rearranged to enable students to receive sufficient knowledge of such sections of Physiology as they require for the proper appreciation of the course in Biochemistry.

The final examination was divided into two parts; Part I, comprising Public Health and Medical Jurisprudence and Part II, Medicine, Surgery and Midwifery and

Gynaecology. The student may sit for Part I at the examination held previous to his final examination and, if he passes the examination, he is not further examined in these subjects.

The Council invited the General Medical Council to send a visitor to inspect the College in 1934.

The League of Nations with the approval of Government and the Council and Senate of this College, arranged to hold an International Malaria Course in the College of Medicine in May, 1934.

The Keith Museum.—Complete re-mounting of all old specimens was continued; the work has been carried out section by section. The two sections dealing with lesions of the central nervous system and respiratory system were completed by the end of the year. New specimens of special value were added to all sections. Microscopical sections are being prepared from many specimens. The mounting of an "Atlas of Ophthalmoscopic Diagnosis" was completed early in the year. At the end of the year the total number of specimens in the Museum was 451.

Research.—In the Biology Department Professor B. A. R. GATER reviewed the species of *Anopheles* occurring in Malaya in their larval and adult stages, as far as it was possible to obtain specimens. Descriptions of several species, previously incompletely or erroneously described, were made. At the beginning of the year the Malaria Advisory Board approached Professor Gater with a view to the issue of up-to-date, comprehensive keys to the larvæ and imagines of Malayan anopheline mosquitoes. This was completed, and by the end of the year the book was in the final stages of printing.

The nutrition research carried out by Professor J. L. ROSEDALE and his staff was continued during the year. The investigation of local foods in respect to their content of water soluble vitamin C was in progress; all local foods likely to serve as practical sources of this vitamin have been examined, and a report is about to be published. Investigations into the nature of vitamin C was continued and some active crystals have been secured from pineapples. Work on the fat-soluble vitamin A and D was continued. It was found that while vitamin D was not found as such in the majority of fats taken as food, the parent substance—ergosterol—evidently enjoys a wide distribution and lard, gingelly oil, earthenut oil, cocoanut oil, red palm oil, may readily be activated by our sunlight in this country and become potent sources of vitamin D. The vegetable oils and lard, with the notable exception of red palm oil, were not found to be sources of vitamin A. Cooking experiments were carried out with red palm oil and it was shown that it may be used for frying without significant deterioration of the vitamin; it was pointed out it is possible by the use of this oil to overcome all deficiency diseases due to the shortage of vitamin A, but that it is essential to take warning that if the oil is bleached it loses all its vitamin properties and becomes worthless. Work upon the mineral content of foods was continued and a table giving the calcium content of 58 foods was published in December. A number of species of dried fishes on the local market were submitted to chemical analysis and it is interesting to note that their price usually runs in accordance with their content of fat.

Professor W. A. YOUNG continued his study of an undescribed spiral organism. An investigation was carried out into certain epidemics in pigs. The first disease investigated was a rapidly progressing broncho-pneumonia. A further epidemic of suppurative sub-maxillary lymphangitis associated in many cases with broncho-pneumonia was also investigated. Dr. N. K. SEN investigated the occurrence of acid-fast granules and granular bacilli occurring in the sputum of some cases in Tan Tock Seng's Hospital which had no clinical signs of pulmonary tuberculosis. An organism was isolated showing variable acid-fast staining, some forms closely resembling morphologically *M. tuberculosis*. This organism is at present non-pathogenic to laboratory animals. Serological examinations and the preparation of vaccines for the Social Hygiene Department were carried out as in previous years. Investigations as to the value of enterovaccination on the control of dysenteric infections in the Singapore Prison and the Singapore Mental Hospital were continued.

Professor R. B. HAWES continued his investigation into the cause and treatment of nephrosis and a paper was prepared for publication. In addition work was done on the following:—Aolan in the treatment of gastric ulcer; soya bean in the treatment of cirrhosis of the liver; the value of adexolin in pneumonia; the dietetic value of red palm oil when used in cooking; Reglyphol in diabetes.

Staff Changes.—Professor K. BLACK proceeded on leave on 17th February, 1933. He resumed duty as Professor of Surgery on 19th September, 1933, on his return from leave. During the absence Professor B. M. JOHNS acted as Professor of Surgery.

Professor B. M. JOHNS returned from leave on 18th February, 1933. He assumed duty as Acting Professor of Surgery. Dr. E. C. CHITTY acted as Professor of Clinical Surgery during the leave of Professor B. M. JOHNS.

Professor J. L. ROSEDALE proceeded on leave on 30th March, 1933. He returned from leave and resumed duty as Professor of Biochemistry on 16th September, 1933. During his absence Dr. C. J. OLIVEIRO was in charge of the Department of Biochemistry.

Professor E. K. TRATMAN proceeded on leave on 28th April, 1933. He returned from leave and resumed duty as Professor of Dental Surgery on 22nd December, 1933. During his absence Mr. C. F. MUMMERY acted as Professor of Dental Surgery.

Dr. J. C. TULL returned from leave on 20th January, 1933. During his absence Dr. H. O. HOPKINS acted as Lecturer in Pathology.

Dr. F. R. SAYERS proceeded on leave on 15th June, 1933. During his absence Dr. J. I. BAEZA acted as Lecturer in Public Health.

Professor J. R. KAY-MOUAT proceeded on leave on 24th August, 1933. During his absence Dr. K. C. GHOSH was in charge of the Department of Physiology.

Publications.—Professor B. A. R. GATER :—

I.—The Genus *Anopheles*, M.M.J. 8 (1) : 39.

II.—Seasonal Distribution *ibid* 8 (1) : 43.

III.—The larval forms of *Anopheles aitkeni* James, *ibid*. 8 (2) : 96.

IV.—Anopheline Larvæ of the "*umbrosus group*", *ibid* 8 (3) : 180.

V.—Some remarks on *Anopheles maculatus* Theobald in relation to Malaria, *ibid*. 8 (4) : 277.

On *Anopheles bæzai* n.sp. from the Malay Peninsula, Bull. Raffles Mus. No. 8, p.

Professor J. G. HARROWER :—

A case of Inflamed Saccular Subclavian Aneurism, M.M.J. 8 (1) : 70.

A case of Complicated Left Inguinal Hernia, M.M.J. 8 (1) : 72.

Septic Granuloma of the Vulva, M.M.J. 8 (2) : 122.

Elephantoid Tumour of the Labium Minus, M.M.J. 8 (2) : 124.

Hydrocephalus, A Plea for its early Diagnosis and Treatment, M.M.J. 8 (3) : 176.

Acute Hæmorrhagic Pancreatitis due to *Ascaris Lumbricoides*, M.M.J. 8 (4) : 295.

Treatment of Cystic Hygroma of the Neck by Sodium Morrhuate. B.M.J., July, 1933.

Bilateral First Thoracic Ganglionectomy in Two Cases of Parkinson's Syndrome. B.M.J., October, 1933.

Skeletal Remains from the Kuala Selingsing Excavations. Jour. Roy. As. Soc., Dec., 1933.

The Abdominal Viscera of *Nycticebus Malayensis*. Ceylon Jour. Sci., Dec., 1933.

Dr. K. C. GHOSH :—

The Kata-thermometer and Ventilation, A Review with some Observations in Singapore Schools, M.M.J. 8 (2) : 109—116.

Dr. C. J. OLIVEIRO and Mr. J. P. MORRIS :—

Calcium in Tropical Foods, M.M.J. 8 (4) : 236—238.

Professor E. K. TRATMAN :—

An unusual case of Multiple Epulides of the medullary type. The British Dental Journal.

Mr. T. ROEBUCK :—

Notes on the British Pharmacopœia 1932, M.M.J. 8 (2) : 116.

A Guide to the British Pharmacopœia 1932.

A course in Dispensing for Medical Students.

XI.—SCIENTIFIC, ETC., (APPENDICES)

A.—Report on Leper Settlements, Singapore.

B.—Report on Pulau Jerejak Leper Settlement, and the Female Leper Settlement, Penang.

C.—Report on Pathological Branch, Straits Settlements.

D.—Report on the General Hospital, Singapore.

E.—Report on Schools, Straits Settlements.

F.—Report on Social Hygiene Branch, Straits Settlements.

R. D. FITZGERALD, M.C.,
Acting Director of Medical and Health Services,
Straits Settlements.

APPENDIX "A"

Leper Settlements, Singapore

ANNUAL REPORT FOR THE YEAR 1933

1. Male Leper Settlement.—

Remained on 31-12-32	...	...	...	71
Admitted during 1933	...	...	...	141
				212
Discharged during 1933	...	...	...	1
Absconded during 1933	...	...	...	28
Died	...	...	...	7
Transferred to Pulau Jerejak during 1933	...	...	...	85
Remaining on 31-12-33	...	...	...	91

Immediate Causes of Death—

Leprosy and pulmonary tuberculosis	...	...	...	1
Leprosy	...	...	...	6

2. Female Leper Settlement—

Remained on 31-12-32	...	...	...	102
Admitted during 1933	...	...	...	36
				138
Discharged during 1933	...	...	...	11
Absconded during 1933	...	...	...	5
Died during 1933	...	...	...	3
Transferred during 1933	...	...	...	—
Remaining on 31-12-33	...	...	...	119

Immediate Causes of Death—

Leprosy and pulmonary tuberculosis	...	...	...	2
Leprosy	...	...	...	1

		Male	Female
Average daily number of patients for the year	...	84.41	111.38

RETURN SHOWING NUMBER OF PATIENTS TREATED BY INJECTIONS

		Male	Female
Ol Hydnocarpus with Iodine .5% ...	...	3,446	5,427
Alepol with .5% Carbolic ...	...	908	1,990
Mercurochrome 2% ...	...	83	130
Fluorescin 2% ...	...	100	383
Brilliant Green 1 ...	...	20	15
N. A. B. ...	...	53	119

TREATMENT

(1) General Treatment.

Every effort is made to eliminate other conditions with a view to raising the general resistance.

The patients are encouraged to lead a regular life with regard to hours for meals, rest and exercise. Particular attention is paid to personal hygiene.

Facilities are provided for such games as badminton, baseball, and ping-pong, and of these full advantage is taken.

Indoor games are also provided, and occasional supplies of illustrated papers are received, while newspapers are supplied free daily.

Missionaries of various denominations visit the settlements frequently, and at intervals provide the patients with entertainments.

All boys and girls attend school daily during the week. Instruction is given by the dressers.

(2) Special Routine Treatment.

(a) Subcutaneous infiltration of Ol Hydnocarpus with 0.5% Iodine is used. The commencing dose is $\frac{1}{2}$ c.c., and it is increased gradually to 5 c.c. according to the tolerance of the patient. The injections are discontinued temporarily when a lepra reaction occurs.

(b) *Alepol* with 0.5 Carbolic is also given intravenously. The commencing dose is 3 c.c., increasing gradually to 10 c.c. according to the tolerance of the patient. These injections too are discontinued for the same reasons. Lepa reaction is treated by rest, purgation, light diet, adrenalin or ephedrine, aspirin, phenacetin, Dover's powder or sodii salicylas.

(c) *Trichloracetic Acid Solution* is painted on the leprous lesions and helps to bring about their absorption in a good many cases.

(d) The dye treatment consisting of Mercurochrome 2%, Fluorescin 2% and Brilliant Green 1% was given to selected cases intravenously. The results have not been encouraging.

The following are the types of cases in the Settlements on 31-12-33 :—

(a) MALE LEPER SETTLEMENT

1. Mixed cutaneous and neural	...	...	...	15
2. Leprotic cutaneous lesions	...	...	...	64
3. Mixed cutaneous and nodular	...	...	...	7
4. Neural	...	...	...	5

Results of Treatment—

Arrested	...	...	...	5
Improved	...	...	...	25
Stationary	...	...	...	50
Retrogressing	...	...	...	11

(b) FEMALE LEPER SETTLEMENT

1. Mixed cutaneous and neural	...	...	...	22
2. Leprotic cutaneous lesions	...	...	...	73
3. Mixed cutaneous and nodular	...	...	...	15
4. Neural	...	...	...	9

Results of Treatment.

Arrested	...	...	...	20
Improved	...	...	...	43
Stationary	...	...	...	46
Retrogressing	...	...	...	10

APPENDIX "B"

Pulau Jerejak Settlement

ANNUAL REPORT 1933.

1. Inmates—

Total number remaining on 31-12-32	...	...	765
Admitted during the year	...	...	299

The total number treated was 1,064 as compared with 873 for the previous year.

				1932	1933
Died	...	...	...	80	84
Absconded	...	...	...	9	18
Discharged—Relieved	14	...	...	19	22
Cured	5	...	...	45	67
Transferred	...	...	...	—	1

The total admission of 299 included the 101 cases transferred from the Federal Leper Settlement, Sungei Buloh, to relieve overcrowding there. The 22 inmates who were discharged as relieved include 16 Indians and 6 Chinese. They were repatriated to India and China respectively.

One Chinese leper who had a wife and a child who were also lepers, was transferred to Sungei Buloh as facilities for mixed living are obtainable there.

The total number remaining on 31-12-33 was 894, classified as follows :—

Residential—

Straits Settlements	...	...	...	658
Federated Malay States	...	...	...	117
Kedah	...	...	...	108
Kelantan	...	...	...	11

Total ... 894

Nationality—

Chinese	...	...	...	...	725
Indians	...	...	...	...	127
Malays	...	...	...	...	25
Eurasians	...	...	...	...	13
Others	...	...	...	...	4
Total					894

The daily average number of inmates was 808.16 as compared with 717.14 for the previous year.

Percentage of deaths to total treated as compared with those for the previous 11 years :—

	<i>Inmates</i>	<i>Deaths</i>	<i>Rate</i>
1923	688	140	20.34
1924	726	130	17.90
1925	831	117	14.00
1926	850	117	16.16
1927	871	122	14.00
1928	879	102	11.37
1929	990	105	10.60
1930	1,058	125	11.81
1931	1,040	88	8.46
1932	873	80	9.16
1933	1,064	84	7.89

The chief causes of deaths during the year being :—

Septicaemia	...	...	31
Pulmonary tuberculosis	...	...	14
Chronic nephritis	...	...	10
Senility and heart failure	...	...	8
Pneumonia, lobar	...	...	6
Dysentery	...	...	4

2. Administration—

The Chief Medical Officer and the Senior Health Officer were visiting Medical Officers throughout the year.

The resident staff consisted of :—

- One Acting Senior Deputy Medical Officer.
- One Assistant Medical Officer.
- One Lay Superintendent.
- Eight Dressers.

Dr. E. V. VEERASINGHAM continued to be in charge of the Settlement during the year.

Dr. A. SOMASUNDARAM relieved Dr. AU KEE HOCK on 31st March, 1933 and Dr. J. E. SEEVARATNAM relieved the former on 1st November, 1933, according to the arrangement for the Assistant Medical Officers to do a six monthly tour in the Settlement.

Police—

The force consist of :—

- One Sikh N. C. O. from the Regular Police in Penang in charge.
- One Sikh Auxillary N. C. O.
- Seven Sikh Auxillary constables.

One N. C. O. and four constables are stationed in the Old Settlement and the other N. C. O. and three constables are stationed in the New Settlement.

3. Buildings.

No new buildings were erected during the year. Most of the existing buildings were maintained in repair. Several wards in the Old Settlement are dilapidated and beyond the possibility of improvement. A scheme for the gradual demolition of these wards and replacing with modern buildings, preferably huts as in Camp E, is under consideration.

The main block comprising 5 wards, was converted into a boys' camp, and all the boys under the age of 18 years are accommodated there. Two of these wards were converted into 14 cubicles to accommodate the educated and better class Chinese inmates.

The housing of the boys together, with facilities for in-door and out-door games, scouting and other amenities has remarkably enhanced their cheerfulness. They are also provided with a common dining and assembly room and a Chinese school.

The Settlement consists of four main camps which are apart from one another and require separate residential subordinate staff at each.

Old Settlement.—This is the oldest camp of the Settlement. It is definitely older than 60 years. The main block of brick buildings formed the nucleus, other semi-permanent wards were added later on by the Malay States to provide accommodation for their own lepers. It is these wards which are referred to above under this item as being dilapidated.

The authorised accommodation in this Camp is 380.

New Settlement.—This was originally the Quarantine Station for the port of Penang. When immigration from India increased with the boom in sugar and later rubber and this Camp was found inadequate and unsuitable, a new Quarantine Station was established on the northern part of the Island. The transfer took place in April, 1911. The name "New" does not in the least indicate it is more recent than that of the Old Settlement or that there is anything remarkably modern about it. The buildings are probably as old as those in the Old Settlement but due to extensive alterations and suitability of the site there is a far more cheerful appearance than in the dilapidated wards of the Old Settlement.

The authorised accommodation in this Camp is 300.

Camp "E".—This camp was completed and occupied in 1929. There are 54 huts in this camp, and each has a maximum accommodation for three. Each hut is provided with a small area surrounding it for gardening.

Flower gardening as a past time is a speciality. There is more home than institution effect in this camp. A prize of \$20 per year subscribed for by the staff for the best kept plot has acted as an inducement to the inmates to beautify this camp.

The authorised accommodation in this camp is 162.

Eurasian Camp.—This was the original site for the Cattle Quarantine for Penang which was transferred to Penang and Province Wellesley. A small camp with 8 rooms was initially started, later on another block of building with 8 more rooms was added. There is a common dining room and other back houses. This camp accommodates persons of better social status.

At present this camp is not reserved for Eurasians alone. Better class members of any other nationality are also accommodated here. There are in this camp a band stand, a club known as "Wheatly Club" and an English school.

Authorised accommodation in this camp is 18.

All the buildings in the Settlement are lighted by electricity.

There are in each of the three main camps:—Old Settlement, New Settlement and Camp "E"—a dispensary and a treatment room, while there is a hospital in the Old Settlement and another in the New Settlement. There is also a well equipped operation theatre in the New Settlement.

4. *Water Supply*—

Old Settlement Reservoir capacity	...	...	350,000 gallons.
New Settlement Reservoir (Green Bank) capacity	...	...	750,000 "
Camp "E" Reservoir capacity	...	...	750,000 "

There are also three deep wells in the New Settlement to supplement the inadequate supply for the "Green Bank" Reservoir.

There are in addition two small reservoirs, one in the Eurasian Camp and another behind the Lay Superintendent's Quarters. Their yield is negligible.

There was no shortage of water during the year and no water had to be imported from Penang as during all the previous years. An additional deep well was constructed in the New Settlement and this to a certain extent helped in tiding over the usual shortage of water for the New Settlement experienced during drought. The supply from the reservoirs in the Old Settlement and Camp "E" is sufficient with a fair margin.

Subsoil anti-mosquito drainage in the camps has provided in addition to a deep well which is capable of producing 2,000 to 3,000 gallons of water per day during drought, eight shallow wells which are popular bathing and washing places. This feature which is only a recent introduction has not only greatly relieved the tension of shortage experienced during the previous years but also helped to cut down the expenditure on water imported from Penang to an appreciable extent—1930—\$15,720; this was just prior to the construction of the deep anti-mosquito well in the New Settlement: 1931—\$1,681; 1932—\$2,011; 1933—Nil.

5. Rainfall—

The total rainfall for the year was 2242 m.m. as compared with 2538.5 m.m. for the previous year.

The maximum rainfall in any one day was 93 m.m.—on the 12th June.

6. Anti-Malarial Work—

Permanent works were completed in various other sites in the Settlement, and practically the whole island is being brought under permanent anti-mosquito control. Oiling of other potential areas has been carried out thoroughly and systematically. For the third year in succession there has been no case of malaria contracted within the Settlement.

7. Treatment—

There were 198 cases, excluding those from Sungei Buloh, admitted during the year and they were classified according to the stage of the disease, as follows:—

	Early	Moderately Advanced	Advanced	Total
Neural ...	4	6	3	13
Cutaneous ...	3	5	37	45
Mixed ...	5	10	125	140
	12	21	165	198

As can be seen from the above classification, out of the 198 cases admitted during the year, 12 were early and 21 moderately advanced.

It is a good sign that, probably because of better understanding of the early manifestations of the disease, moderately advanced and even early cases are being sent to the Settlement.

Still a large percentage of the cases admitted are advanced and unpromising for treatment.

Out of the total number of 1,064 who were in the Settlement, 812 were selected as suitable for intensive treatment: of whom 763 were under treatment with *Hydnocarpus* Oil or its derivatives and the remaining 49 were under various experimental remedies. Cases that were unsuitable for intensive anti-leprotic treatment were given general and symptomatic treatments.

Figures relating to cures and improvements are of doubtful value. The voluminous literature and figures available on the treatment of leprosy do not agree as to the efficacy or otherwise of any of the remedies used in the treatment of leprosy. Unfortunately, this is because of many aspects of the disease not being fully understood, but one has to bear in mind also that leprosy is a self-healing disease and due to certain yet unknown factors, the disease tends to become arrested at any stage of the disease. When a census of the cases, that were bacteriologically negative and free from all active signs of the disease, was taken in this settlement early in the year, it was found that 21 per cent. of the cases thus selected very irregularly attended or never had any treatment at all.

It is apparent, that though there is no "specific" in the treatment of leprosy, there is growing optimism as to the disease being "curable", at least in the sense that permanent relief can be brought to the sufferers.

The idea in the treatment of leprosy in this Settlement is that patients, when well fed and kept in good and congenial surroundings with some form of treatment, tended to get better. Every endeavour is made to raise the general resistance of the patients as it has been found that in patients with lowered resistance the disease developed more rapidly. Essentially, therefore, the first step in the treatment is to find out and remedy the cause or causes of the lowered resistance, which may be due to either one or more of the following causes:—

- (a) Concurrent disease—such as malaria, syphilis, helminthic infection, etc.
- (b) Dietary defects—such as insufficient, unsuitable or not properly prepared food.
- (c) Pernicious habits—such as laziness, overworking, overeating, etc.
- (d) Insanitary and sombre surroundings.
- (e) Mental factor—a cheerful patient responds easily to treatment.

At the outset it is realised that each patient should be treated individually and attention is not concentrated solely on the administration of a special drug.

Medicinal treatment with the *Hydnocarpus* Oil and its derivatives:—

- (a) *Hydnocarpus* Oil with 4 per cent. double distilled creosote added and sterilised at a temperature of 120°C for thirty minutes is used for intramuscular and subcutaneous injections.

- (b) Ethyl esters of hydnocarpus oil with 4 per cent. double distilled creosote added is also used for intramuscular and subcutaneous injections.

Both these preparations are administered in doses commencing from 1 c.c. and increased to 10 c.c. It is difficult to say which one of the two is more efficacious but the preparation of ethyl esters is easier to administer and less painful to the patient.

- (c) Iodised Ethyl Esters. This is prepared by boiling ethyl esters with 0.5 per cent. metallic iodine at a temperature of 150°C for thirty minutes. The solution of iodine is found to render it less irritating.

This preparation is used for intra-dermal injections. For this method of treatment, cases with a moderate number of lesions are selected. This method of treatment undoubtedly hastens the resolution of the leprosy lesions, either macular or nodular, but improvement was found to be more rapid in the former type. In a macule complete resolution is effected with one or two injections, whereas in a nodule it may be necessary to inject as many as four or five times. The effect is believed to be due to the counter irritation produced in the part of the skin injected. This form of treatment though painful, is popular because of the spectacular improvement produced.

- (d) Sodium Morrhuate. This drug has been found to be very useful in cases with low reaction level due to debilitating condition and in the treatment of the residual part of the disease, which does not further respond to treatment with hydnocarpus oil or esters. Its value seems to be purely nutritional. It is administered intravenously in a 3 per cent. sterile solution with 0.5 per cent. phenol added, commencing from a dose of 0.5 c.c. increased to 10 c.c.

- (e) Local treatments. One cannot disregard this treatment in leprosy. Rubbing of hydnocarpus, gingely and other oils while sitting in the sun is beneficial. Accelerated absorption of leprosy lesions may be produced by painting on a solution of trichloroacetic acid. This is used in two strengths—1 in 1 solution for nodules and 1 in 3 solution for diffuse lesions.

- (f) Lepa Reaction. Mercurochrome gives more consistent and satisfactory results than either fluorescein, brilliant green or trypan-blue. This drug at the same time is not toxic and better tolerated by the patients. It is administered intravenously in a one per cent. sterile solution commencing from 5 c.c. and increased to 10 c.c.

Various other drugs such as adrenalin, ephedrine, sodium salicylate and calcium chloride are also administered in lepra reaction.

- (g) Complications. Trophic ulcers. In addition to treatment for the general condition of the patient, cleanliness of the part and further avoidance of trauma give satisfactory results. Basic fuchsin, mercurochrome and potassium permanganate are used for the dressings. Weekly intravenous injections of tr. iodine in doses of 10 minims diluted in 10 c.c. of saline were found to be useful in trophic ulcers with secondary infection. True leprotic ulcers respond well to dressings with hydnocarpus oil with iodoform or a solution of camphor and carbolic in equal parts.

Ambulatory treatment was tried in a number of leprotic and trophic ulcer cases. It was not found to be of any value in such cases. This treatment was also carried out in a number of ordinary chronic ulcers of non-leprotic origin and in all the cases the improvements were remarkable. Ulcers that have been stationary for even years have healed up with one or two applications of the treatment. One application usually lasts two weeks.

- (h) Duration of treatment in leprosy. The length of treatment is a very important matter. Relapses often occur in insufficiently treated cases. Treatment is carried out until repeated bacteriological examinations have failed to demonstrate the bacilli for a period of at least one year and all active signs have been absent for a similar period. The aim is to carry on the treatment for at least two years after all the active signs have disappeared.

- (i) Discharge on parole. A certain number of cases are discharged every year. In most of the cases no address is obtainable owing to the floating nature of the Indian and Chinese population in Malaya. They are, however, advised to report at the nearest Government Hospital or Dispensary once in three months. In only a small percentage of the cases discharged, it was possible to arrange for regular periodical examination and further treatment. A lot depends on the discharged patient being able to get suitable housing, food and other comforts after his discharge.

Out of the 54 patients who were discharged from this Settlement during the last three years as "cured" two were readmitted with relapse. It was quite evident in these two cases that they were unable to provide themselves with adequate comforts after they were discharged. The practice of discharging such cases in the absence of treatment and periodical bacteriological examination seems of doubtful benefit.

8. *Various activities by the Inmates—*

As much freedom as possible within the confines of the Island and encouragement are given to the lepers to lead normal lives and employ themselves at any useful occupation for which they are suited. During the year several of them were engaged in useful and lucrative work.

Employment is given to a number of able-bodied men as menials, attendants, barbers, sweepers, dhobies, toties, wood-cutters, etc.; for which allowances varying from \$3 to \$10 per month are paid by the Government. A few educated lepers are employed as teachers, dressers, tindals and band master.

Many take a lively interest as independent artisans in various ventures, such as carpenters, growers of vegetables and fruits, poultry farmers and fishermen. There are several shops in the Settlement which are managed by the inmates themselves.

Two large tracts of land have been set apart for the cultivation of fruits and vegetables and poultry farming. The provision of a small piece of ground around each hut for gardening in Camp "E" can be considered to be the best ideal for an institution of this kind.

The band now consisting of 11 educated inmates with a Philippino bandmaster continued to be popular. In addition to moonlight entertainments they supply the necessary music at the theatrical performances. Lessons in music are also given by the bandmaster to any one who is apt and willing to learn.

Several performances were given by the five theatrical troupes—three Chinese, one Malay and one Tamil—during the year. Every one of them has its own playwrights, scene painters and artists who are undoubtedly of no mean order.

Out-door games, such as football and volley ball games, badminton, swimming and fishing were indulged in to an appreciable extent.

The "Wheatley Club" of which practically all the educated inmates are members, has been chiefly instrumental in promoting out-door games, sports and picnics for the boys. Due to the generosity of several members of the public and clubs in Penang and Province Wellesley, this club has a well stocked library and is in receipt of regular contributions of periodicals, illustrated journals, newspapers, gramophones, records and various other useful articles.

There are two schools—English and Chinese. As most of the children of school age are Chinese the problem of education is simplified. The system is bi-lingual—Chinese and English. The children first study Chinese and after a certain amount of progress in this language they are transferred to the English school.

There have been 9 boys attending the English and 19 boys attending the Chinese classes.

There have been 17 new scouts enrolled in the Boy Scout Troop which now has a total membership of 39. The troop carried out regular exercises. There were two inspections during the year, one by the Scout Commissioner for Malaya and another by the District Commissioner, Penang. The Settlement troop is now affiliated with the Scout Organisation of Malaya.

For further information on the various activities by the inmates *see* Appendix D.

9. *General—*

The health of the inmates and staff has been good. There has been fairly good attendance for treatment which is not compulsory. The discipline among the inmates continued to be excellent and there has been no serious breach of the peace. There has been further progress in the normal activities in the Settlement.

The Government Agricultural Field Officer and his Malay Assistant visit the Settlement periodically to advise in matters relating to agriculture. On the advice of the Field Officer, 101 fruit trees comprising 9 local varieties have been planted on the island and are doing well. It is anticipated that after a lapse of five years there should be an abundant supply of fruit for the inmates.

10. The following returns are attached:—

Appendix A.—Showing the number of admissions and deaths.

Appendix B.—Showing the nationality of the inmates.

Appendix C.—Showing the normal occupations of the inmates.

Appendix D.—Album with photos taken in the Settlement.

FEMALE SETTLEMENT, PENANG

1. *The Inmates.*—

(a) The total number remaining on 31-12-32 ...	...	...	67
The total number admitted during 1933 ...	...	...	13
made up the following :—			
Colonial ...	...	...	11
Kedah ...	...	...	2
F.M.S. ...	...	...	—
Total ...			13
The total number remaining on 31-12-33 ...	...	...	59
made up of the following :—			
Colonial ...	...	...	49
Kedah ...	...	...	6
F.M.S. ...	...	...	4
Total ...			59
(b) The total number of deaths for 1933 ...	...	...	12
The percentage of deaths to total treated for 1933 ...	...	...	15
The percentage of deaths to total treated for 1932 ...	...	...	13.75
The cases that died in 1933 were all very advanced cases with complications. <i>e.g.</i> pulmonary tuberculosis, pneumonia and dysentery.			
(c) Total number discharged as cured ...	...	...	Nil
Total number discharged as relieved ...	...	...	3
Of these 2 Tamils were repatriated to India, and one Chinese was taken to Siam.			
(d) Total number absconded ...	...	...	1
(e) Total number transferred ...	...	...	5
Of these 2 leper boys were sent to Pulau Jerejak Settlement, two patients to Sungei Buloh Leper Camp and one was transferred to General Hospital, Penang, for operation, after which she was re-admitted into the Camp.			
(f) Average number of inmates on any one day ...	...	...	64.04
(g) Maximum number of inmates on any one day ...	...	...	68

2. *The Staff consists of.*—

- (a) A part time Deputy Medical Officer, who visits the Camp once a month.
- (b) A part time Assistant Medical Officer, who visits daily.
- (c) A part time Grade II Dresser, who lives at the Settlement.
- (d) A female leper attendant.
- (e) A non-leper toty.
- (f) A daily paid leper dhoby.

3. *Activities in the Camp.*—

Most of the inmates' time is spent in cooking, sewing, and other forms of domestic occupation and indoor games. Some devote their time to poultry farming and vegetable gardening, which provide sufficient outdoor exercise for them. It is interesting to note how neat and clean the gardens and poultry yard have been kept.

4. *The Treatment.*—

The treatment with dyes has been found unsuccessful and has been stopped. Besides treating the patient for leprosy every effort is made to improve the general constitution, and also by treating any accompanying disease. The routine treatment is the same as that carried out by the officer in charge of Pulau Jerejak who also supervises the treatment in this Camp.

5. *Result of Treatment.*—

Most of the cases suffer from mixed type of leprosy. The cutaneous lesions improve quicker than the neural type. This is specially shewn by intradermal injections of the patches locally with iodised ethyl esters, the result of which can be seen after one week. It gives a certain amount of dark discolouration of the skin and subsequently the patch clears up. Notwithstanding the painful and difficult nature of the treatment it is popular with most of the patients, because of the early apparent results produced.

Erythematous patches are also painted with trichloroacetic acid followed by application with chaulmoogra oil. After a fortnight they leave a whitish supple scar.

Pure chaulmoogra oil and ethyl esters of hydnocarpus oil with creosote are also given intramuscularly and subcutaneously. These two also give good results as may be seen by the many negative smears taken from time to time. At present these cases are still under observation, hoping to get a discharge after some time.

On the whole the results are very encouraging. There is always a good turn out in the number of cases coming for injection on injection days.

There are also very few advanced cases who are treated with chaulmoogra oil only by mouth, and who shew very little or no improvement.

There have also been a few cases shewing general reactions, and they are given 1% Mercurochrome solution, intravenously, all other injections having been stopped.

6. General.—

1. Two male leper boys were transferred to the Pulau Jerejak Settlement.
2. On Christmas Eve a few missionaries visited the camp and distributed presents to the inmates.
3. On the whole the inmates of the camp are happy and contented.

APPENDIX "C"

REPORT ON THE PATHOLOGICAL BRANCH, STRAITS SETTLEMENTS, 1933

I.—SINGAPORE

by

Dr. J. C. TULL, M.D., F.R.C.P., *Government Pathologist.*

A.—PATHOLOGICAL DIVISION

The total number of specimens examined during the year was 8,373, an increase of 2,065 over 1932. These specimens included 793 pieces of tissue submitted for histological examination and report, and 7,538 sera submitted for complement fixation and Kahn tests for syphilis. These sera were received from the following institutions mainly :—

Tan Tock Seng Hospital	...	...	...	2,658
General Hospital	...	...	...	1,978
The Anti-Opium Clinic	...	...	...	624
Police	...	...	...	509
The Mental Hospital	...	...	...	407
The Settlement of Labuan	...	...	...	70
Kandang Kerbau Hospital	...	...	...	39
The Leper Settlement	...	...	...	38

2. A comparative test between Wassermann positivity and Kahn positivity was carried out in 7,058 sera, with an agreement between the tests of 83.5 per cent., both tests being positive in 3,328 cases, and both negative in 2,569 cases.

3. Fifteen colloidal gold tests on cerebro-spinal fluid were performed for the General Hospital.

4. The mounting and describing of pathological specimens has been continued throughout the year. Thirty specimens of primary carcinoma of the liver have been mounted in formalised gelatin and placed in frames, as well as other specimens of special interest.

5. The teaching of general, special and clinical pathology, and medical jurisprudence to students of King Edward VII College of Medicine has been carried on throughout the year.

6. Special investigations into cirrhosis of the liver have been started, with a view to ascertaining, if possible, what are the causes associated with its frequency as seen at post mortem examination.

7. The total number of autopsies performed was 1,470, of which 1,049 were performed at Tan Tock Seng Hospital, and 421 in the Central Mortuary. Of these 1,470 autopsies 551 were performed for His Majesty's Coroner.

(a) Tan Tock Seng Hospital.—

Total number of autopsies 1,049.

Number of autopsies on patients dying :—

(i) within 24 hours of admission	...	...	70
(ii) within 48 hours of admission	...	...	22

(b) Central Mortuary.—

As most of the autopsies performed at this mortuary were Coroner's cases, brought from outside limits, the duration of illness was not ascertainable.

8. Return showing immediate cause of death—

			Tan Tock Seng Hospital	Central Mortuary
Asphyxia from	(a) drowning	...	16	18
	(b) hanging	...	8	39
	(c) suffocation	...	1	—
	(d) Petrol fumes	...	—	1
Burns	...	...	2	2
Cut throat	...	...	—	6
Electrocution	...	...	—	1
Injuries from	(a) gunshot wounds	...	1	2
	(b) motor car accidents	...	21	22
	(c) stab wounds	...	6	8
	(d) other assault wounds	...	27	50
Still born	...	...	1	8
Scalds	...	...	1	1
Poisoning	(a) Carbolic Acid	...	—	4
	(b) Caustic soda	...	—	9
	(c) Opium	...	—	3
	(d) Phosphorus	...	—	1
	(e) Tuba root	...	3	—
	(f) Ptomaines	...	—	1
Acute cardiac beri-beri	...	...	49	15
General peritonitis following perforated appendix	...	...	5	1
Adherent pericardium with heart failure	...	...	1	—
Cellulitis following	(a) abscess neck	...	3	—
	(b) retropharyngeal abscess	...	1	—
Acute hæmorrhagic pancreatitis	...	...	—	1
Anæmia	(a) primary	...	1	1
	(b) secondary	...	7	1
	(c) splenic	...	2	—
Aneurism of thoracic aorta, with rupture	...	...	11	9
Senile arteriosclerosis	...	...	46	4
Bronchiectasis with heart failure	...	...	4	—
Cellulitis of thigh	...	...	8	—
Cerebral	(a) hæmorrhage	...	10	6
	(b) softening	...	5	—
	(c) abscess	...	1	—
	(d) thrombosis	...	—	1
Chronic bronchitis and emphysema	...	...	6	—
Septic cholangitis	...	...	9	2
Intestinal obstruction by fibrous bands	...	...	1	—
Coronary thrombosis	...	...	2	3
Cysticercus cellulose of brain	...	...	1	—
Diabetes mellitus	...	...	2	—
Disseminate (insular) sclerosis	...	...	2	—
Duodenal ulcer	(a) hæmorrhage	...	2	—
	(b) perforation, and peritonitis	...	4	—
Dysentery	(a) acute amœbic	...	7	—
	(b) chronic amœbic	...	7	—
	(c) acute bacillary	...	33	6
	(d) chronic bacillary	...	4	—
	(e) mixed	...	4	—
Eclampsia	...	...	7	1
Empyema following pneumonia	...	...	7	1
Endocarditis	(a) acute aortic	...	2	1
	(b) acute aortic and mitral	...	2	—
	(c) acute mitral	...	2	—
	(d) chronic aortic	...	2	1
	(e) chronic mitral, with stenosis	...	2	1
	(f) chronic mitral and aortic with stenosis	...	1	—
Endometritis, acute septic	...	...	1	—
Septicæmia following gangrene of buttock	...	...	1	—
Gangrene of lung	...	...	1	1

			Tan Tock Seng Hospital	Central Mortuary
Gastric ulcer (a) chronic ...	...	...	6	1
(b) with hæmorrhage ...	...	...	—	2
(c) with perforation and peritonitis	...	...	8	2
General paralysis of the insane ...	...	...	—	1
General peritonitis of undetermined cause ...	...	...	4	2
Hæmorrhage from ruptured ectopic gestation ...	...	...	—	1
Cirrhosis of Liver (a) portal ...	...	...	12	1
(b) biliary ...	...	...	2	1
(c) syphilitic ...	...	...	6	—
(d) with schistosomiasis ...	...	...	2	—
Mural infarct of heart, with rupture ...	...	...	1	—
Inanition ...	...	...	1	—
Leprosy ...	...	...	8	—
Abscess lung ...	...	...	8	2
Malaria (a) acute subtertian ...	...	...	29	3
(b) acute benign tertian ...	...	...	6	—
(c) acute tertian and subtertian ...	...	...	2	—
(d) malarial cachexia ...	...	...	1	2
Meningitis (a) pneumococcal ...	...	...	1	—
(b) streptococcal ...	...	...	3	2
(c) syphilitic ...	...	...	1	1
(d) tuberculous ...	...	...	5	7
Myocardial degeneration ...	...	...	16	1
Malignant neoplasms ...	...	...	63	9
including (a) Primary carcinoma of liver ...	...	...	14	—
(b) Carcinoma of stomach ...	...	...	14	—
(c) Carcinoma of œsophagus ...	...	...	10	—
(d) Carcinoma of lung ...	...	...	7	—
(e) Carcinoma of nasopharynx ...	...	...	4	—
(f) Carcinoma of cheek ...	...	...	2	—
(g) Carcinoma of rectum ...	...	...	2	—
(h) Carcinoma of larynx ...	...	...	1	—
(i) Carcinoma of cæcum ...	...	...	1	—
(j) Carcinoma of ovary ...	...	...	1	—
(k) Brain tumours ...	...	...	5	—
(l) Sarcoma of femur ...	...	...	1	—
(m) Sarcoma of mediastinum ...	...	...	1	—
(n) Retroperitoneal sarcoma ...	...	...	1	—
(o) Sarcoma of testis ...	...	...	1	—
Myeloid leukaemia ...	...	...	1	—
Nephritis (a) subacute ...	...	...	4	1
(b) chronic ...	...	...	27	1
Osteomyelitis ...	...	...	2	1
Acute pericarditis ...	...	...	3	—
Paralytic ileus ...	...	...	—	1
Pneumonia (a) lobar ...	...	...	47	20
(b) broncho ...	...	...	25	65
Premature birth ...	...	...	1	3
Pyelonephritis, with cystitis ...	...	...	3	1
Pyonephrosis and hydronephrosis ...	...	...	3	—
Syphilitic aortitis, with aortic incompetence ...	...	...	35	10
Visceral syphilis ...	...	...	26	3
Syphilis of nervous system ...	...	...	4	—
Strangulated hernia ...	...	...	1	—
Congenital pyloric stenosis ...	...	...	—	1
Tetanus ...	...	...	3	1
Typhoid fever ...	...	...	22	2
Tuberculosis (a) pulmonary ...	...	...	255	16
(b) pulmonary and intestinal ...	...	...	13	2
(c) generalised ...	...	...	3	3
(d) of joints ...	...	...	5	—
(e) of pericardium ...	...	...	1	—
Volvulus of large intestine ...	...	...	—	1

MAIN CAUSES OF DEATH, EXCLUSIVE OF CORONER'S CASES, BY MONTHS AS ASCERTAINED AT AUTOPSY AT TAN TOCK SENG HOSPITAL.

Month	Number of autopsies	Pulmonary tuberculosis	Malaria	Lobar pneumonia	Dysentery amoebic & bacillary	Acute cardiac Beri-Beri	Typhoid fever	Syphilis	Others	Coroner's cases
January ..	93	22	1	3	6	5	..	4	36	16
February ..	84	17	3	2	3	4	1	5	32	17
March ..	79	28	2	..	7	1	1	1	22	17
April ..	80	21	2	2	3	3	1	5	26	17
May ..	93	22	4	4	8	5	1	6	25	18
June ..	88	19	8	8	5	5	1	2	28	12
July ..	96	23	2	9	3	6	3	4	29	17
August ..	80	22	4	1	3	2	6	5	19	18
September ..	80	23	1	4	1	7	2	5	21	16
October ..	91	19	6	3	2	3	2	7	31	18
November ..	92	24	1	4	6	4	3	6	29	15
December ..	93	15	2	3	2	3	0	11	27	30
Total ..	1,049	255	36	43	49	48	21	61	325	211

MAIN CAUSES OF DEATH IN 1933, AS COMPARED WITH 1932 AS ASCERTAINED AT AUTOPSY IN TAN TOCK SENG HOSPITAL.

—	Number of autopsies	Pulmonary tuberculosis	Malaria	Lobar pneumonia	Dysentery	Beri-Beri	Typhoid fever	Syphilis	Coroner's cases
1932	1,116	267 or 23%	60 or 5.4%	40 or 3.6%	66 or 5.9%	47 or 4.2%	12 or 1.1%	68 or 6.1%	236 or 21.1%
1933	1,049	255 or 24.3%	36 or 3.4%	43 or 4%	49 or 4.6%	48 or 4.5%	21 or 2%	61 or 5.8%	211 or 20.1%

STAFF

Dr. J. C. TULL, Government Pathologist, returned from furlough on 20th January, and resumed charge of this Branch from that date, Dr. HOPKINS, Government Bacteriologist, reverting to his substantive post from that date.

Dr. J. C. TULL was elected a Fellow of the Royal College of Physicians of London in May.

B. BACTERIOLOGICAL DIVISION

The work of this division consists in the routine bacteriological examination of specimens received from the General Hospital, Tan Tock Seng Hospital, Government Clinics and Dispensaries, Singapore, and includes cultural examinations, serological tests (Widal and Weil-Felix), and the preparation of autogenous and prophylactic vaccines. In addition medico-legal exhibits are examined for the presence of seminal stains.

The total number of specimens examined throughout the year was 4,503.

B. typhosus was isolated from the Widal clot in 115 cases, from the stool in 65 cases, and from the urine in 33 cases. *B. typhosus* was isolated from the cerebro-spinal fluid in one case of typhoid fever. *B. dysenteriae* (Flexner) was isolated from the stool in 165 cases.

During the early part of the year an outbreak of typhoid fever occurred in certain of the Singapore schools. Four and a half litres of T.A.B. vaccine were supplied by this division for the use of the Government Health Department for prophylactic inoculation.

Later on in the year several cases of diphtheria occurred in certain of the schools, and 426 throat swabs were examined for the presence of *B. diphtheriae* by this division for the Government Health Department.

The staff consisted of the Government Bacteriologist, one assistant bacteriologist, Dr. C. H. CHEE, one laboratory assistant, Mr. CHUA CHOR KAI, and one peon.

Dr. J. R. JACOB was in charge of the division for the first three weeks of the year, and Dr. H. O. HOPKINS, Government Bacteriologist, was in charge for the remainder of the year.

The work of the staff throughout the year was most satisfactory, especially during the outbreaks of typhoid fever and diphtheria in the Singapore schools, when much additional work devolved on the staff of this division.

Total number of specimens	...	...	...	...	4,503
Blood Cultures	...	...	...	...	195
<i>B. typhosus</i> isolated	...	...	...	...	19
Streptococcus isolated	...	...	...	...	2
Pneumococcus isolated	...	...	...	...	1
Staphylococcus aureus isolated	...	...	...	...	2
Blood Cultures (Widal clots)	...	...	...	...	712
<i>B. typhosus</i> isolated	...	...	...	...	115
Blood Widal reactions	...	...	...	...	712
Positive to <i>B. typhosus</i>	...	...	...	...	145
Positive to <i>B. para</i> "A"	...	...	...	...	1
Positive to <i>B. para</i> "B"	...	...	...	...	2
Blood Weil-Felix reactions	...	...	...	...	35
Positive to <i>B. proteus</i> × 19 "K" strain	...	...	...	...	1
Positive to <i>B. proteus</i> × 19 "W" strain	...	...	...	...	1
Stools examined culturally for enteric group	...	...	...	...	274
<i>B. typhosus</i> isolated	...	...	...	...	65
Stools examined culturally for dysentery group	...	...	...	...	539
<i>B. dysenteriae</i> (Shiga) isolated	...	...	...	...	5
<i>B. dysenteriae</i> (Flexner) isolated	...	...	...	...	165
<i>B. dysenteriae</i> (Sonne) isolated	...	...	...	...	5
Urine examined culturally	...	...	...	...	454
<i>B. typhosus</i> isolated	...	...	...	...	33
<i>B. coli</i> group isolated	...	...	...	...	74
Staphylococcus aureus isolated	...	...	...	...	6
<i>B. tuberculosis</i> seen on direct smear	...	...	...	...	2
Throat swabs examined bacteriologically	...	...	...	...	892
Positive to <i>B. diphtheriae</i>	...	...	...	...	49
Positive to Vincent's organisms	...	...	...	...	4
Nasal swabs examined bacteriologically	...	...	...	...	10
Positive to <i>B. diphtheriae</i>	...	...	...	...	3
Cerebro-spinal fluid examined bacteriologically	...	...	...	...	34
Positive to meningococcus	...	...	...	...	—
Positive to pneumococcus	...	...	...	...	1
Positive to streptococcus	...	...	...	...	1
Positive to <i>B. typhosus</i>	...	...	...	...	1
Positive to <i>B. tuberculosis</i> (direct smear)	...	...	...	...	1
Dental swabs examined bacteriologically	...	...	...	...	34
Positive to Vincent's organisms	...	...	...	...	24
Eye swabs examined bacteriologically	...	...	...	...	70
Eye smears examined bacteriologically	...	...	...	...	123
Positive to Koch-Weeks bacillus	...	...	...	...	8
Positive to Morax-Axenfeld bacillus	...	...	...	...	6
Positive to gonococcus	...	...	...	...	4
Pus examined bacteriologically	...	...	...	...	71
Positive to staphylococcus aureus	...	...	...	...	24
Positive to streptococcus	...	...	...	...	7
Positive to pneumococcus	...	...	...	...	3
Pleural fluids examined bacteriologically	...	...	...	...	40
Positive to staphylococcus aureus	...	...	...	...	1
Positive to pneumococcus	...	...	...	...	7
Synovial fluids examined bacteriologically	...	...	...	...	13
Positive to streptococcus	...	...	...	...	2
Milk examined bacteriologically	...	...	...	...	68
Preparation of autogenous vaccines	...	...	...	...	54
Animal inoculations for diagnosis of <i>B. tuberculosis</i>	...	...	...	...	19
Smears from other sources	...	...	...	...	9
Swabs from other sources	...	...	...	...	18
Medico-legal exhibits	...	...	...	...	18
Miscellaneous	...	...	...	...	109

II.—PENANG

by

J. A. COWAN, M.B., B.S., D.T.M., GOVERNMENT PATHOLOGIST, PENANG

Blood film examined	...	...	...	232
Positive to <i>Plasmodium falciparum</i>	...	...	...	47
Positive to <i>P. vivax</i>	...	...	...	15
Positive to <i>P. malariae</i>	...	...	...	3
Blood counts, total	...	...	...	572
Blood, counts, differential	...	...	...	451
Blood, hæmoglobin estimations	...	...	...	193
Blood, chemical examinations	...	...	...	101
Blood, cultures	...	...	...	30
Blood, Widal reactions	...	...	...	147
Positive to <i>Bact. typhosus</i>	...	...	...	37
Positive to Para "A"	...	...	...	1
Positive to Para "C"	...	...	...	1
Fæces, microscopical examinations	...	...	...	822
Positive to <i>Entamæba histolytica</i>	...	...	...	93
Positive to <i>Ankylostome ova</i>	...	...	...	29
Positive to <i>Ascaris ova</i>	...	...	...	42
Positive to <i>Hymenolepis nana ova</i>	...	...	...	6
Positive to <i>Clonorchis sinensis ova</i>	...	...	...	3
Fæces, bacteriological examinations	...	...	...	467
Positive to <i>Bact. typhosus</i>	...	...	...	5
Positive to <i>Bact. shigæ</i>	...	...	...	1
Positive to <i>Bact. flexneri</i>	...	...	...	46
Positive to <i>Bact. schmitz</i>	...	...	...	2
Positive to <i>Bact. morgani</i>	...	...	...	3
Positive to <i>Myco. tuberculosis</i>	...	...	...	1
Fæces, chemical examinations	...	...	...	41
Urine, routine clinical examinations	...	...	...	143
Urine, quantitative chemical examinations	...	...	...	85
Urine, bacteriological examinations	...	...	...	95
Positive to <i>Bact. coli</i>	...	...	...	25
Spinal fluid, chemical examinations	...	...	...	20
Spinal fluid, cell counts	...	...	...	38
Spinal fluid, colloidal tests	...	...	...	10
Spinal fluids, bacteriological examinations	...	...	...	35
Positive to <i>Myco. tuberculosis</i>	...	...	...	3
Positive to <i>pneumococci</i>	...	...	...	1
Sputa, examined for <i>Myco. tuberculosis</i>	...	...	...	38
Positive	...	...	...	13
Throat swabs, smears examined	...	...	...	157
Throat swabs, cultures examined	...	...	...	590
Positive to <i>C. diphtheriæ</i>	...	...	...	82
Pus etc., smears examined	...	...	...	1,068
Smears examined for leprosy bacilli	...	...	...	277
Positive	...	...	...	36
Body fluids, bacteriological examinations	...	...	...	37
Positive to <i>Streptococci</i>	...	...	...	5
Positive to <i>Myco. tuberculosis</i>	...	...	...	5
Vaccines prepared	...	...	...	11
Histological sections examined	...	...	...	54
Fractional test meals examined	...	...	...	9
Animal inoculations, for diagnosis	...	...	...	19
Waters examined bacteriologically	...	...	...	68
Milk specimens examined bacteriologically	...	...	...	1
Autopsies, Hospital cases	...	...	...	133
Autopsies, H. M. Coroner's cases	...	...	...	128
Medico-legal examinations, total	...	...	...	69
Blood, Wassermann tests	...	...	...	6,362
Positive	...	...	...	2,154

Blood, Kahn precipitation tests (standard antigen)	...	...	2,498
Positive	...	...	833
Blood, gonococcal complement-fixation tests	...	...	4
Positive	...	...	1
Spinal fluid, Wassermann tests	...	...	52
Positive	...	...	7
Spinal fluid, Kahn tests	...	...	1
Positive	...	...	1
Other examinations, miscellaneous	...	...	87

Dr. COWAN has been in charge of the laboratory throughout the year.

RETURN OF CAUSES OF DEATH, AS ASCERTAINED AT AUTOPSY, 1933.

H. M. Coroner's cases.

Beri-beri	...	...	...	...	11
Malaria, subtertian	...	...	...	...	1
Pneumonia, lobar	...	...	...	...	5
Toxæmia, from ulcerative stomatitis	...	...	...	...	1
Syphilis, vascular	...	...	...	...	3
Syphilis, visceral	...	...	...	...	1
Tetanus	...	...	...	...	1
Tuberculosis, pulmonary	...	...	...	...	3
Carcinoma, stomach	...	...	...	...	1
Carcinoma, œsophagus	...	...	...	...	1
Poisoning, with caustic soda, suicidal	...	...	...	...	2
Cerebral hæmorrhage	...	...	...	...	2
Myocarditis, chronic	...	...	...	...	2
Aneurysm of arch of aorta, ruptured	...	...	...	...	2
Aneurysm of descending portion of aorta, ruptured	...	...	...	...	1
Hypostatic pneumonia	...	...	...	...	1
Chronic gastric ulcer	...	...	...	...	1
Cirrhosis liver	...	...	...	...	1
Chronic interstitial nephritis	...	...	...	...	2
Hæmorrhage from umbilical cord, at birth	...	...	...	...	1
Still birth	...	...	...	...	2
Effects of heat, burns	...	...	...	...	3
Asphyxia, from submersion	...	...	...	...	12
Asphyxia, from overlaying	...	...	...	...	1
Asphyxia, from hanging	...	...	...	...	15
Fracture skull (vault)	...	...	...	...	5
Fracture skull (base)	...	...	...	...	9
Traumatic cerebral hæmorrhage	...	...	...	...	1
Rupture of trachea, aspiration pneumonia	...	...	...	...	1
Cut throat, hæmorrhage	...	...	...	...	2
Cut throat, aspiration pneumonia	...	...	...	...	1
Stab wound, neck	...	...	...	...	2
Fracture spine	...	...	...	...	2
Stab wound, abdomen	...	...	...	...	1
Traumatic rupture, small intestine	...	...	...	...	2
Traumatic rupture, spleen	...	...	...	...	1
Traumatic rupture, urinary bladder	...	...	...	...	2
Multiple injuries	...	...	...	...	13
Unascertainable, owing to advanced decomposition	...	...	...	...	9

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RETURN OF CAUSES OF DEATH, AS ASCERTAINED AT AUTOPSY, 1933.

Hospital cases.

Beri-beri	...	...	...	...	31
Dysentery, bacillary	...	...	...	...	4
Dysentery, amœbic	...	...	...	...	3
Typhoid fever	...	...	...	...	3
Enteritis	...	...	...	...	2
Malaria, sub-tertian	...	...	...	...	5
Malaria, benign tertian	...	...	...	...	1
Pneumonia, lobar	...	...	...	...	13
Pneumococcal peritonitis	...	...	...	...	1
Toxæmia, from abscess neck	...	...	...	...	1

Syphilis, vascular	...	...	...	...	...	1
Syphilis, visceral	...	...	...	...	...	5
Tuberculosis, pulmonary	...	...	...	...	...	10
Tuberculosis, meningeal	...	...	...	...	...	1
Tuberculosis, generalised	...	...	...	...	...	2
Carcinoma stomach	...	...	...	...	...	3
Carcinoma liver	...	...	...	...	...	3
Carcinoma oesophagus	...	...	...	...	...	2
Carcinoma gall bladder	...	...	...	...	...	1
Sarcoma brain	...	...	...	...	...	2
Sarcoma, retroperitoneal	...	...	...	...	...	1
Encephalitis, acute	...	...	...	...	...	2
Cerebral hæmorrhage	...	...	...	...	...	7
Pericarditis	...	...	...	...	...	1
Acute ulcerative endocarditis, aortic	...	...	...	...	...	1
Acute ulcerative endocarditis, mitral	...	...	...	...	...	1
Chronic valvular disease of the heart, mitral	...	...	...	...	...	1
Chronic myocarditis	...	...	...	...	...	3
Chronic bronchitis, with cardiac failure	...	...	...	...	...	1
Hypostatic pneumonia	...	...	...	...	...	1
Broncho-pneumonia	...	...	...	...	...	2
Abscess lung	...	...	...	...	...	1
Empyema thoracis	...	...	...	...	...	2
Colitis, acute ulcerative	...	...	...	...	...	1
Intestinal obstruction	...	...	...	...	...	1
Cirrhosis liver	...	...	...	...	...	3
Acute yellow atrophy of liver	...	...	...	...	...	1
General peritonitis, perforated gastric ulcer	...	...	...	...	...	1
General peritonitis, vorvulus	...	...	...	...	...	1
Chronic interstitial nephritis	...	...	...	...	...	3
Acute pyelonephritis	...	...	...	...	...	2
Suppurative cystitis	...	...	...	...	...	1
Congenital malformation of urinary apparatus	...	...	...	...	...	1

133

III.—MALACCA

The total number of examinations conducted during the year was 19,521 as against 17,796 for the year 1932.

Details of the above are as set out below:—

			No. in which positive results were obtained	Total examined
Animal inoculations	...	...	—	8
Biochemical tests on blood and urine	...	...	—	134
Blood counts	...	...	—	92
Blood film for malarial parasites	...	...	—	2,729
Subtertian parasites seen	...	...	280	—
Benign tertian parasites seen	...	...	141	—
Quartan parasites seen	...	...	50	—
Subtertian and benign tertian	...	...	10	—
Quartan and benign tertian	...	...	3	—
Blood film for filaria	...	...	1	6
Cerebro-spinal fluid examinations	...	...	—	28
Cultures from blood	...	...	—	11
Cultures for C. diphtheriæ	...	...	21	163
Cultures for gonococci	...	...	—	4
Cultures for meningococci	...	...	1	21
Cultures from stools	...	...	—	47
Positive to enteric group	...	...	7	—
Cultures from urine	...	...	—	48
Dark-ground examinations for t. pallidum	...	...	—	2
Dark-ground examinations for leptospira	...	...	—	6
Films for gonococci	...	...	458	900
Films for other organisms	...	...	—	35
Gastric analysis	...	...	—	12
Kahn tests	...	...	891	1,901

			No. in which positive results were obtained	Total examined
Medico-legal exhibits	...	...	—	10
Scrapings for fungi	...	...	—	10
Sections	...	...	—	51
Skin clippings for m. lepræ	...	...	53	129
Sputum	...	...	—	1,005
Positive to tubercle bacilli	...	...	192	—
Positive to pneumococci	...	...	112	—
Stools for ova	...	...	—	3,538
Ankylostomum duodenale	...	...	1,018	—
Ascaris lumbricoides	...	...	206	—
Trichuris trichiura	...	...	329	—
Oxyuris vermicularis	...	...	27	—
Ankylostome and ascaris	...	...	150	—
Ankylostome and trichuris	...	...	339	—
Ascaris and trichuris	...	...	216	—
Ascaris, ankylostome and trichuris	...	...	254	—
Stools for protozoa	...	...	—	148
E. histolytica	...	...	18	—
Stools for tubercle bacilli	...	...	1	2
Urine—general examination	...	...	—	4,581
estimations of sugar	...	...	—	232
albumin	...	...	—	3
Urine for tubercle bacilli	...	...	1	3
Vaccines autogenous	...	...	—	4
Wassermann tests	...	...	1,443	3,113
Water analysis	...	...	—	49
Urine	...	...	—	235
Prositiv to typhoid	...	...	41	—
Para A	...	...	7	—
Weil-Felix tests	...	...	3	7
Post mortem examinations	...	...	—	92
Miscellaneous examinations	...	...	—	162

T. A. B. VACCINE was prepared by this laboratory and issued to the Health Department for the prophylactic inoculation of 4,764 children. The practical class in laboratory work for estate dressers was commenced as usual in October and continued throughout the year.

APPENDIX "D"

REPORT ON THE GENERAL HOSPITAL, SINGAPORE

Administration and Staff.—Dr. R. B. MACGREGOR was in charge of the hospital until the 14th June when he went on long leave. Dr. E. D. LINDOW acted until the 8th December when he was relieved by Dr. H. R. DIVE.

Dr. J. M. A. LOWSON acted as Radiologist in addition to his other duties, during the absence on leave of Dr. J. S. WEBSTER who resumed duty as Radiologist on 12th May, 1933.

Mr. E. C. CHITTY acted as Surgeon to the Ear, Nose and Throat Department until the return from leave of Mr. B. M. JOHNS on 18th February, 1933.

Nursing Staff.—Five sisters resigned on account of marriage.

Three sisters did not remain in the service.

One sister was invalided out.

Financial.—

Year	Nett revenue	Nett Hospital Board expenditure
	\$ c.	\$ c.
1931	240,370 01	572,966 36
1932	214,187 51	495,083 91
1933	199,743 32	450,649 10

Out-patient Department.—

New patients	...	14,237
Attendances	...	34,651

This does not include venereal disease cases nor dental cases.

The number of new cases in 1932 was 7,955; the number of attendances in 1932 was 24,888.

In-patients.—

Total number of patients treated	...	...	14,043
Total number of deaths	...	...	1,551
Daily average number of patients	...	...	610.86

The corresponding figures in 1932 were 13,685, 1,443 and 581.2.

COMPARATIVE TABLE.

Year	Patients treated in 1st & 2nd class Wards	Died	Percentage of Deaths	Patients treated in Children's Wards	Died	Percentage of Deaths	Patients treated in 3rd class Wards	Died	Percentage of Deaths
1931	3,854	128	3.32	1,230	586	47.64	9,170	752	8.2
1932	3,518	115	3.3	1,318	601	45.6	8,849	727	8.2
1933	3,414	136	3.9	1,571	715	45.5	9,058	700	7.7

*Chief diseases.—*Table showing number of cases year by year since 1929.

—	1933	1932	1931	1930	1929
Malaria	635	773	946	2,567	1,821
Enteric fever	193	104	156	154	132
Tuberculosis	724	612	664	712	621
Dysentery, amœbic	35	56	94	143	107
Dysentery, bacillary	64	94	97	119	62
Dysentery, mixed	8	2	..	..	..
Dysentery, unclassified	24	17	9	27	25
Syphilis and gonorrhœa	981	1,093	1,012	1,079	783
Beri-beri	114	165	234	428	308
Pneumonia, lobar	109	145	152	227	264
Pneumonia, broncho	430	309	349	233	147
Pneumonia, unclassified	18	3	6	34	17
Ankylostomiasis	324	272	354	1,112	700
Influenza	223	161	412	..	..

Noticeable increases have occurred in the numbers of cases of enteric fever, tuberculosis and broncho-pneumonia and marked decreases in the numbers of cases of malaria and beri-beri.

Maternity Wards.—

	1933	1932	1931
Number of cases admitted	1,277	1,160	1,063
Number of cases delivered	1,135	1,095	1,010

*Dental Clinic.—*The work of this department continued to expand; there were 2,920 new cases with 15,119 attendances, compared with 2,492 new cases and 12,969 attendances in 1932.

CLINICAL LABORATORY (ROUTINE)

Summary of specimens examined during 1933.—

Examination of fæces	...	...	15,088
Blood films	...	...	15,969
Examinations of sputum	...	...	9,029
Examinations of urine	...	...	4,166
Examinations of smears—urethral, etc.	...	...	1,186
Examinations of cerebro-spinal fluids	...	...	7
			45,445

CLINICAL LABORATORY.

RETURNS FOR 1933

(a) *Examination of the Blood.—*

(1) *Pathological.—*

Estimation of hæmoglobin	...	...	767
Enumeration of erythrocytes (total)	...	...	846
Enumeration of reticulocytes	...	...	345

Enumeration of thrombocytes	...	...	...	23
Enumeration of leucocytes (total)	...	...	...	1,450
Differential leucocyte count	...	...	...	1,133
Determination of arneth index	...	...	...	3
Determination of the average size of erythrocytes	...	...	...	549
Determination of bleeding time	...	...	...	9
Determination of coagulation time	...	...	...	24
Determination of fragility of erythrocytes	...	...	...	7
Examination of films for malaria—				
Subtertian	...	...	...	33
Benign tertian	...	...	...	13
Quartan	...	...	...	4
Mixed infections	...	...	...	2
Negative	...	...	...	84
Determination of malaria parasite rate	...	...	...	9
Examination of films for malaria—				
Positive	...	...	...	—
Negative	...	...	...	4
Examination of films for punctate basophilia—				
Positive	...	...	...	15
Negative	...	...	...	21
Examination of films for spirillum minus negative	...	...	...	2
Examination of films for abnormality in general blood picture	...	...	...	208
Myeloid leukaemia	...	...	...	3
Lymphatic leukaemia	...	...	...	1
Determination of icterus index	...	...	...	145
Determination of Van den Bergh reaction	...	...	...	95
Determination of Fouchet	...	...	...	4
Direct matching for blood transfusion	...	...	...	10
Formolgel test	...	...	...	3
(2) Biochemical.—				
Galactose tolerance tests	...	...	...	6
Glucose tolerance tests	...	...	...	110
Single blood sugar estimations	...	...	...	255
(Total number of specimens estimated in the above 830).				
Estimation of blood urea	...	...	...	209
Estimation of blood uric acid	...	...	...	3
Estimation of blood calcium	...	...	...	8
Estimation of blood chlorides	...	...	...	2
(a) Examination of Urine.—				
Routine chemical examination	...	...	...	368
Routine microscopical examination	...	...	...	398
Smears for nature of cells and organisms	...	...	...	22
Smears tubercle bacilli positive	...	...	...	1
Quantitative sugar estimations	...	...	...	6
Quantitative albumin estimations	...	...	...	11
Estimation of urine urea—				
Hypobromite method	...	...	...	243
Urease method	...	...	...	6
Estimations chlorides	...	...	...	4
Determination of nature of sugar (osazone test)	...	...	...	6
Determination diastatic index	...	...	...	7
Schlesinger's test	...	...	...	2
Test for apiol	...	...	...	4
Dark-ground examination for spirochaetes	...	...	...	3
(c) Examination of Sputum.—				
T.B. positive	...	...	...	10
T.B. negative	...	...	...	9
Other examinations	...	...	...	7
(d) Examination of Cerebro-spinal Fluid.—				
Total number examined	...	...	...	201
Cell counts	...	...	...	141
Globulin	...	...	...	125
Total protein	...	...	...	123
Chlorides	...	...	...	88
Sugar	...	...	...	89

Urea	...	...	...	...	9
Smears—					
T.B. positive	...	...	...	...	14
Pneumococci positive	...	...	...	...	2
Streptococci	...	...	...	...	1
Negative for organisms	...	...	...	...	96
Differential count of cells	...	...	...	...	116
(e) Examination of Fæces.—					
Total number examined	...	...	...	...	105
Fat estimation	...	...	...	...	6
Fat, gross estimation for	...	...	...	...	2
Examination for occult blood—					
Positive	...	...	...	...	4
Negative	...	...	...	...	7
“Cell-pictures”	...	...	...	...	51
Examination for ova—					
Ascaris lumbricoides positive	...	...	...	...	2
Whipworm	...	...	...	...	5
Ankylostoma	...	...	...	...	1
Tænia saginata	...	...	...	...	1
Negative	...	...	...	...	17
Examination for protozoa—					
Vegetative entamœba histolytica positive	...	...	...	...	13
Entamœba histolytica cysts positive	...	...	...	...	4
Trichomonas positive	...	...	...	...	1
Negative	...	...	...	...	46
Examination for (Heidenhain preparations)	...	...	...	...	7
(f) Miscellaneous Examinations.—					
Throat smears—					
Klebs-Lœffler bacillus positive	...	...	...	...	3
negative	...	...	...	...	7
Other examinations	...	...	...	...	2
Nasal smears	...	...	...	...	1
Lip smears	...	...	...	...	1
Tongue smears	...	...	...	...	3
Urethral smears Gonococci positive	...	...	...	...	4
negative	...	...	...	...	—
Vaginal smears	...	...	...	...	4
Cervical smears	...	...	...	...	1
Pus smears (abscess)	...	...	...	...	11
Bubo-puncture—					
Bacillus pestis positive	...	...	...	...	1
negative	...	...	...	...	1
Urticarial nodule smears	...	...	...	...	1
Ulcers smears	...	...	...	...	2
Splenic smears	...	...	...	...	1
Eye smears	...	...	...	...	1
Cystic hygroma smears	...	...	...	...	1
Ascetic fluid	...	...	...	...	14
Hydrocele fluid	...	...	...	...	2
Pericardial fluid	...	...	...	...	2
Synovial fluid	...	...	...	...	2
Pleural fluid	...	...	...	...	56
Smears for nature of cells	...	...	...	...	38
Smears for organisms—					
Pneumonococci positive	...	...	...	...	4
Streptococci	...	...	...	...	2
T.B.	...	...	...	...	—
Negative	...	...	...	...	45

THE FOLLOWING REPORTS OF SPECIAL DEPARTMENTS ARE APPENDED:—

- I. Report of Radiological Department.
- II. Dental Report.
- III. Return of Surgical Operations.
- IV. Report of Tan Tock Seng Hospital.

APPENDIX "D" (I)

REPORT OF THE RADIOLOGICAL DEPARTMENT, GENERAL HOSPITAL, SINGAPORE, FOR 1933

Staff.—Dr. J. S. WEBSTER returned from home leave on May 12th and resumed duty, *vice* Dr. J. M. A. LOWSON.

Equipment.—In the early part of the year a deep therapy plant was installed which was put into commission in May. Owing to the humidity of the atmosphere special measures had to be devised to counteract it; consequently a dry room was erected to house the apparatus which keeps the humidity constant and low (60%).

X-Ray diagnosis.—The total number of radiograms taken during the year is 10,808, which is practically the same as last year so that, despite the slump, the work of the department continues unabated.

The following examinations were undertaken:—

Abdomen	...	30	Mastoid	...	13
Ankle	...	108	Pelvis	...	213
Arm—upper	...	25	Pyelography (retrograde)	...	41
Arm—lower	...	86	Pyelography (uroselectan)	...	67
Barium meal	...	212	Pregnancy	...	1
Barium enema	...	23	Ribs	...	8
Barium swallow	...	19	Sinuses	...	132
Clavicle	...	29	Skull	...	143
Cholecystography	...	39	Shoulder	...	99
Elbow	...	100	Spine	...	141
Foot	...	117	Sternum	...	4
Foreign body	...	20	Heart and great vessels	...	22
Gall-bladder (plain)	...	6	Hip	...	105
Estimation of age	...	1	Jaw—upper	...	22
Hand	...	129	Jaw—lower	...	40
Kidneys	...	122	Teeth	...	510
Knee	...	91	Thigh	...	72
Leg	...	103	Thorax	...	608
Lipiodol (chest)	...	14	Wrist	...	130

X-Ray Therapy.—Eighty-eight cases underwent treatment. With the opening of the deep therapy plant there has been an increase of the number of cases of malignant disease treated with X-rays but it must not be overlooked that X-rays are even more successful in the treatment of other internal conditions, *e.g.*, leukaemia, exophthalmic goitre, Hodgkin's disease, etc., and that its use is not confined to the treatment of cancer.

The following diseases have been treated:—

Uterine fibroids, menorrhagia	...	3
Hodgkin's disease	...	3
Leukaemia, myeloid	...	3
Sarcomata	...	15
Myeloma, multiple	...	1
Cancer of larynx	...	1
Cancer of nasopharynx	...	2
Cancer of cervix uteri	...	2
Cancer of fundus uteri	...	1
Cancer of vulva	...	2
Cancer of cervical glands	...	4
Cancer of tongue and mouth	...	4
Diseases of skin, various	...	25
Inflammatory conditions, acute	...	12
Exophthalmic goitre	...	9
Post-operative irradiation	...	1

The results in non-malignant conditions have been good; the results of the treatment of sarcomata have been satisfactory but those in the case of carcinomata are somewhat disappointing probably because all the patients treated were in an advanced condition.

Eight cases of cutaneous malignancies were treated with radium with good results.

Electrical treatments and diathermy.—One hundred and thirty-seven cases were treated with the above agents.

APPENDIX "D" (II)

ANNUAL REPORT OF THE DENTAL DEPARTMENT OF THE GENERAL HOSPITAL, SINGAPORE, FOR THE YEAR 1933

The past year has once more seen an increase in the number of patients attending the department for treatment, over those of the previous year. The actual increase is approximately 17%.

Owing to the absence on leave of the Professor of Dental Surgery the clinical staff was reduced by one. Mr. C. F. MUMMERY acted as Professor of Dental Surgery from the end of April till the latter part of December. One of the first two students to qualify, was employed from March onwards as an Assistant Dental Officer, his duties were those usually carried out by the European Dental Officer attached to the General Hospital.

The figures for the past year and the actual treatments given, are printed in Table I.

The clinic is open for the treatment of patients daily from 8-30 A.M. till 4 P.M. continuously (Saturdays till 12-30 P.M.) and on Sundays and all public holidays for an hour or more in the mornings.

The work of the department was handicapped for part of the year by structural alterations (which were not completed to schedule). These provided for an extension of the mechanical laboratory and the provision of an additional surgery.

Out of 2,920 patients seen during the year, only 834 were Government servants or 29.12%—a marked decrease on the percentage of the previous year and also in the actual number. In spite of this, it is estimated that out of a total revenue of \$3,391, collected in small amounts, Government servants contributed at least two-thirds; so that in every way, it is the general public and not the Government servants who are deriving most benefit from the clinic. In Table III, a brief analysis is given of the revenue earned by the department but not recoverable for one reason or another. The table only gives figures for a few well-defined groups and it is to be noted that again the largest amount appears under the heading of school children. The fees are calculated on the basic scale given in the previous report. The vast majority of the patients pay nothing at all for extractions, fillings and scalings, or if they pay, the amount is very small. Dentures are paid for, as far as possible, on the basis of the bare cost of materials used, no charge being made, as a rule, for time and skill required in their production. In other words, the clinic is for the treatment of the poor and every effort is made to prevent abuse of the clinic by patients who can afford to go to private dentists. If the clinic could have collected fees on the basic scale for all the treatment that has been carried out, the revenue would be approximately \$15,000 a sum exceeding the total annual recurrent votes, exclusive of salaries, of the department.

This report should be read in conjunction with the report of the Dental Department of the College of Medicine.

TABLE I

YEAR 1932		PATIENTS							EXTRACTIONS							Fillings †	Sealings	Dressings	Attendances for denture	Actual dentures supplied
		First Visits			Percentage of Govt. Servants *	Other visits	Total all visits	Average daily attendances †	Nitrous Oxide		Other General Anaesthetics		Local & Regional Anaesthetic		Total of extractions					
		Government Servants	Others	Total					Patients	Teeth	Patients	Teeth	Patients	Teeth						
January	..	59	110	169	34.91	743	912	29.41	148	545	4	23	83	147	715	255	97	426	112	50
February	..	98	130	228	42.98	900	1,128	40.28	160	455	5	4	110	178	637	334	199	618	127	44
March	..	72	196	268	26.86	1,085	1,353	43.64	276	1,052	..	..	89	146	1,098	193	106	720	127	21
April	..	66	134	200	33.00	822	1,022	34.00	170	583	1	..	67	126	709	161	58	572	9	..
May	..	66	188	254	25.98	1,115	1,369	44.16	208	750	..	..	126	270	1,020	334	74	587	72	50
June	..	72	149	221	32.57	1,057	1,278	42.6	185	640	..	..	98	171	811	246	61	664	184	62
July	..	74	216	290	25.51	1,077	1,367	44.09	199	734	1	8	127	238	980	302	68	664	146	26
August	..	64	188	252	25.39	1,066	1,318	42.51	180	593	..	..	101	189	782	313	71	722	141	42
September	..	63	213	276	22.82	1,235	1,511	50.33	225	781	1	16	138	218	1,015	321	70	787	164	39
October	..	72	186	258	27.90	1,179	1,437	46.35	210	735	2	2	141	260	997	290	91	763	150	36
November	..	58	215	273	21.25	925	1,198	39.93	221	732	1	3	140	316	1,151	115	64	574	205	50
December	..	70	161	231	30.30	995	1,226	39.54	181	606	4	51	109	192	849	134	87	667	183	24
Total	..	834	2,086	2,920	29.12	12,199	15,119	41.72	2,363	8,206	19	107	1,329	2,451	10,764	2,998	1,046	7,764	1,620	444

* Government Servants includes their wives and families.

† In calculating the daily average attendance, no allowance has been made for Sundays, public and half holidays.

‡ In this column only permanent fillings are included: all fillings of a temporary nature are included in the "Dressings" column: fillings also include all crowns and bridges.

§ The figures in this column include such items as repairs and small partial dentures.

TABLE II

YEAR	PATIENTS							EXTRACTIONS							Fillings	Sealings	Dressings	DENTURES		
	First Visits			Percentage of Govt. Servants	Other visits	Total all visits	Average daily attendances †	Nitrous Oxide		Other general anaesthetics		Local and Regional anaesthetics		Total of extractions				Attendances	Actual dentures supplied	
	Government Servants	Others	Total					Patients	Teeth	Patients	Teeth	Patients	Teeth							
1930 *	..	..	662	..	1,586	2,248	12.95	..	..	..	..	..	..	1,910	930	324	668	182	..	
1931	..	..	1,306	..	5,761	7,067	19.36	..	..	..	..	..	..	4,625	1,713	590	3,045	632	178	
1932	..	922	1,570	2,492	36.9	10,477	12,969	35.40	1,755	5,766	49	267	1,354	2,364	8,377	3,551	1,461	6,114	1,498	493
1933	..	834	2,086	2,920	29.12	12,199	15,119	41.72	2,363	8,206	19	107	1,329	2,451	10,764	2,998	1,046	7,764	1,620	444

* Includes all Sundays and Public Holidays.

† For the last nine months of the year only

TABLE III

Year 1933 Month	School Children	Police *	Priso- ners †	Medical Depart- ment ‡	Po Leung Kok	Total	Actual amount received
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
January ..	78 30	21 70	25 55	44 55	39 55	209 65	222 90
February ..	128 45	60 75	4 50	61 55	9 45	264 70	261 85
March ..	337 25	60 20	8 40	60 10	19 90	485 85	364 40
April ..	52 50	8 30	6 80	28 60	17 70	113 90	301 20
May ..	185 85	38 50	3 00	49 60	2 00	278 95	135 90
June ..	88 10	6 25	..	54 45	2 60	151 40	300 50
July ..	306 44	30 65	3 95	81 35	6 20	428 59	301 15
August ..	213 30	54 25	14 10	70 85	7 40	359 90	247 30
September ..	150 85	41 30	5 80	32 40	57 20	287 55	360 90
October ..	81 05	36 75	1 30	55 20	6 00	180 30	198 95
November ..	196 45	24 00	0 85	44 90	13 55	279 75	335 90
December ..	43 95	20 45	1 10	40 05	13 20	118 75	360 50
Total ..	1,862 49	403 10	75 35	623 60	194 75	3,159 29	3,391 45

* Under Police Regulations subordinate ranks are entitled to free dental treatment

† Dental treatment of prisoners is almost entirely confined to extractions

‡ The term Medical Department includes Medical Officers, Sisters, Nurses, Dressers, Students, etc., but does not include their wives or children

APPENDIX "D" (III)

ANNUAL REPORT ON TAN TOCK SENG HOSPITAL, 1933

1. Work Done.—

Remained on 31-12-1932	...	...	...	765
Admitted during 1933	...	...	...	6,977
				<u>7,742</u>
Discharged	...	...	...	5,366
Died	...	...	...	929
Absconded	...	...	...	532
Transferred	...	...	...	106
Remaining on 31-12-1933	...	...	...	809
				<u>7,742</u>

The average number of daily sick was 777.34 as compared with 760.02 in 1932. The percentage case mortality was 11.9% as against 11.6% in 1932. The total number of deaths was 929, of these 176 died within 24 hours of admission. Excluding these, the death-rate is 9.7%.

2. Chief Diseases.—The following table shows the incidence of the chief diseases treated in Tan Tock Seng Hospital for 1929, 1930, 1931, 1932 and 1933.

	1933	1932	1931	1930	1929
Malaria	1,168	1,601	1,965	6,059	3,741
Pulmonary tuberculosis	646	642	760	743	694
Dysentery, amœbic	53	91	96	95	110
Dysentery, bacillary	110	83	107	103	89
Dysentery, unclassified	21	43	78	89	81
Venereal diseases	228	321	878	1,198	1,435
Beri-beri	309	532	683	689	714
Lobar pneumonia	102	108	200	274	289
Fever, unclassified	192	11	138	186	474

3. Malaria.—The number of cases admitted was 1,168 as against 1,601 in 1932 and 1,965 in 1931.

4. Dysentery.—There was a slight decrease in the number of admissions, 175 against 204 the previous year. The death rate was reduced from 34.8% to 32%.

5. Beri-Beri.—Marked decrease—248 admissions with 46 deaths, compared with 439 admissions and 49 deaths in 1932.

6. Pneumonia.—Including broncho-pneumonia, fewer cases have been admitted, but the case mortality has been higher. One hundred and twenty-five cases admitted,

with 65 deaths giving a death rate of 52% compared with 135 cases and 63 deaths with a rate of 46.6% in 1932.

7. *Tuberculosis*.—Six hundred and forty-six cases were treated with 253 deaths. As usual, most of the cases are in a very advanced state on admission.

8.—*Enteric Fever*.—Fifty-three cases were admitted against 34 in 1932, with a case mortality of 37.7% compared with 35.3% the previous year.

9. *Ulcers*.—In 1932 a beginning was made with the treatment of chronic ulcers of the leg by the ambulatory method.

In no case so far treated have more than four bandages been necessary, and with the exception of a few cases, who ceased attending, all the ulcers healed soundly.

The first few cases were treated as in-patients, but as the excellent results of the method were early apparent, the rest were treated as out-patients.

The patients, themselves, were so gratified at the progress made under this treatment that little difficulty was experienced in securing regular attendance.

Eighty-five cases were treated during 1932, and forty-eight cases during 1933.

The ambulatory method of treatment, as well as being quicker than the older methods, has led to considerable saving on account of its suitability for use in the out-patient department.

10. *Laboratory Work*.—In the hospital laboratory where the routine work is conducted the following examinations:—

Blood films	...	...	...	...	13,211
Stools	...	...	...	...	10,977
Sputum	...	...	...	...	6,647
Lepa smears	...	...	...	...	168
Urethral smears	...	...	...	...	154
Eye smears	...	...	...	...	85
Blood count	...	...	...	...	127
Urine	...	...	...	...	3,904

11. Dr. E. D. LINDOW was in charge of the hospital from 1st January to 13th June and Dr. J. C. CARSON from 14th June to 28th November, Dr. E. D. LINDOW from 29th November, to 20th December, and Dr. J. W. WINCHESTER from 21st December to the end of the year.

The surgical duties were performed by Mr. E. C. CHITTY, F.R.C.S., from 1st January to 2nd March and Mr. B. M. JOHNS, F.R.C.S., from 3rd March to the end of the year.

In the Clinical Laboratory attached to the Medical Unit under the personal direction of the Professor of Medicine, the following investigations were carried out:—

Estimation of blood	...	...	...	...	1,135
Blood counts, etc.	...	...	...	...	2,959
Cerebro-spinal fluid	...	...	...	...	492
Urine	...	...	...	...	2,609

ANNUAL REPORT OF THE RADIOLOGY DEPARTMENT TAN TOCK SENG HOSPITAL, SINGAPORE, FOR 1933

During the year 4,057 radiographs were taken. These were divided as follows:—

Skull	...	211	Ribs	...	120
Sinuses	...	67	Teeth	...	67
Mastoids	...	3	Patella	...	1
Spine	...	109	Mandible	...	30
Clavicle	...	23	Maxilla	...	5
Scapula	...	4	Nasal bones	...	35
Arm	...	28	Gall bladder	...	25
Forearm	...	92	Cholecystography	...	12
Shoulder	...	32	Kidneys	...	28
Elbow	...	45	Urinary bladder	...	17
Hand	...	74	Pyelography	...	8
Femur	...	69	Bronchography	...	11
Leg	...	71	Lipiodol in spinal canal	...	3
Foot	...	97	Oesophagus-barium swallow	...	42
Hip	...	69	Barium meal	...	198
Knee	...	49	Barium enema	...	24
Ankle	...	44	Diaphragm	...	3
Pelvis	...	16	Abdomen	...	8
Sacrum	...	4	Foreign bodies	...	10
Lungs	...	615	Mediastinum	...	5
Heart	...	70	Lipiodol in sinuses	...	2
Sternum	...	3	Miscellaneous	...	16

ANNUAL REPORT OF ELECTRO-THERAPEUTIC DEPARTMENT
TAN TOCK SENG HOSPITAL FOR 1933

Ultra-violet Therapy.—Seventy-four cases were treated during the year, necessitating the almost daily use of the ultra-violet apparatus.

Diathermy.—A total of 43 cases were treated.

In December a new super power vario frequency diathermy apparatus was procured for this hospital. It is hoped to start artificial fever therapy with this apparatus shortly.

APPENDIX "D" (IV)

RETURN OF OPERATIONS IN HOSPITALS, STRAITS SETTLEMENTS FROM 1ST JANUARY, 1933
TO 31ST DECEMBER, 1933

Total number of operations	...	...	...	8,741		
Total number of deaths	...	...	...	189		
Pathological condition and nature of operation		Total No. of cases	Cured	Relieved	Died	
AMPUTATIONS—						
Forearm or hand	...	13	11	—	2	
Foot or leg	...	23	19	—	4	
Fingers	...	54	54	—	—	
Toes	...	34	34	—	—	
Others	...	3	2	—	1	
OPERATIONS ON MUSCLES, TENDONS OR LIGAMENTS—						
Exploration of tendons	...	...	...	...	...	...
Tenotomy	...	1	1	—	—	
Plastic operation on muscles	...	5	—	5	—	
Hernia of muscles	...	—	—	—	—	
Suture of tendons	...	34	32	2	—	
Others	...	14	11	3	—	
OPERATIONS ON HEART AND BLOOD VESSELS—						
Ligature of vessels	...	10	8	2	—	
Injection varicose veins	...	7	7	—	—	
Aneurism	...	5	2	2	1	
Suture of pericardium	...	1	—	—	1	
Others	...	4	1	3	—	
OPERATIONS ON LYMPHATIC GLANDS—						
Excision of glands	...	48	37	11	—	
Insertion of radium	...	—	—	—	—	
Incision of glands	...	49	49	—	—	
Dissection of glands	...	11	7	4	—	
REMOVAL OF FOREIGN BODY—						
Hand	...	22	22	—	—	
Foot	...	11	10	1	—	
Nose	...	11	11	—	—	
Arm	...	3	3	—	—	
Leg	...	5	5	—	—	
Ear	...	3	3	—	—	
Stomach	...	...	...	...	...	
Others	...	97	96	1	—	
OPERATIONS ON BONES—						
Sequestrectomy	...	41	37	4	—	
Plating fracture	...	11	11	—	—	
Bone grafting	...	—	—	—	—	
Plaster of Paris splints	...	187	170	17	—	
Osteomyelitis	...	10	7	3	—	
Reduction of fractures	...	133	125	6	2	
Wiring or pegging fractures	...	61	57	4	—	
Osteotomy	...	6	4	2	—	
Carried forward	...	917	836	70	11	

<i>Pathological condition and nature of operation</i>	<i>Total No. of cases</i>	<i>Cured</i>	<i>Relieved</i>	<i>Died</i>
<i>Brought forward</i> ...	917	836	70	11
Removal of wire or plating ...	4	4	—	—
Exostosis excised ...	3	3	—	—
Excision elbow, clavicle, etc. ...	8	4	4	—
Others ...	4	2	1	1
OPERATIONS ON JOINTS—				
Arthrotomy ...	13	12	—	1
Arthrectomy ...	3	2	1	—
Aspiration ...	22	9	12	1
Reductions of dislocations ...	20	27	2	—
Excision of semilunar cartilage ...	6	6	—	—
Mobilisation of joint ...	9	6	3	—
Plaster of Paris splint ...	34	23	11	—
Manipulation ...	17	8	9	—
Others ...	3	2	1	—
OPERATION ON SKULL—				
Trephining ...	12	10	1	1
Decompression ...	2	—	—	2
Others ...	2	1	1	—
OPERATIONS ON EAR—				
Radical mastoid operations ...	41	40	1	—
Plastic ...	12	12	—	—
Removal of papilloma ...	4	4	—	—
Myringotomy ...	9	9	—	—
Others ...	6	6	—	—
OPERATIONS ON LIPS, MOUTHS AND SALIVARY GLANDS—				
Repair of harelip ...	22	22	—	—
Repair of cleft palate ...	1	1	—	—
Enucleation of tonsils and adenoids ...	297	297	—	—
Extraction of teeth ...	472	472	—	—
Removal of growth for examination ...	3	—	3	—
Peritonsillar abscess ...	1	1	—	—
Radium introduced ...	1	—	1	—
Alveolar abscess ...	14	14	—	—
Excision ulcer of tongue ...	2	1	1	—
Relief of tongue tie ...	3	3	—	—
Plastic operations ...	—	—	—	—
Others ...	15	12	2	1
Excision of jaw ...	1	—	—	1
OPERATIONS ON OESOPHAGUS—				
Oesophagoscopy ...	33	7	25	1
Dilation of oesophagus ...	11	3	8	—
Foreign body in oesophagus ...	2	2	—	—
Others ...	1	1	—	—
OPERATIONS ON TRACHEA—				
Tracheotomy ...	6	5	1	—
Thyroidectomy ...	5	3	1	1
Bronchoscopy ...	41	—	40	1
Others ...	12	6	6	—
OPERATIONS ON NOSE AND SINUSES—				
Turbineotomy ...	29	29	—	—
Submucous resection ...	63	63	—	—
Nasal polypus ...	19	13	6	—
Frontal sinusitis ...	5	5	—	—
Cauterisation of nose ...	5	5	—	—
Plastic operation on nose ...	—	—	—	—
Others ...	2	1	1	—
Arthrotomy ...	46	46	—	—
<i>Carried forward</i> ...	2,272	2,038	212	22

Pathological condition and nature of operation				Total No. of cases	Cured	Relieved	Died
<i>Brought forward</i> ...				2,272	2,038	212	22
OPERATIONS ON EYE—							
For pterygium	...	...	...	13	13	—	—
For trachoma	...	...	...	9	9	—	—
For cataract	...	...	...	64	62	1	1
Removal of foreign body	...	...	...	8	8	—	—
Plastic for entropion	...	...	...	13	12	1	—
Iridectomy	...	...	...	12	12	—	—
Needling cataract	...	...	...	14	14	—	—
Eviseration of eye	...	...	...	12	12	—	—
Enucleation of eye	...	...	...	10	10	—	—
Plastic for ectropion	...	...	...	3	3	—	—
Excision of lachrymal sac	...	...	...	4	4	—	—
Dacryocystotomy	...	...	...	2	2	—	—
Incision abscess eyelid	...	...	...	5	5	—	—
Muscle advancement for squint	...	...	...	1	1	—	—
Symblepharon	...	...	...	1	1	—	—
Pinguecula	...	...	...	—	—	—	—
Toilet of eye	...	...	...	2	2	—	—
Hordeleon	...	...	...	11	11	—	—
Cauterisation of cornea	...	...	...	6	6	—	—
Trephining for glaucoma	...	...	...	5	—	5	—
Others	...	...	...	18	18	—	—
OPERATIONS ON BREAST—							
Amputation	...	...	...	8	4	1	3
Excision of breast	...	...	...	9	6	—	3
Removal tumour	...	...	...	2	2	—	—
Radium into breast	...	...	...	6	—	6	—
Section for examination	...	...	...	3	—	3	—
Others	...	...	...	7	5	2	—
OPERATIONS ON THORAX—							
Resection rib for empyema	...	...	...	27	20	2	5
Empyema drained	...	...	...	3	1	1	1
Aspiration chest	...	...	...	21	17	4	—
Thoracoplasty	...	...	...	2	—	2	—
Others	...	...	...	1	—	1	—
OPERATIONS ON HERNIA—							
Radical cure of inguinal hernia	...	...	...	157	156	—	1
For strangulated hernia	...	...	...	27	26	—	1
Ventral hernia	...	...	...	4	4	—	—
Umbilical hernia	...	...	...	4	4	—	—
Femoral	...	...	...	2	2	—	—
OPERATIONS ON ABDOMEN—							
Peritoneal abscess drained	...	...	...	21	15	—	6
General peritonitis	...	...	...	13	8	—	5
Exploratory laparotomy	...	...	...	31	4	16	11
Gastrectomy	...	...	...	2	—	—	2
Perforated duodenal or gastric ulcer	...	...	...	24	11	—	13
Gastro-jejunostomy	...	...	...	31	24	2	5
Splenectomy	...	...	...	10	8	—	2
Cholecystostomy	...	...	...	7	1	1	5
Cholecystectomy	...	...	...	10	16	1	2
Choledochotomy	...	...	...	1	—	—	1
Acute intestinal obstruction	...	...	...	10	3	—	7
Intussusception	...	...	...	3	1	—	2
Appendicectomy (acute or chronic)	...	...	...	140	130	—	10
Colostomy	...	...	...	16	2	6	8
Stab wounds of abdomen	...	...	...	2	1	—	1
Laparotomy; adhesions	...	...	...	2	2	—	—
Perforation of typhoid ulcer	...	...	...	8	2	—	6
<i>Carried forward</i> ...				3,108	2,718	267	123

<i>Pathological condition and nature of operation</i>	<i>Total No. of cases</i>	<i>Cured</i>	<i>Relieved</i>	<i>Died</i>
<i>Brought forward</i> ...	3,108	2,718	267	123
Gastrostomy ...	13	2	2	9
Liver abscess ...	23	19	1	3
Pyloric stenosis ...	—	—	—	—
Exploratory laparotomy and anastomosis gut ...	12	9	1	2
Ruptured liver ...	3	2	—	1
Enterostomy ...	2	1	—	1
Paracentesis abdominis ...	84	3	68	13
Others ...	8	5	2	1
OPERATIONS ON RECTUM AND ANUS—				
Excision of haemorrhoids ...	148	147	1	—
Ischio rectal abscess ...	35	35	—	—
Sigmoidoscopy ...	117	—	117	—
Imperforate anus ...	8	5	2	1
Dilatation of anal canal ...	17	2	14	1
Anal fissure ...	9	9	—	—
Prolapse of rectum ...	5	5	—	—
Fistula-in-ano ...	101	101	—	—
Extra-peritoneal abscess ...	—	—	—	—
Others ...	14	10	4	—
OPERATIONS ON KIDNEYS, URETERS AND BLADDER—				
External urethrotomy ...	14	14	—	—
Litholopaxy ...	6	5	1	—
Cystoscopy ...	159	—	159	—
Nephrectomy ...	6	6	—	—
Nephro-lithotomy ...	1	1	—	—
Pyonephrosis ...	—	—	—	—
Peri-nephric abscess ...	1	1	—	—
Suprapubic cystotomy ...	22	18	—	4
Urethrotomy internal ...	—	—	—	—
Transplantation of ureters ...	—	—	—	—
Others ...	9	3	5	1
OPERATIONS ON THE MALE GENERATIVE ORGANS—				
Amputation of penis ...	6	4	1	1
Hydrocele radical cure ...	104	104	—	—
Variocoele ...	5	5	—	—
Plastic of penis ...	8	6	2	—
Circumcision ...	128	128	—	—
Orchidectomy ...	9	8	—	1
Ruptured urethra ...	3	2	1	—
Peri urethral abscess ...	8	8	—	—
Prostatic abscess ...	—	—	—	—
Epididymectomy ...	—	—	—	—
Dilation stricture ...	146	58	88	—
Dorsal slit of prepuce ...	11	11	—	—
Prostatectomy ...	2	2	—	—
Others ...	29	21	8	—
OPERATIONS ON THE FEMALE GENERATIVE ORGANS—				
Ovariectomy ...	21	18	1	2
Salpingectomy ...	22	19	—	3
Hysterectomy ...	17	16	—	1
Perineorrhaphy ...	386	386	—	—
Amputation of cervix ...	7	7	—	—
Hymenectomy ...	4	4	—	—
Per vaginal examination ...	5	3	2	—
Vesico vaginal fistula ...	5	3	2	—
<i>Carried forward</i> ...	4,851	3,934	749	168

Pathological condition and nature of operation				Total No. of cases	Cured	Relieved	Died
Brought forward ...				4,851	3,934	749	168
Dilatation and curettage ...	...	...	...	125	125	—	—
Colporrhaphy ...	...	...	...	6	5	1	—
Ventral suspension ...	...	...	...	22	22	—	—
Oophorectomy ...	...	...	...	6	6	—	—
Caesarian section ...	...	...	...	8	7	—	1
Ruptured ectopic gestation ...	...	...	...	7	6	—	1
Recto vaginal fistula ...	...	...	...	4	4	—	—
Insertion of radium into cervix ...	...	...	...	21	1	20	—
Induction of labour ...	...	...	...	30	30	—	—
Myomectomy ...	...	...	...	2	2	—	—
Marsupialisation of uterus ...	...	...	...	—	—	—	—
Insufflation of tube ...	...	...	...	13	11	2	—
Application of forceps ...	...	...	...	143	143	—	—
Manual removal of placenta ...	...	...	...	57	57	—	—
For complicated labour ...	...	...	...	65	64	—	1
Others				25	19	6	—
OPERATIONS ON CYST—							
Sebaceous ...	...	...	...	95	95	—	—
Ranula ...	...	...	...	2	1	1	—
Others ...	...	...	...	17	16	1	—
OPERATIONS FOR ABSCESS—							
Incision ...	...	...	...	1,215	1,204	8	3
Abscesses aspirated ...	...	...	...	38	23	15	—
OPERATIONS ON NERVES—							
Injectations into nerves ...	...	...	...	—	—	—	—
Pluric avulsion ...	...	...	...	6	—	6	—
Peri-arterial sympathectomy ...	...	...	...	16	10	6	—
Others ...	...	...	...	13	8	5	—
OPERATIONS ON THE SPINE, CORD AND MENINGES—							
Bone graft of spine ...	...	...	...	2	1	1	—
Lumbar puncture ...	...	...	...	11	1	9	1
Plaster of spine ...	...	...	...	19	5	14	—
Laminectomy ...	...	...	...	1	—	—	1
Others ...	...	...	...	6	2	4	—
OPERATIONS ON THE SKIN AND SUBCUTANEOUS TISSUE—							
Skin grafting ...	...	...	...	46	41	5	—
Removal of nail ...	...	...	...	14	14	—	—
Suturing wounds ...	...	...	...	1,174	1,162	10	2
Exploration of wound ...	...	...	...	—	—	—	—
Cellulitis incised ...	...	...	...	142	131	3	8
Carbuncle ...	...	...	...	16	16	—	—
Keloid, excision ...	...	...	...	5	4	1	—
Sinuses scraped ...	...	...	...	225	175	50	—
Removal of papillomata ...	...	...	...	20	20	—	—
Excision of ulcers ...	...	...	...	20	16	3	1
Whitlows ...	...	...	...	41	41	—	—
Others				73	61	11	1
OPERATIONS ON TUMOUR—							
Fibroma ...	...	...	...	12	12	—	—
Lipoma ...	...	...	...	13	13	—	—
Naevus ...	...	...	...	7	7	—	—
Rodent ulcer ...	...	...	...	2	2	—	—
Tumour unspecified removed ...	...	...	...	97	28	69	—
Osteomata ...	...	...	...	—	—	—	—
Excision of lympho-sarcoma ...	...	...	...	—	—	—	—
Others				8	5	2	1
Total ...				8,741	7,550	1,002	189

APPENDIX "E"

I.—MEDICAL INSPECTION OF ENGLISH AND MALAY GIRLS' SCHOOL, SINGAPORE.

- (i) The Government and Aided Girls' Schools.
- (ii) The Malay Girls' Schools.
- (iii) The Chinese Aided Girls' Schools.
- (iv) Twelve Junior Boys' Schools *i.e.* of boys up to the age of 12 years.
- (v) Three Junior Chinese Boys' Schools, and
- (vi) The locally trained Female Teachers, of whom a separate report is given.

The examination followed on the lines of former years, a routine examination and re-examination of those found defective. As in former years, treatment has been recommended to be carried out by private practitioners and in necessitous cases at the Government Dispensaries and Hospitals. Treatment was carried out at the Malay Girls' Schools for worm infection, and vaccinations were performed. Out of 316 girls examined, 45 had hookworm; 251 had roundworm; 179 whipworm and 7 threadworm infection. The hookworm infection in the Malay Girls' Schools was 14.2% in 1933 compared with 10% in 1932.

When possible cinema health films were shown during the re-examinations, the subjects being Dental Hygiene, Fly Dangers and Malaria.

The number of children medically examined in 1933 was 7,911 out of a total of 8,247, an increase of 218 over 1932. There were four Aided Chinese Girls' Schools examined for the first time.

One thousand eight hundred and thirty-one children required re-vaccination.

Five thousand one hundred and eighty-six children were referred for treatment as a result of the routine examination. 63.18% of the total from the English Girls' Schools, 80.59% from Malay Girls' School, 73.91% from Chinese Girls' School, 65.26% from Junior Boys' Schools, and 72.84% from Chinese Boys' Schools.

The group percentage was 66.26% as against 80% for 1932.

Altogether 14,928 examinations, re-examinations, and vaccinations were made during 1933.

Some extracts from the General Report are given below and compared with those for 1932 and 1931:—

General Nutrition.—

	Undernourished			Improved at second examination		
	1933	1932	1931	1933	1932	1931
Government Girls ..	0.35%	0.03%	0.14%	61.54%	0%	80%
Malay Girls ..	0.49%	0.26%	0.27%	50%	0%	100%
Chinese Girls ..	0.33%	0.19%	..	0%	0%	..
Junior Boys ..	0.98%	0.2%	0.95%	48.15%	33.3%	51.6%
Chinese Boys ..	3.09%	Not examined		0%	Not examined	

Vaccinations.—

	Requiring Re-vaccination			Successful Re-vaccination		
	1933	1932	1931	1933	1932	1931
Government Girls ..	17.9%	17.8%	26.1%	84.21%	85.01%	62.2%
Malay Girls ..	18.43%	26.8%	30.9%	79.73%	94.1%	72.8%
Chinese Girls ..	42.5%	73.17%	..	83.3%	91.7%	..
Junior Boys ..	20.34%	23%	29.6%	85.9%	83.9%	73.9%
Chinese Boys ..	46.3%	Not examined		86.6%	Not examined	

Dental Caries.—This is still the chief defect found among the scholars. The number of those treated varied greatly in different schools. Treatment was carried

out as usual by local dentists and those who were unable to pay were treated free of charge at the Dental Clinic, General Hospital.

	Carious Teeth			Treated		
	1933	1932	1931	1933	1932	1931
Government Girls ..	40.4%	52%	45.7%	66.05%	66%	59%
Malay Girls ..	31.7%	67.6%	54%	65.12%	63.8%	61.9%
Chinese Girls ..	46.29%	63.7%	..	31.84%	47.3%	..
Junior Boys ..	36.55%	73.5%	57.7%	77.43%	79.7%	76.4%
Chinese Boys ..	67.28%	Not examined		27.52%	Not examined	

Enlarged Tonsils and Adenoids.—The figures for this defect show an increase from last year, fewer improvements being noted.

	1933	1932	1931
Enlarged tonsils and adenoids ...	27.04%	15.2%	16.2%

Forty-two children had tonsillectomy performed.

Enlarged Cervical Glands.—55.61% were found, compared with 62.6% for 1932.

Defective Vision.—During part of the year, examination of eye defects was carried out free of charge at the General Hospital, and prescriptions for glasses given when required.

Defective Vision.—

	Defective Vision			Glasses fitted		
	1933	1932	1931	1933	1932	1931
Government Girls ..	4.25%	2.33%	3.19%	53.85%	80.68%	69.37%
Malay Girls ..	0.98%	1.05%	0.54%	0%	50%	0%
Chinese Girls ..	4.19%	3.94%	..	35.5%	57.14%	..
Junior Boys ..	2.61%	0.76%	1.23%	62.5%	78.2%	70%
Chinese Boys ..	1.23%	Not examined		50%	Not examined	

Eye Affections.—There were 6.78% cases in all groups compared with 1.69% in 1932. These were chiefly cases of mild follicular conjunctivitis.

Ear Conditions.—There were 0.23% of cases found as against 0.61% in 1932, otorrhœa being the chief defect.

Anæmia.—66% as compared with 0.82% in 1932. Group improvement 63.46% as against 60.3% in 1932.

Skin Conditions.—There were 255 skin affections in 1933, 3.22% as compared with 3.9% in 1932.

Infectious Diseases.—There was increased prevalence of typhoid fever among school children. In May and June preventive inoculations of T.A.B. vaccine, prepared by the Government Bacteriologist, were given to 2,774 children, in the four schools from which cases had been reported.

Mumps were prevalent; 445 cases being reported.

The following diseases were reported from the schools inspected.

Diseases reported.

	1933	1932
Chickenpox ...	72	105
Diphtheria ...	8	11
Measles ...	81	59
Mumps ...	445	50
Typhoid fever ...	29	3
Whooping cough ...	15	17

Sanitation.—This was satisfactory in most of the schools. The buildings in which some of the Chinese Schools are situated are far from ideal, no funds are available for improvements at present.

NUMBERS TREATED AND PERCENTAGE OF IMPROVEMENTS DURING 1933

SCHOOLS	Mal- Nutrition	Dirty	Anemia	Coryza	Otorrhoea	Conjunc- tivitis	Trachoma	Defective Vision	Enlarged Tonsils	Adenoids	Dental Caries	Sores	Ringworm	Enlarged Spleen	Fever	Tuber- culosis
Raffles Girls' School	..	..	3	3	1	2	1	10	11	1	200	3	..	..	4	..
The French Convent	..	2	4	4	10	..	18	..	13	35	2	208	11	..	1	..
The Fr. Convent—Katong	..	..	..	1	..	1	..	6	8	..	56	2	..	..	2	..
Singapore Chinese Girls'	..	1	..	1	3	..	1	..	2	7	3	86	1	..	..	..
Methodist Girls'	..	..	4	1	4	..	8	..	22	32	3	117	..	..	..	..
St. Anthony's Convent	..	2	20	..	18	..	25	..	25	21	6	112	2	..	19	..
Fairfield Girls' School	..	2	..	..	4	2	1	..	5	6	..	168	4	..	..	..
Serangoon English (Girls)	..	1	1	..	9	..	15	..	1	..	1	20	..	..	1	..
Kampung Glam Malay Girls'	..	..	3	..	4	1	3	..	..	4	..	15	2	..	2	..
Rochoh Malay Girls'	..	1	..	1	1	..	4	..	..	6	1	23	..	..	..	..
Geylang Malay Girls'	..	..	3	1	6	..	4	..	..	9	..	26	..	..	7	..
Kampung Roko Malay Girls'	..	..	..	..	2	..	..	..	..	..	2	..	..	..	1	..
Siglap Malay Girls'	..	..	..	..	1	..	1	..	..	2	..	4	1	..	2	..
Teluk Kurau Malay Girls'	..	..	4	2	2	..	12	..	..	2	..	14	..	..	6	..
Holy Innocents Girls'	..	16	..	..	2	..	2	1	..	7	..	26	1	..	2	..
Cheng Fong Chinese Girls'	..	..	7	2	5	..	11	..	4	3	..	17	1	..	3	..
Chong Poon Chinese Girls'	..	..	6	..	5	..	9	..	..	7	3	25	2	1	5	..
Chung Hwa Chinese Girls'	..	..	2	..	3	..	6	..	..	8	..	4	..	..	2	..
Nanyang Pin Min Chinese Girls'	..	..	1	..	4	..	2	..	..	1	..	9	1	..	1	..
Chien Hua Chinese Girls'	..	..	2	1	1	..	2	..	..	1	..	4	..	..	..	..
Hop Kuan Chinese Girls'	..	..	2	..	3	..	..	..	..	..	4	..	..	..	..	..
Nan Hua Chinese	..	..	4	2	3	..	4	..	3	4	..	22	1	..	1	..
Anglo-Chinese Boys' School	..	4	3	1	9	2	19	..	13	20	..	143	7	..	8	..
St. Andrew's School	..	1	6	1	16	1	4	..	5	13	..	77	5	..	13	..
Victoria Bridge School	..	..	7	1	7	1	4	..	2	2	..	28	9	..	..	..
Radin Mas Boys' School	..	..	7	1	3	..	17	..	..	3	2	17	4	..	6	..
Gan Eng Seng Boys' School	..	2	6	1	14	1	4	..	4	8	1	74	6	..	5	..
McNair Road Boys' School	..	1	2	..	12	1	12	..	1	23	1	91	2	..	6	..
Pearl's Hill Boys' School	..	1	12	5	32	..	3	..	14	41	3	144	3	..	2	..
Teluk Kurau English School	..	..	5	..	8	..	19	..	..	2	4	49	1	1	1	..
Outram Boys' School	..	1	1	2	5	..	6	..	..	11	2	6	4	..	1	..
Serangoon Eng. School (Boys)	..	..	21	..	10	..	16	..	..	10	4	43	1	..	2	..
Geylang English Boys' School	..	3	9	2	9	..	11	..	6	9	..	83	6	..	1	..
Hop Kuan Chinese Boys'	..	..	8	1	3	..	..	..	1	2	..	20	..	..	1	..
Chien Hua Chinese Boys'	..	..	9	..	7	..	1	..	..	2	..	4	1	..	..	..
Nanyang Pin Min Chinese Boys'	..	..	2	..	7	..	2	..	..	5	..	6	..	..	1	..
Totals	..	22	176	33	236	10	249	2	137	325	37	1,947	81	2	106	..
Percentages 1933	..	44	80.4	63.46	87.7	58.8	66.4	100	49.1	15.41	14.8	59.6	92.05	50	92.98	..
Percentages 1932	..	22.2	62.5	60.3	93.98	60.5	36.7	33.3	75.7	41.8	31.8	49.99	88.8	71.4	88.89	25

MEDICAL EXAMINATIONS FOR 1933
OF LOCALLY TRAINED FEMALE TEACHERS IN SINGAPORE SCHOOLS

SCHOOLS	No. of Teachers	General Condition	Nits	Circulatory System			Respiratory System			Genito Urinary System			Skin		Eye		Defective Vision		Throat		Teeth	Fever	Treatment and Improvements at 2nd Examination						
				Anaemia	Cardiac Irregularities	Nasal Catarrh	Bronchial Catarrh	Tuberculosis	Dysmenorrhoea	Pregnancy	Acne Vulgaris	Eczema	Other Condition	Conjunctivitis	Partial Blindness	Slight (V ₂)	Severe (V ₁ or more)	Pharyngitis	Enlarged Tonsils	Dental Caries		General Condition Improved	Successful Re-vaccination	Amenorrhoea, etc. Improved	Teeth Improved	Eye Conditions Improved	Eyes Examined	Throat & Tonsils Improved	Skin Improved
St. Anthony's Convent	6	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..
Raffles Girls' School	16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fairfield Girls' School	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
The French Convent	22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
The French Convent—Katong	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Methodist Girls' School	21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
S'pore Chinese Girls' School	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kampong Glam Malay Girls' School	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rochok Malay Girls' School	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Geylang Malay Girls' School	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Teluk Kurau Malay Girls' School	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Siglap Malay Girls' School	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kampong Roko Malay Girls' School	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Holy Innocents Girls' School	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chong Poon Chinese Girls' School	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chung Hwa Chinese Girls' School	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cheng Fong Chinese Girls' School	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nanyang Pin Min Chinese School	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hop Kuan Chinese School	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nam Hua Chinese School	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chien Hua Chinese School	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Radin Mas Boys' School	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Outram Boys' School	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Teluk Kurau English School	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gan Eng Seng Boys' School	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Andrew's Boys' School	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pearl's Hill Boys' School	16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Geylang English School	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Serangoon English School	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
McNair Boys' School	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Victoria Bridge School	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anglo-Chinese Boys' School	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pasir Panjang English School	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bukit Panjang English School	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	231	1	2	8	216	13	13	..	346	6	7	1	2	1	..	3	7	3	1	15	..	..	6	1	9	1	4	2	5
Percentages 1933	237	.43	.87	3.46	2.16	1.3	1.3	..	3.46	..	4.33	4.33	1.73	4.3	..	4.33	1.73	1.73	6.49	6.49	..	..	.75	33.3	60	100	40	50	85.5
Percentages 1932	..	..	.84	4.22	.84	..	..	..	..	..	3.38	3.38	3.38	..	..	2.1	3.38	3.38	13.19	13.19	1.27	..	90	50	67.2	80	12.5	50	..

MEDICAL EXAMINATIONS FOR 1933
SUMMARY OF RESULTS, GOVERNMENT AND AIDED GIRLS' SCHOOLS, SINGAPORE
Treatment and Improvements at 2nd Examination

SCHOOLS	No. of pupils	No. Examined	Average Height	Average Weight	Condition: Fair or Poor	Dirty	Nits	Requiring Re-vaccination	Affections of Respiratory System	Affections of Circulatory System	Throat Affections	Ear Affections	Eye Affections	Defective Vision	Dental Caries	Skin Affections
The French Convent ..	1,101	1,052	..	..	3	5	65	191	14	12	250	..	36	32	409	27
Raffles Girls' School ..	572	563	..	..	..	..	10	72	3	8	60	1	14	20	242	22
S'pore Chinese Girls' School ..	218	214	..	..	1	..	1	27	3	1	28	..	3	4	111	4
Methodist Girls' School ..	677	666	..	..	..	5	3	91	4	12	160	..	25	47	183	11
Fairfield Girls' School ..	437	431	..	..	2	..	..	68	5	2	44	2	7	8	255	11
St. Anthony's Convent ..	471	443	..	..	5	22	72	98	31	2	175	..	56	33	156	14
The Convent—Katong ..	207	192	..	..	..	..	8	50	2	1	43	..	2	10	75	2
Serangoon English School (Girls) ..	79	78	..	..	2	2	..	11	9	..	23	..	18	2	33	1
Pasir Panjang English School ..	23	21	..	..	..	..	1	17	..	..	10	..	1	..	12	1
Bukit Panjang English School (Girls) ..	8	8	..	..	..	..	..	6	1	..	3	..	..	..	6	..
Totals ..	3,793	3,668	..	..	13	34	160	631	72	38	796	3	162	156	1,482	93
Totals 1932 ..	3,861	3,773	Percentages 1933		·35	·93	4·36	17·2	1·96	1·04	21·7	·08	4·42	4·25	40·4	2·54
			Percentages 1932		·03	..	1·78	17·86	·61	·61	11·16	·27	1·01	2·33	52·05	2·49

SCHOOLS	Tuberculosis	Enlarged Spleen	Enlarged Glands	Fever	Abnormalities	General Condition Improved	Successful Re-vaccination	Anaemia Improved	Teeth Improved	Eye Conditions Improved	Eyes Examined	Tonsils Improved	Skin Improved	Ear Condition Improved	Tuberculosis Improved
The French Convent ..	..	..	408	1	1	2	152	4	208	19	13	35	21	..	..
Raffles Girls' School ..	..	..	283	4	5	..	60	3	200	3	10	11	15	1	..
S'pore Chinese Girls' School ..	..	..	127	..	..	1	26	1	86	1	2	7	4	..	..
Methodist Girls' School ..	..	..	197	..	1	..	71	1	117	8	22	32	6	..	..
Fairfield Girls' School ..	..	..	271	..	4	2	59	..	168	2	5	6	10	2	..
St. Anthony's Convent ..	..	..	253	21	2	2	91	..	112	25	25	21	11	..	..
The Convent—Katong ..	..	..	111	2	3	..	44	..	56	1	6	8	2	..	..
Serangoon English School (Girls) ..	..	..	56	1	..	1	9	..	29	15	1	..	1	..	..
Pasir Panjang English School ..	..	..	17	..	..	..	..	..	..	..	..	..	..	..	..
Bukit Panjang English School (Girls) ..	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..
Totals ..	..	..	1,730	29	16	8	512	9	967	74	84	120	70	3	..
Percentages 1933 ..	..	..	47·17	·79	·44	61·54	84·21	60	66·05	45·96	53·85	15·33	76·09	10·0	..
Percentages 1932 ..	·08	..	52·77	·32	·37	..	85·01	21·74	66·04	53·66	30·68	25·89	57·45	70	33·3

MEDICAL EXAMINATIONS FOR 1933
SUMMARY OF RESULTS, MALAY GIRLS' SCHOOLS, SINGAPORE
Treatment and Improvements at 2nd Examination

SCHOOLS	No. of pupils	No. Examined	Average Height	Average Weight	Condition: Fair or Poor	Dirty	Nits	Requiring Re-vaccination	Affections of Respiratory System	Affections of Circulatory System	Throat Affections	Ear Affections	Eye Affections	Defective Vision	Dental Caries	Skin Affections
Kampong Glam Malay Girls' School	102	99	..	..	..	3	24	11	4	..	36	1	8	..	24	2
Rochoh Malay Girls' School	82	73	..	..	1	..	37	23	2	2	26	..	9	1	27	..
Geylang Malay Girls' School	111	98	..	..	..	3	45	22	9	2	41	..	9	1	36	1
Teluk Kurau Malay Girls' School	62	57	..	..	1	4	23	10	6	2	18	..	16	1	19	1
Siglap Malay Girls' School	46	45	..	..	..	..	20	4	3	..	13	..	2	1	13	2
Kampong Roko Malay Girls' ..	40	35	..	..	..	..	8	4	2	..	12	..	2	..	10	1
Totals ..	443	407	..	..	2	10	157	74	26	6	146	1	46	4	129	7
Totals 1932 ..	419	380	Percentages 1933		49	246	3857	1843	639	147	3587	25	113	98	317	172
			Percentages 1932		26	..	605	2684	53	342	2052	26	368	105	6763	158

SCHOOLS	Tuberculosis	Enlarged Spleen	Enlarged Glands	Fever	Abnormalities	General Condition Improved	Successful Re-vaccination	Anaemia Improved	Teeth Improved	Eye Conditions Improved	Eyes Examined	Tonsils Improved	Skin Improved	Ear Condition Improved	Tuberculosis Improved
Kampong Glam Malay Girls' School	..	..	90	2	..	..	8	..	15	4	..	4	2	1	..
Rochoh Malay Girls' School	..	..	37	..	1	1	16	1	23	4	..	6	..	..	..
Geylang Malay Girls' School	..	..	57	9	..	..	17	1	26	4	..	9	1	..	..
Teluk Kurau Malay Girls' School	..	..	32	7	..	..	10	2	14	12	..	2	1	..	..
Siglap Malay Girls' School	..	..	32	3	..	..	4	..	4	1	..	2	2	..	..
Kampong Roko Malay Girls' ..	..	..	24	1	..	..	4	..	2	..	..	..	1	..	..
Totals ..	..	..	272	22	1	1	59	4	84	25	..	23	7	1	..
Percentages 1933 ..	..	..	6683	541	25	50	7973	80	6512	5435	..	1575	100	100	..
Percentages 1932 ..	26	..	6711	7553	..	..	9412	6154	6381	714	50	2051	100	..	..

MEDICAL EXAMINATIONS FOR 1933
SUMMARY OF RESULTS, CHINESE GIRLS' SCHOOLS, SINGAPORE
Treatment and Improvements at 2nd Examination

Schools	No. of pupils	No. Examined	Average Height	Average Weight	Condition: Fair or Poor	Dirty	Nits	Requiring Re-vaccination	Affections of Respiratory System	Affections of Circulatory System	Throat Affections	Ear Affections	Eye Affections	Defective Vision	Dental Caries	Skin Affections
Holy Innocents Chinese Girls' ..	137	120	..	..	..	19	..	44	6	..	41	..	9	..	78	7
Cheng Fong Chinese Girls' ..	212	192	..	..	..	8	1	68	10	3	36	..	22	8	56	3
Nanyang Pin Min Girls' ..	78	71	..	..	1	1	..	56	4	..	22	..	7	4	37	3
Chong Poon Chinese Girls' ..	141	137	..	..	..	6	1	57	7	1	54	..	21	3	72	6
Chien Hua Chinese Girls' ..	37	34	..	..	..	4	..	29	1	2	9	..	4	1	24	..
Hop Kuan Chinese Girls' ..	17	17	..	..	..	2	..	11	..	..	6	..	..	1	5	1
Chung Hwa Chinese Girls' ..	212	207	..	..	2	5	1	73	5	5	45	1	17	19	93	4
Nun Hua Chinese Girls' ..	147	138	..	..	..	6	..	52	3	3	34	..	14	9	59	3
Totals ..	981	916	..	..	3	51	3	390	36	14	247	1	94	45	424	27
Total 1932 ..	573	533	Percentages 1933		·33	5·37	·33	42·5	3·93	1·53	26·97	·11	10·26	4·01	46·29	2·95
			Percentages 1932		·19	·19	..	73·17	·94	2·81	12·38	·56	2·63	3·94	63·79	6

Schools	Affections of Genito Urinary System	Enlarged Spleen	Enlarged Glands	Fever	Abnormalities	General Condition Improved	Successful Re-vaccination	Anaemia Improved	Teeth Improved	Eye Conditions Improved	Eyes Examined	Tonsils Improved	Skin Improved	Ear Condition Improved
Holy Innocents Chinese Girls' ..	..	..	80	2	2	..	38	..	26	3	..	7	6	..
Cheng Fong Chinese Girls' ..	..	..	56	3	..	..	34	2	17	11	4	3	2	..
Nanyang Pin Min Girls' ..	..	..	39	1	..	..	51	..	9	2	..	1	3	..
Chong Poon Chinese Girls' ..	..	..	75	5	2	..	53	..	25	9	..	7	4	..
Chien Hua Chinese Girls' ..	..	..	14	..	..	..	29	1	4	2	..	1	..	..
Hop Kuan Chinese Girls' ..	..	..	9	..	..	..	11	..	4	..	..	..	..	..
Chung Hwa Chinese Girls' ..	..	..	77	2	1	..	58	..	28	7	9	8	2	..
Nun Hua Chinese Girls' ..	..	..	64	1	..	..	51	2	22	6	3	4	2	..
Totals ..	..	..	414	14	5	..	325	5	135	40	16	31	19	..
Percentages 1933 ..	..	..	4·52	1·53	·55	..	83·3	83·3	31·84	42·55	35·5	12·55	70·37	..
Percentages 1932 ..			61·35	·56	·38	..	91·79	40	47·35	14·29	57·14	28·79	68·75	100

SUMMARY OF RESULTS. CHINESE BOYS' SCHOOL, SINGAPORE

[illegible][illegible]

MEDICAL EXAMINATIONS FOR 1933
SUMMARY OF RESULTS, GOVERNMENT BOYS' SCHOOLS, SINGAPORE
Treatment and Improvements at 2nd Examination

Schools	No. of pupils	No. Examined	Average Height	Average Weight	Condition: Fair or Poor	Dirty	Nits	Requiring Re-vaccination	Affections of Respiratory System	Affections of Circulatory System	Throat Affections	Ear Affections	Eye Affections	Defective Vision	Dental Caries	Skin Affections
St. Andrew's School	333	316	..	..	2	6	..	111	18	3	75	2	15	14	98	13
Teluk Kurau English School ..	169	167	..	..	..	5	..	29	9	..	73	..	23	12	83	9
Gan Eng Seng ..	288	268	..	..	5	5	..	66	18	2	63	2	18	10	87	13
Outram Boys' School ..	111	108	..	..	2	2	..	1	6	2	42	..	7	..	19	6
Victoria Bridge School	108	101	..	..	1	7	1	13	10	1	30	1	13	12	32	14
Geylang English School	246	241	..	..	3	10	..	66	14	5	84	..	22	9	102	9
Radin Mas English School ..	94	92	..	..	2	8	..	31	5	1	42	..	24	..	24	9
Serangoon English Boys' School ..	162	155	..	..	..	27	..	38	10	..	72	1	29	..	66	6
McNair Road Boys' School ..	364	347	..	..	3	3	..	113	17	3	119	2	12	2	133	9
Anglo-Chinese School	469	464	..	..	6	3	..	120	17	7	126	2	22	17	155	12
Pearl's Hill Boys' School ..	460	444	..	..	3	13	..	36	42	10	158	1	37	16	176	18
Pasir Panjang English School ..	55	55	..	..	..	1	..	37	5	2	17	1	1	..	33	2
Totals ..	2,859	2,758	..	..	27	90	1	661	171	36	901	12	223	72	1,008	120
Totals 1932 ..	3,084	3,007	Percentages 1933		98	3.26	04	20.34	6.2	1.31	32.67	44	8.09	2.61	36.55	4.35
			Percentages 1932		2	23	..	23.01	1.83	1	16.86	8	2	76	73.56	5.52

Schools	Affections of Genito Urinary System	Enlarged Spleen	Enlarged Glands	Fever	Abnormalities	General Condition Improved	Successful Re-vaccination	Anaemia Improved	Teeth Improved	Eye Conditions Improved	Eyes Examined	Tonsils Improved	Skin Improved	Ear Condition Improved
St. Andrew's School ..	13	..	198	13	1	1	102	1	77	4	5	13	11	1
Teluk Kurau English School ..	5	..	115	1	1	..	26	..	49	20	..	12	8	..
Gan Eng Seng ..	6	..	169	5	4	2	56	1	74	4	4	8	13	1
Outram Boys' School ..	..	..	61	1	..	1	1	2	6	7	..	11	5	..
Victoria Bridge School	3	..	56	..	2	..	12	1	28	4	2	2	12	1
Geylang English School	10	..	147	1	1	3	62	2	83	13	6	9	9	..
Radin Mas Boys' School ..	..	..	65	7	3	..	25	1	17	17	..	3	6	..
Serangoon English Boys' School ..	6	..	113	2	..	..	30	..	43	17	..	10	4	..
McNair Road Boys' School ..	13	..	258	2	4	1	86	..	91	3	1	23	7	1
Anglo-Chinese School	6	..	316	6	2	4	107	1	143	13	13	20	9	2
Pearl's Hill Boys' School ..	11	..	346	9	..	1	29	5	144	20	14	41	13	..
Pasir Panjang English School ..	3	..	50	..	..	..	..	..	..	..	..	..	..	..
Totals ..	76	..	1,894	47	18	13	536	14	755	122	45	142	97	6
Percentages 1933 ..	2.76	..	68.67	1.7	65	48.15	85.9	56.00	77.43	54.95	62.5	16.06	82.2	54.5
Percentages 1932 ..	2.26	..	69.47	73	6	33.33	83.96	63.33	79.75	41.67	78.26	39.64	87.35	54.17

REPORT ON THE MEDICAL EXAMINATIONS OF LOCALLY TRAINED FEMALE TEACHERS IN SINGAPORE SCHOOLS DURING 1933

Two hundred and thirty-one teachers were examined compared with 237 in 1932. There was the usual routine examination and re-examination of those found defective.

The accompanying table is a summary of the defects found and the improvements which followed treatment. The figures for 1932 are given for comparison.

The standard of health among the teaching staffs of the schools remained high during the year.

II.—MEDICAL EXAMINATION OF BOYS' SCHOOLS, SINGAPORE.

(1) Systematic routine medical inspection was carried out in the following schools during the year 1933 :—

(a) Government English Schools	...	...	...	14
(b) Government Aided English Schools	...	...	...	8
(c) Government Malay Vernacular Schools	...	...	...	19
(d) Government Aided Chinese Vernacular Schools	...	...	...	5
Total				46

(2) The following table shows the total number of boys examined :—

Year	In Government and Aided English Schools	In Malay Vernacular Schools	In Aided Chinese Schools	Total
1931	6,224	2,388	Nil	8,612
1932	6,618	2,395	561	9,574
1933	6,933	2,402	413	9,748

(3) The following schools were inspected as to their sanitary arrangements and accommodation capacity :—

(a) Government English Schools	...	...	...	13
(b) Government Aided English and Chinese Schools	...	...	...	13
(c) Private English Schools	...	...	...	59
(d) Malay Vernacular Schools	...	...	...	19
(e) Tamil Vernacular Schools	...	...	...	5
(f) Chinese Vernacular Schools	...	...	...	284
(g) Arab Vernacular Schools	...	...	...	2
(h) Sanskrit School	...	...	...	1

The total number of visits to these schools was 595.

The sanitation of the Government and Aided English Schools and the Malay Vernacular Schools remained very satisfactory, the sanitation of the Private Tamil Schools remained still unsatisfactory.

(4) Data elicited from systematic examination of boys :—

(a) General Condition.—

	1931	1932	1933
Good	88.72	92.12	93.27
Fair	9.23	6.86	6.71
Poor	2.05	.02	.02

The general condition of the school children showed a steady improvement.

(b) Vaccination.—This was performed by the vaccinator attached to the Health Branch. The figures below give a summary of work done. The total number of vaccinations was 2,939.

Year	English Schools	Chinese Schools	Malay Schools	Total
1931	1,022	Nil	812	1,834
1932	1,901	488	794	3,183
1933	2,053	205	681	2,939

(c) Diseases of the Eye.—(1) defective vision and (2) diseases of eye. The total number of pupils with defective vision was 272 as against 215 in 1932 and 228 in 1931. There were 161 cases of diseases of the eye as against 166 in 1932 and 305 in 1931.

Pupils with defects greater than 6/9 were enabled to see an optician. The number of trachoma cases is less compared with the previous years:—

Year	Trachoma	Conjunctivitis	Other Conditions
1931	134	132	39
1932	54	69	43
1933	17	108	36

(d) *Dental Caries*.—The percentage of dental caries amongst school children was 34.23, as against 19.89 in 1932 and 25.37 in 1931. The Malay vernacular school children received free dental treatment at the General Hospital once a week.

The majority of the Malay parents refused to have their children sent for treatment.

Three private dentists treated school children at reduced rates. Cases unable to pay were treated free.

(e) *Enlarged tonsils and adenoids*.—The percentage of enlarged tonsils and adenoids amongst school children was 5.06 as against 13.48% in 1932.

(f) *Infectious diseases*.—

1. Chicken-pox	22 cases
2. Diphtheria	7 „
3. Measles	22 „
4. Mumps	20 „
5. Leprosy	1 „
6. Pulmonary tuberculosis	1 „
7. Typhoid fever	45 „

There was an outbreak of typhoid mainly among the boys of St. Joseph's Institution. Two preventive vaccinations of typhoid vaccine prepared by the Government Bacteriologist were given to all the boys except those vaccinated by their own medical practitioners.

Hawkers at this school were banned and a tuck shop opened.

(g) *Malaria*.—There were 11 cases of enlarged spleen in English schools out of the 6,933 children examined (.16%). In Malay schools there were 8 cases out of 2,402 children examined (.33%). There was only 1 case of enlarged spleen in the Chinese schools examined. None of the boys at Pulau Tekong vernacular school had enlarged spleen this year.

(5) *Lectures*.—Short talks and demonstrations on health habits were given whenever necessary during the routine medical examination of pupils. There appeared to be a tendency among boys and teachers voluntarily to seek for information on health matters.

(6) *Treatment*.—Only the poor were treated free at the General Hospital or at the Out-door Dispensaries. Others were advised to see their own private practitioners. The boys of the Malay vernacular schools were treated free at the Government travelling dispensary.

(7) *Systematic examination of School Teachers and other staff of Government, Aided and Vernacular Schools*.—The total number examined was 310 teachers and 115 other staff. The principal defects found amongst teachers were:—

	Cases
Dental caries	34
Enlarged tonsils	2
Defective vision	4
Diabetes	1
Asthma	1
Anæmia	1

(8) *Propaganda*.—Propaganda work was carried out through posters and cinema films.

Cinema Films.—A film on malaria made locally was added to the list of films shown this year.

Eight cinema shows were given this year to about 2,000 children and their parents.

(9) *General*.—Since the outbreak of typhoid the different school authorities have exercised a proper supervision of the feeding of those who come for instruction to their schools. The hawkers are now medically examined at the end of the routine medical inspection of each school.

The Inspector of schools, the heads of schools and the teachers have given their hearty co-operation and encouragement in this work.

SUMMARY OF SCHOOL SANITARY INSPECTIONS FOR THE YEAR 1933

	English Schools	Malay Schools	Chinese Schools	Tamil Schools	Sanskrit Schools	Arab Schools	Total
1. Number of inspections for general sanitation	144	37	1,025	56	3	5	1,270
2. Number of new premises inspected as to their accommodation capacity and sanitary arrangements	15	..	110	3	1	2	131
3. Number of new school premises granted with accommodation certificates	15	..	52	3	1	2	73
4. Number of schools reported as being housed in unsuitable premises and consequently asked to remove to more suitable premises	..	..	3	..	..	..	3
5. Number of schools reported to Asst. Director of Education (Chinese) and Inspector of Schools, Singapore for action re sanitary improvements, over crowding, insanitary conditions or undesirable cubicles	3	1	5	2	..	..	11
6. Number of schools where sanitary improvements are carried out, overcrowding relieved, cubicles demolished, etc.	2	..	5	2	..	..	9
7. Number of disinfections carried out	18	1	..	1	..	..	20
8. Number of visits to pupils in their homes re-infectious diseases	368						

TREATMENT AS CARRIED OUT SINCE LAST MEDICAL EXAMINATION

English Schools	Anaemia	Enlarged Tonsils and Adenoids	Nasal Catarrh	Bronchial Catarrh	Defective Vision	Conjunctivitis	Trachoma	Other Eye Affections	Dental Caries	Sordes	Sores	Scabies	Ringworm	Other Skin Affections	Otorrhoea	Enlarged Spleen	Enlarged Glands
Holy Innocents School	1	33	..	..	2	..	1	..	36	..	3	1	1	..	..	..	..
St. Joseph's Institution	..	51	..	1	14	3	..	..	246	..	21	5	18	36	..	..	..
St. Patrick's School	..	18	1	1	5	..	..	..	103	2	..	2	12	25	2	1	..
St. Anthony's Boys School	..	..	16	1	1	..	2	..	94	..	..	4	..	17	2	..	..
Geylang English School	..	..	20	..	..	3	2	1	54	1	..	1	4	13	2	..	..
Teluk Kurau English School	..	..	..	..	..	..	..	..	23	..	..	2	7	17	..	..	..
Anglo-Chinese School	..	13	..	2	30	..	..	..	121	..	..	..	30	15	3	..	..
Radin Mas School	..	8	..	..	1	1	2	1	29	..	..	..	1	8	..	4	..
Gan Eng Seng School	..	8	..	1	9	..	..	..	34	..	10	..	..	..	..	..	..
Outram School	..	2	1	..	21	..	..	..	94	..	20	3	3	4	1	..	..
St. Andrew's School	..	3	..	..	27	..	..	..	73	..	11	1	15	3	..	..	..
Raffles Institution	..	..	..	..	49	..	..	..	164	..	8	2	34	..	..	..	..
Victoria Bridge School	..	3	..	..	19	3	..	1	90	..	18	3	13	7	1	1	..
Rangoon Road School	..	4	..	..	7	3	1	..	45	..	20	1	4	1	1	..	..
Serangoon English School	..	2	..	..	2	7	..	1	13	..	8	..	..	1	..	..	..
Pasir Panjang English School	..	..	..	..	..	1	..	..	12	..	7	..	..	..	..	..	..
Bukit Panjang English School	..	2	..	..	..	..	..	..	13	..	5	..	..	1	..	..	..
Government Trade School	..	1	1	..	1	1	..	..	..	3	..	15	..	..	..	..	2
Totals	1	184	4	6	190	23	5	3	1244	3	134	25	157	148	12	6	2

TREATMENT AS CARRIED OUT SINCE LAST MEDICAL EXAMINATION

Chinese and Malay Schools	Anæmia	Enlarged Tonsils and Adenoids	Nasal Catarrh	Bronchial Catarrh	Defective Vision	Conjunctivitis	Trachoma	Other Eye Affections	Dental Caries	Sores	Scabies	Ringworm	Other Skin Affections	Otorrhœa	Enlarged Spleen	Enlarged Glands
CHINESE SCHOOLS																
Hop Kuan Free School ..	..	..	..	..	2	..	..	..	3	4	..	..	..	..	..	..
Chien Hwa Kindergarten ..	..	..	..	..	..	3	..	..	..	3	..	1	1	..	..	..
Nanyang Pin Min School ..	..	..	..	3	..	..	..	..	6	1	1	..	..	..	..	..
Chong Cheng School ..	..	5	..	..	1	2	..	..	47	16	1	1	..	..	..	..
Holy Innocents Chinese Boys' School ..	..	1	..	..	..	2	..	..	5	..	..	..	..	..	..	..
Totals ..	..	6	..	3	3	7	..	..	61	24	2	2	1	..	..	..
MALAY SCHOOLS																
Kampong Jagoh Malay School ..	..	8	..	..	..	3	..	..	5	7	..	..	..	..	1	..
Telok Blanga Malay School ..	..	3	..	..	..	..	..	..	14	..	1	..	..	..	3	..
Rochoh Malay School ..	..	17	..	..	..	..	..	..	45	..	1	2	16	3	..	..
Padang Terbakar Malay School ..	2	3	..	..	..	..	..	..	..	..	1	3	5	1	..	..
Beting Kusa Malay School ..	..	11	..	..	..	1	..	..	..	..	..	..	..	1	..	..
Sepoy Lines Malay School ..	..	..	..	1	..	..	..	..	..	1	1	3	11	..	..	..
Tanjong Katong Malay School ..	..	15	..	..	..	..	..	..	..	..	4	..	..	..	..	..
Tanglin Besar Malay School ..	..	19	..	..	..	2	..	..	23	..	2	8	32	2	..	..
Siglap Malay School ..	..	6	..	..	..	7	..	..	..	14	4	2	1	..	..	..
Tanglin Kechil Malay School ..	..	..	..	..	3	3	..	1	..	16	1	..	5	..	1	..
Geylang Malay School ..	..	7	..	..	..	7	..	..	..	19	..	3	2	2	4	..
Teluk Kurau Malay School ..	3	2	..	2	..	7	..	..	..	25	1	..	7	..	1	2
Kampong Glam Malay School ..	..	1	1	1	..	..	..	..	30	2	1	3	1	..	..	..
Tanah Merah Besar School ..	..	1	..	..	..	1	..	..	10	4	..	..	1	..	..	..
Totals ..	5	93	1	4	3	31	..	1	127	88	17	24	81	9	10	2

III.—SCHOOLS, PENANG SETTLEMENT.

There are 23 vernacular boys schools in Penang Island with a total enrolment of 3,545 scholars. These boys are medically examined each year by the Assistant Health Officer, Schools. In addition, this officer visits these schools monthly to supervise treatment of minor ailments, to give treatment for worm and yaws infections and to deliver public health lectures.

Two hundred and seventy-eight such visits were made to these schools during the year and sixty-one lectures were delivered dealing principally with hookworm and malaria prevention illustrated by posters and diagrams. Cinema films on malaria, tuberculosis and child welfare were shown on six occasions.

There are 12 English Schools in George Town where medical inspection is carried out by the Assistant School Health Officer; he is aided in this work by the Assistant Medical Officer in charge of Chowrasta Dispensary.

Public Health lectures were delivered in boys English Schools and cinema films on malaria and hookworm were shown on two occasions.

The girls schools in Penang Island number 17, four of these are English schools and 13 vernacular with a nominal roll of 3,365. These are visited by the Lady Medical Officer. In addition there are 14 girls schools in Province Wellesley and Dindings

with a roll of 1,125 pupils. These are also inspected annually by the Lady Medical Officer. In Province Wellesley there are 48 boys schools with an attendance of 6,367. The boys receive medical inspection and treatment through the Health Officer who is assisted in this work by the Assistant Medical Officers attached to the three hospitals situated in the north, south and central districts of Province Wellesley.

In the Dindings where there are 9 boys schools with an enrolment of 485 boys, medical inspection is done by the Deputy Medical Officer.

The following is a summary of the records obtained in school medical examination:—

SCHOOL MEDICAL DATA—1933

Details of Medical Inspection	Boys			Girls	
	English Schools, Penang	Vernacular Schools, Penang	Vernacular Schools, P. W.	English	Vernacular
No. of schools visited	13	25	49	4	31
No. of pupils examined	5,369	2,854	5,183	2,204	1,855
No. of individual children found to require treatment (excluding those with dental defects and worm infections) ..	1044 (19·4%)	634 (22·6%)	1,522 (29·3%)	562 (25·4%)	219 (11·2%)
No. with gross dental defect	2,564 (45·9%)	1,286 (45·1%)	1,174 (22·6%)	1,120 (50·8%)	850 (45·3%)
No. with defects of ear, nose and throat ..	344 (6·4%)	269 (9·4%)	168 (3·3%)	486 (22·0%)	285 (15·3%)
No. with skin infections	230 (4·2%)	174 (6·1%)	486 (9·3%)	183 (8·3%)	192 (10·3%)

The figures above reveal the existence of a large number of remedial and preventable defects amongst children and indicates the need for further advance in public health measures.

There is a medical examination record card for each child attending school upon which details of the annual inspection are entered. Medical examinations in schools in rural areas are followed by visits of the Travelling Dispensary. The headmasters of urban schools are required to inform the parents or guardians of ailing children the nature of the defect and to see that the child receives the remedy which is advised.

Dr. ETHEL MORRIS officiated as Lady Medical School Officer during the greater part of the year. She was succeeded by Dr. M. WEIR, Lady Medical Officer. A complete medical survey of girls' schools in the Settlement was completed by the end of the year.

IV.—SCHOOLS, MALACCA.

During the year 10,607 pupils were medically examined distributed as follows.

Boys English Schools	1,852
Girls English Schools	793
Malay Vernacular Schools	7,962

Of these pupils 274 were found to be in very poor physical condition, 35 suffered from cardiac disease, 56 had yaws, 349 had deficient eyesight, 2,103 suffered from adenoids and enlarged tonsils while no less than 5,957 (more than half) had dental caries.

Medical inspections are carried out by the Lady Medical Officer, the Deputy Health Officer, and the Assistant Health Officers resident at Jasin and Alor Gajah.

A school dental service is urgently required to deal with the large amount of dental caries present among the scholars.

APPENDIX "F"

MEDICAL DEPARTMENT.

SOCIAL HYGIENE BRANCH.

ANNUAL REPORT FOR 1933

1. Treatment Centres.—

I.—SINGAPORE

Male Clinics—

- (a) Bencoolen Street Clinic.
- (b) Tanjong Pagar Clinic.
- (c) General Hospital Clinic.

Female Clinics—

- (a) Outdoor Dispensary, General Hospital.
 (b) Kandang Kerbau Women and Children O. D. D.

Outdoor Dispensaries which treat Venereal Diseases—

- (a) Bukit Timah Outdoor Dispensary.
 (b) Kandang Kerbau Outdoor Dispensary.
 (c) Paya Lebar Outdoor Dispensary.

II.—PENANG

- (a) Kampong Kolam Clinic.
 (b) General Hospital Clinic.
 (c) Chowrasta Outdoor Dispensary.
 (d) Balik Pulau Outdoor Dispensary.
 (e) Government Travelling Dispensary.
 (f) Butterworth and Penagga Dispensary.
 (g) Sungei Bakap Outdoor Dispensary.
 (h) Lumut Hospital.
 (i) Bukit Metajam Dispensary.
 (j) Pengkalam Bahru Outdoor Dispensary.
 (k) Prison Hospital.
 (l) Women and Children Outdoor Dispensary.

III.—MALACCA

- (a) Durian Daun Hospital.
 (b) Travelling Dispensary.
 (c) Venereal Disease Clinic, Malacca.
 (d) Government Outdoor Dispensary, Jasin.
 (e) Government Outdoor Dispensary, Alor Gajah.
 (f) Prison Dispensary.

2. Classification of Cases.—

New Cases—

		Singapore		Penang		Malacca	
		1932	1933	1932	1933	1932	1933
Males ...	...	14,926	11,166	7,272	6,646	2,785	3,064
Females ...	...	1,046	795	1,274	1,113	443	472
Total ...	...	15,972	11,961	8,546	7,759	3,228	3,536
<i>Re-attendances—</i>							
Males ...	...	244,645	143,747	60,993	57,328	12,486	14,812
Females ...	...	5,736	5,626	7,915	4,702	1,024	880
Total ...	...	250,381	149,373	68,908	62,030	13,510	15,692
<i>Total attendances including new cases—</i>							
		266,353	161,334	77,454	69,789	16,738	19,228

3. Classification of diseases.—

Singapore—

		1932			1933		
		New cases	Re-attendances	Total	New cases	Re-attendances	Total
Syphilis ...	...	5,306	62,232	67,538	4,287	32,801	37,088
Soft Sore ...	...	4,009	76,186	80,195	2,223	46,809	49,032
Gonorrhœa ...	...	3,462	84,435	87,897	2,622	54,685	57,307
Others ...	...	3,195	27,528	30,723	2,829	15,078	17,907
Total ...	...	15,972	250,381	266,353	11,961	149,373	161,334
<i>Penang—</i>							
Syphilis ...	...	4,112	31,417	35,529	3,374	27,565	30,939
Soft Sore ...	...	583	6,962	7,545	652	5,742	6,394
Gonorrhœa ...	...	1,544	17,907	19,451	1,377	16,152	17,529
Others ...	...	2,307	12,622	14,929	2,356	12,571	14,927
Total ...	...	8,546	68,908	77,454	7,759	62,030	69,789
<i>Malacca—</i>							
Syphilis ...	...	1,763	4,904	6,667	1,848	6,421	8,269
Soft Sore ...	...	292	1,383	1,675	238	1,302	1,540
Gonorrhœa ...	...	660	5,492	6,152	721	5,626	6,347
Others ...	...	513	1,731	2,244	720	2,343	3,072
Total ...	...	3,228	13,510	16,738	3,536	15,692	19,228

NUMBER OF ATTENDANCES BY NATIONALITIES

			<i>New cases</i>	<i>Re-attendances</i>	<i>Total</i>
<i>Singapore—</i>					
Europeans	...	...	308	1,910	2,218
Chinese	...	...	7,431	79,733	87,164
Malays	...	...	760	11,144	11,904
Indians	...	...	3,079	49,788	52,867
Others	...	...	383	6,798	7,181
Total			11,961	149,373	161,334
<i>Penang—</i>					
Europeans	...	...	31	225	256
Chinese	...	...	3,529	28,445	31,974
Malays	...	...	1,103	5,523	6,626
Indians	...	...	2,901	26,680	29,581
Others	...	...	195	1,157	1,352
Total			7,759	62,030	69,789
<i>Malacca—</i>					
Europeans	...	...	6	170	176
Chinese	...	...	2,005	7,487	9,492
Malays	...	...	607	1,670	2,277
Indians	...	...	884	5,726	6,610
Others	...	...	34	639	673
Total			3,536	15,602	19,228

RATIO OF ATTENDANCES TO NEW CASES

Ratio of total attendances to new cases—

<i>Singapore</i>			<i>Penang</i>			<i>Malacca</i>		
1931	1932	1933	1931	1932	1933	1931	1932	1933
14.2	15.6	12.5	6.5	8.06	8.0	3.5	4.2	4.4

Treatment of Seamen.—

The new clinic situated at Breeze Road at Kampong Bahru District caters for men of the Mercantile Marine and conforms to the International Agreement by treating seamen of all nationalities free and providing them with therapeutic agents to carry them through to the next port of call.

Numbers of seamen treated—

		1932	1933
New Cases	...	636	670
Re-attendances	...	5,830	6,410
Total		6,466	7,080

Nationalities of seamen treated—

		1932	1933
British	...	146	157
Other Europeans	...	75	75
Chinese	...	316	363
Malays	...	25	12
Indians	...	55	42
Others	...	19	21
Total		636	670

Treatment by Private Practitioners—

There are at present eight private practitioners on our list who are supplied by Government with drugs and who have agreed to treat patients at a reduced fee.

Number of patients treated by general practitioners are :—

		<i>Syphilis</i>		<i>Gonorrhœa</i>		<i>Total</i>	
		1932	1933	1932	1933	1932	1933
New cases	...	1,130	1,094	397	254	1,527	1,348
Re-attendances	...	1,246	1,590	362	373	1,608	1,963
Total		2,376	2,684	759	627	3,135	3,311

Ablution Centre, Bencoolen Street Clinic—

The following are the attendances at the Ablution Centre :—

	1932	1933
Europeans	590	429
Chinese	715	510
Malays	138	143
Indians	327	358
Others	438	375
Total	2,208	1,815

Serological Examinations—

These are carried out at Singapore by the Professor of Bacteriology and at Penang and Malacca by the officers in charge of the Pathological Departments at these Settlements.

	No. of blood tests	Positive	Negative
Singapore	10,882	4,493	6,389
Penang	4,836	2,481	2,355
Malacca	2,080	1,349	731

*Analysis of work done in V.D. Clinics—**(a) Intravenous—*

	Singapore	Penang	Malacca
Arsenobenzol	16,730	9,211	5,476
Mercury	—	504	—
Collosol Iodine	1,291	87	23
Thiostab	126	14	15
Neosilbersalvarsan	1,896	114	175
Trypaflavine	280	488	419
Sulfarsenol	135	5	84
Dmelcos	300	—	—

(b) Intramuscular—

	Singapore	Penang	Malacca
Bismuth	12,431	5,165	1,922
Contramine	263	136	54
Trimine	220	37	41
Manganese Butyrate	324	139	—
Collosol Manganese	116	135	70
Bivatol	117	—	—
Aolan	5	—	—

(c) Hypodermic—

	Singapore	Penang	Malacca
Vaccine Gonococcus	20,880	2,729	3,040
Sulphostab	1,459	683	118
Gonoyatren	83	287	—
Arthigon	30	509	—
Adrenaline	8	—	—

Miscellaneous—

	Singapore	Penang	Malacca
Irrigations	63,408	19,281	8,060
Dressings	59,024	24,495	6,890
Prostatic Massage	3,218	523	485
Minor Operations	791	279	274
Dilatations	713	3	2

Microscopic Examinations—

	Singapore	Penang	Malacca
Gonococci	+ 3,382	+ 1,314	+ 771
	- 2,686	- 379	- 372

Dark Ground Illumination Films—

	Singapore	Penang	Malacca
	+ 346	+ 14	+ 1
	- 1,437	- 57	- 2

Propaganda—

The Social Hygiene Branch continues to distribute pamphlets and leaflets to the public. Applications from outstations for these were promptly attended to.

Large posters in Chinese, Malay and Tamil are daily posted throughout the streets. These explain the dangers of venereal diseases and the location of the clinics, and call the attention of the public to the facilities offered by Government in the form of free and confidential treatment.

TABLE I

STAFF

The authorised number of the European staff of the Medical Department of the Straits Settlements in 1933, including officers seconded for service in the Unfederated Malay States, was 180.

GENERAL

Director of Medical and Health Services, Straits Settlements.
Deputy Director of Medical and Health Services, Straits Settlements.
Secretary to Director.
Accountant, Medical Department.
Chief Medical Officer, Singapore.
Chief Medical Officer, Penang.
Chief Medical Officer, Malacca.
Nine Leave Supernumerary Medical and Health Officers.
Nine Leave Supernumerary Nursing Sisters.

HOSPITALS AND DISPENSARIES

Senior Surgeon, Singapore.
One Radiologist, Singapore.
Surgeon, Penang.
Seven Medical Officers, Singapore. (One appointment retrenched on 1-7-33)
Five Medical Officers, Penang.
One Medical Officer, Malacca.
One Anaesthetist, Singapore.
One Dental Officer, Singapore.
One Dispensing Chemist, Singapore.
One Medical Officer, Labuan.
Secretary, General Hospital, Singapore.
One Matron, Super-scale, General Hospital, Singapore.
One Matron, Grade I, Singapore.
One Matron, Grade I, Penang.
Three Matrons, Grade II, Singapore.
Two Matrons, Grade II, Penang.
One Matron, Grade II, Malacca.
Thirty-five Sisters, Singapore.
Fourteen Sisters, Penang.
One Sister, Malacca.
Two European Attendants, Singapore.
One Lay Superintendent, Leper Settlement, Pulau Jerejak.

HEALTH BRANCH

Chief Health Officer, Singapore.
Senior Health Officer, Penang.
Four Health Officers, Singapore.
One Health Officer, Penang.
One Health Officer, Malacca.
One Chief Sanitary Inspector, Singapore.
One Chief Sanitary Inspector, Penang.
One Lay Superintendent, Quarantine Station, Singapore.
Two Public Health Sisters, Singapore.
One Public Health Sister, Penang.
One Public Health Sister, Malacca.

PATHOLOGICAL BRANCH

One Pathologist, Singapore.
One Pathologist, Penang.
One Bacteriologist, Singapore.

COLLEGE OF MEDICINE, SINGAPORE

Principal.

Professor of Physiology.

Professor of Anatomy.

Professor of Medicine.

Professor of Surgery.

Professor of Clinical Surgery.

Professor of Midwifery.

Professor of Bacteriology.

Professor of Biology.

Professor of Bio-chemistry.

Professor of Dental Surgery.

Dental Mechanic.

Janitor.

MENTAL HOSPITAL, SINGAPORE

Medical Superintendent.

Assistant Medical Superintendent.

One Matron, Grade I.

One Sister.

Three European Attendants.

SOCIAL HYGIENE BRANCH

Chief Medical Officer, Social Hygiene.

In addition, 7 superscale and 15 time-scale supernumerary Medical and Health Officers and 2 supernumerary Matrons and 11 supernumerary Nursing Sisters are borne on the establishment for service in the Unfederated Malay States, making a total of 180.

The locally qualified medical staff (Senior Deputies Grade, Deputies Grade and Assistants Grade) number 71.

TABLE II

(c) FINANCIAL

1933

(a) Revenue

Settlement	Hospital Fees, etc.	Government contribution to Hospitals Board	Total Revenue of Hospitals Board	Medical, General and Health	Total
	\$	\$	\$	\$	\$
Singapore ..	223,350	*536,750	*760,100	27,550	787,650
Penang ..	94,490	222,060	316,550	8,750	325,300
Malacca ..	9,120	93,180	102,300	1,520	103,820
Labuan ..	340	2,725	3,065	520	3,585
Total ..	327,300	854,715	1,182,015	38,340	1,220,355

EXPENDITURE

OF THE SINGAPORE EXPENDITURE UNDER HOSPITALS AND DISPENSARIES, \$5,770 IS MET BY PROVISION OTHER THAN CONTRIBUTION TO THE HOSPITALS BOARD AND \$720 SIMILARLY, IN THE CASE OF MALACCA

(b) Expenditure

Settlement	Items of Expenditure	Medical General	Hospitals & Dispensaries	Health Branch	Social Hygiene Branch	General Clerical Service	Total
		\$	\$	\$	\$	\$	\$
Singapore	Personal Emoluments ..	336,920	714,750	148,660	52,050	51,220	1,303,600
	Other Charges ..	50,440	*749,050	50,190	23,590	..	873,270
	Special Expenditure ..	2,440	16,820	45,480	..	..	64,740
	Sub-total ..	389,800	1,480,620	244,330	75,640	51,220	2,241,610
Penang	Personal Emoluments ..	33,890	348,920	105,560	6,580	22,250	517,200
	Other Charges ..	3,110	310,300	35,150	3,360	..	351,920
	Special Expenditure ..	..	6,250	49,090	..	..	55,340
	Sub-total ..	37,000	665,470	189,800	9,940	22,250	924,460
Malacca	Personal Emoluments ..	20,400	102,450	37,780	6,810	10,850	178,290
	Other Charges ..	3,420	93,460	15,800	1,730	..	114,410
	Special Expenditure ..	..	9,560	33,030	..	..	42,590
	Sub-total ..	23,820	205,470	86,610	8,540	10,850	335,290
Labuan	Personal Emoluments ..	7,360	5,070	2,400	..	..	14,830
	Other Charges ..	..	3,065	590	..	..	3,655
	Special Expenditure ..	..	..	4,990	..	..	4,990
	Sub-total ..	7,360	8,135	7,980	..	..	23,475
Total	Personal Emoluments ..	398,570	1,171,190	294,400	65,440	84,320	2,013,920
	Other Charges ..	56,970	1,155,875	101,730	28,680	..	1,343,255
	Special Expenditure ..	2,440	32,630	132,590	..	..	167,660
	GRAND TOTAL ..	457,980	2,359,695	528,720	94,120	84,320	3,524,835

*The above statement includes under revenue and expenditure the Government contribution of \$132,820 to the Tan Tock Seng's Hospital, the funds of which are administered by a Special Committee.

The following is a brief summary of the Revenue and Expenditure for Tan Tock Seng Hospital.

		\$	\$
Balance brought forward from 1932	...	...	7,179
Government contribution, 1933	...	...	132,821
Rent, interests, etc.	...	...	8,461
			<u>148,461</u>
<i>Less:—</i>			
Salaries and wages	...	26,432	
Drugs, equipment and special upkeep	...	115,883	
			<u>142,315</u>
Balance carried forward to 1934	...	...	\$ 6,146

The Hospital is staffed and administered by officers paid from Hospitals and Dispensaries, Personal Emoluments, Colonial Estimates.

Ten thousand four hundred and fourteen dollars expended on vitamin research by Professor of Biochemistry was met from the Colonial Development Fund.

Sums expended by the Public Works Department on upkeep of buildings, minor repairs, etc., are not included in the financial statement.

TABLE IIIA

ESTIMATED POPULATION, WITH BIRTHS AND DEATH-RATES, FOR THE YEARS 1932 AND 1933

	POPULATION		BIRTHS		DEATHS		BIRTH-RATIO PER MILLE		DEATH-RATIO PER MILLE	
	Estimated 1932	Estimated 1933	1932	1933	1932	1933	1932	1933	1932	1933
Singapore	580,438	514,500	20,762	21,569	11,840	11,580	35.77	41.90	20.40	22.51
Penang	204,011	182,613	6,782	6,844	4,941	5,037	33.24	37.48	24.22	27.58
Province Wellesley	142,820	135,287	5,389	5,306	3,145	3,578	37.73	39.22	22.02	26.45
Dindings	20,862	18,130	587	676	359	527	28.14	37.29	17.21	29.07
Malacca	191,335	180,892	7,309	7,859	4,048	4,257	38.20	43.45	21.17	23.53
Labuan	7,739	7,405	277	284	208	222	35.79	38.35	26.88	29.97
Total	1,147,205	1,038,827	41,106	42,538	24,541	25,201	35.83	40.95	21.39	24.26

TABLE IIIB

QUARTERLY DEATH-RATES FOR VARIOUS PARTS OF THE COLONY DURING THE
PAST THREE YEARS WERE:—

YEAR	1931				1932				1933			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Singapore and Labuan ..	20.62	27.93	23.81	21.98	20.51	21.57	19.24	20.75	18.73	20.09	21.72	23.59
Penang Island	23.03	28.30	22.63	23.34	23.60	26.44	22.81	24.40	25.36	24.53	23.87	30.18
Province Wellesley ..	19.39	27.17	20.68	21.19	21.84	22.90	19.31	23.59	24.85	26.19	23.35	28.18
Dindings	19.02	26.51	19.41	20.23	18.14	16.73	17.15	19.94	15.73	20.85	28.26	43.11
Malacca	21.38	25.53	22.57	26.91	21.82	22.56	18.47	21.81	21.80	22.69	22.11	24.26

TABLE IIIC

POPULATION ESTIMATED RACIALLY AND COLLECTIVELY OF THE STRAITS SETTLEMENTS FOR THE YEARS
1933, 1932 AND 1931

Settlement or Province	Euro- peans	Eura- sians	Chinese	Malays	Indians	Other Nation- alities	Estimated 30th June	1931 Census	Estimated	Estimated
	1933	1933	1933	1933	1933	1933	1933	1931	1931	1932
Singapore	7,611	7,051	383,617	67,050	40,991	8,180	514,500	558,861	562,866	580,438
Penang	1,251	2,102	113,913	40,897	22,616	1,834	182,613	198,788	199,150	204,011
Province Wellesley ..	215	275	41,407	72,684	20,125	581	135,287	141,377	141,635	142,820
Dindings	20	16	6,286	7,855	3,874	79	18,130	19,592	19,628	20,862
Malacca	306	2,070	60,059	99,070	18,757	630	180,892	186,694	187,627	191,335
Labuan	21	36	2,094	5,048	139	67	7,405	7,538	7,605	7,739
Total S.S. ..	9,424	11,550	607,376	292,604	106,502	11,371	1,038,827	1,112,850	1,118,511	1,147,205

TABLE IIID

BIRTHS REGISTERED IN THE STRAITS SETTLEMENTS DURING 1933 AND THEIR RATIO
PER MILLE OF POPULATION

Settlement or Province	Male	Female	Total	Total	Total	Ratio per mille		
						1933	1932	1931
Singapore	11,409	10,160	21,569	20,762	20,470	41.90	35.77	36.37
Penang	3,494	3,350	6,844	6,782	7,083	37.48	33.24	35.57
Province Wellesley ..	2,716	2,590	5,306	5,389	5,281	39.22	37.73	37.29
Dindings	355	321	676	587	552	37.29	28.14	28.12
Malacca	4,097	3,762	7,859	7,309	7,700	43.45	38.20	41.58
Labuan	160	124	284	277	275	38.35	35.79	43.74
Total S.S. ..	22,231	20,307	42,538	41,106	41,361	40.95	35.83	36.98

TABLE IIIe

BIRTHS REGISTERED IN THE STRAITS SETTLEMENTS DURING 1933 ACCORDING TO NATIONALITIES

Settlement or Province	Europeans		Eurasians		Chinese		Malays		Indians		Other Nationalities		Total	
	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio
Singapore ..	183	24.04	157	22.27	16,805	43.81	2,842	42.39	1,297	31.64	285	34.84	21,569	41.92
Penang ..	34	27.18	47	22.36	4,528	39.75	1,356	33.16	856	37.35	23	12.54	6,844	37.48
Province Wellesley ..	2	9.28	14	50.90	1,938	46.56	2,617	36.01	730	36.27	5	8.61	5,306	39.22
Dindings ..	..	..	..	..	199	31.66	311	39.61	165	42.59	1	12.66	676	37.29
Malacca ..	6	19.61	70	33.82	2,690	44.79	4,354	48.95	724	41.79	15	23.81	7,859	43.45
Labuan ..	1	47.61	1	27.77	87	42.41	183	36.25	8	57.52	4	59.70	284	38.35
Total S.S. ..	226	23.98	289	25.01	26,247	43.21	11,663	39.86	3,780	35.49	533	29.29	42,538	40.95

TABLE IIIf

DEATHS REGISTERED IN THE STRAITS SETTLEMENTS DURING 1933 ACCORDING TO NATIONALITIES

Settlement or Province	Europeans		Eurasians		Chinese		Malays		Indians		Other Nationalities		Total	
	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio
Singapore ..	45	5.91	101	14.32	8,749	22.81	1,766	26.34	788	19.22	131	16.01	11,580	22.51
Penang ..	11	8.79	31	14.75	3,143	27.59	1,201	29.37	615	27.19	36	19.63	5,037	27.58
Province Wellesley ..	..	..	2	7.27	1,154	28.87	1,886	25.95	526	26.14	10	17.22	3,578	26.45
Dindings ..	..	..	..	..	209	33.25	226	28.80	90	23.23	2	25.32	527	29.07
Malacca ..	3	9.80	37	17.87	1,395	23.23	2,413	24.36	407	21.70	2	3.17	4,257	23.53
Labuan ..	..	..	..	..	42	20.05	170	33.68	6	43.16	4	59.70	222	29.97
Total S.S. ..	59	6.26	171	14.81	14,692	24.19	7,662	26.19	2,432	22.84	185	16.27	25,201	24.26

TABLE IIIfg

DEATHS REGISTERED IN THE STRAITS SETTLEMENTS IN 1933 UNDER DIFFERENT GROUPS OF AGES

Ages		Singapore	Penang	Province Wellesley	Dindings	Malacca	Labuan	Total
0 ———	..	1,141	343	331	56	455	1	2,327
4 weeks	..	851	277	170	24	549	3	1,874
3 months	..	798	206	128	25	349	40	1,546
6 months	..	827	257	137	26	318	28	1,593
1 year	..	1,157	493	451	73	405	33	2,612
5 years	..	319	185	200	30	119	8	861
10 years	..	154	68	74	7	47	3	353
15 years	..	226	121	96	15	77	4	539
20 years	..	411	209	122	19	132	11	904
25 years	..	568	250	137	28	194	12	1,189
30 years	..	675	294	179	24	214	4	1,390
35 years	..	640	304	173	32	184	6	1,339
40 years	..	685	319	190	27	218	15	1,454
45 years	..	608	292	146	27	153	14	1,230
50 years	..	654	314	191	27	177	9	1,372
55 years and Over	..	1,866	1,091	853	87	664	41	4,602
Unknown	..	..	14	..	..	2	..	16
Total	..	11,580	5,037	3,578	527	4,257	222	25,201

TABLE IIIH

TABLE SHOWING THE INFANTILE MORTALITY (UNDER ONE YEAR) IN THE STRAITS SETTLEMENTS INCLUDING DEATHS IN CHILDREN BORN ELSEWHERE

Settlements	Births	Deaths	Ratio per mille of Births		
			1933	1932	1931
Singapore	21,569	3,623	167.97	176.24	197.65
Penang	6,844	1,083	158.24	142.14	133.70
Province Wellesley	5,306	766	144.36	117.65	121.00
Dindings	676	131	193.79	151.62	130.43
Malacca	7,859	1,671	212.62	194.83	243.51
Labuan	284	73	257.04	256.31	287.27
Total ..	42,538	7,347	172.72	166.42	185.15

TABLE IIII

TABLE SHOWING THE INFANTILE MORTALITY (CHILDREN UNDER ONE YEAR) IN THE STRAITS SETTLEMENTS AND NATIONALITIES EXCLUDING DEATHS IN CHILDREN BORN ELSEWHERE

Nationalities	Singapore			Penang			Province Wellesley			Dindings			Malacca			Labuan			Total		
	Deaths	No. born elsewhere	Ratio	Deaths	No. born elsewhere	Ratio	Deaths	No. born elsewhere	Ratio	Deaths	No. born elsewhere	Ratio	Deaths	No. born elsewhere	Ratio	Deaths	No. born elsewhere	Ratio	Deaths	No. born elsewhere	Ratio
Europeans ..	5	27.32	2	58.82	..	..	..	..	..	1	166.66	..	..	..	8	..	35.40	..	..	..	..
Eurasians ..	19	121.02	3	63.83	..	..	..	..	..	9	128.57	..	..	..	31	1	107.27	..	..	..	..
Chinese ..	2,652	43 157.81	653	29 44.21	263	5 135.19	46	.. 201.01	507	6 188.48	14	.. 160.92	4,129	83 157.31	..	..	..	..	..	..	..
Malays ..	674	23 237.16	272	7 200.59	389	5 148.64	67	2 215.43	1,045	4 240.01	51	1 278.69	2,498	42 214.18	..	..	..	..	..	..	..
Indians ..	182	4 140.32	109	3 127.34	104	.. 142.47	20	2 121.21	96	2 131.21	6	.. 750.00	517	11 136.77	..	..	..	..	..	..	..
Other Nationalities and Unknown ..	20	1 70.18	3	1 130.43	..	..	..	..	..	1	66.67	1	.. 250.00	25	2 75.08	..	..	..	..	..	..
Total ..	3,552	71 164.68	1042	41 152.25	756	10 142.27	127	4 187.87	1,659	12 211.09	72	1 253.52	7,208	139 168.04	..	..	..	..	..	..	..

TABLE IIIJ

DEATHS REGISTERED IN THE STRAITS SETTLEMENTS AS REGARDS CERTIFICATES IN THE YEAR 1933

Particulars	Singapore	Penang	Province Wellesley	Dindings	Malacca	Labuan	Total
Died in Hospitals ..	3,724	1,011	339	98	492	11	5,675
Certified by outside Medical Practitioners ..	2,330	718	1	..	266	18	3,333
Certified by registering Officers after death ..	3,333	1,994	38	1	434	..	5,800
Uncertified ..	2,193	1,314	3,200	428	3,065	193	10,393
Total ..	11,580	5,037	3,578	527	4,257	222	25,201

TABLE IV

Meteorological returns for the Straits Settlements for the year 1933.

Singapore

METEOROLOGICAL RETURN FOR THE YEAR 1933

	TEMPERATURE °F					RAINFALL		WINDS AT MID-DAY		Remarks
	Average Maximum (A)	Average Minimum (B)	Mean $\frac{1}{2}$ (A + B)	Average Minimum on Grass	* Range	Amount in Inches	† Relative Humidity	Prevailing Direction	Average Speed mile per hour	
January ..	85.2	72.5	78.9	71.9	19	11.02	88.4	N.E.	8.7	
February ..	88.5	71.0	79.7	69.8	23	1.92	80.6	N.E.	7.2	
March ..	87.7	72.9	80.3	72.5	24	10.97	86.8	N.E.	8.0	
April ..	87.9	74.3	81.1	73.8	22	4.33	85.1	S.W.	7.6	
May ..	88.7	75.3	82.0	74.2	20	6.29	84.2	S.W.	7.8	
June ..	89.0	75.6	82.3	74.6	22	10.07	81.4	S.W.	9.4	
July ..	88.1	75.0	81.5	74.0	22	4.73	82.3	S.	9.8	
August ..	88.0	75.5	81.7	74.5	22	5.92	83.2	S.	9.2	
September ..	87.0	73.8	80.4	73.3	23	6.03	81.9	S.W.	8.9	
October ..	86.5	74.0	80.3	73.2	22	7.63	83.1	S.W.	10.1	
November ..	85.2	72.4	78.8	72.1	19	9.12	87.8	S.W.	6.9	
December ..	84.7	71.5	78.1	71.3	20	4.49	88.2	N.E.	6.0	
Year ..	87.2	73.7	80.4	72.9	† 25	82.52	84.4	S.W.	8.3	

* Difference between Extreme Maximum and Extreme Minimum during the month.

† Difference between Extreme Maximum and Extreme Minimum during the year.

‡ Percentage of Saturation—Mean for 24 hours.

Penang

METEOROLOGICAL RETURN FOR THE YEAR 1933

	TEMPERATURE °F					RAINFALL		WINDS AT MID-DAY		Remarks
	Average Maximum (A)	Average Minimum (B)	Mean $\frac{1}{2}$ (A + B)	Average Minimum on Grass	* Range	Amount in Inches	† Relative Humidity	Prevailing Direction	Average Speed mile per hour	
January ..	90.2	74.2	82.2	..	20	3.86	72	..	..	
February ..	91.9	73.1	82.5	..	24	2.74	76	..	..	
March ..	91.7	75.5	83.6	..	22	5.30	74	..	..	
April ..	90.5	75.5	83.0	..	20	10.89	79	..	..	
May ..	91.3	75.5	83.4	..	23	10.05	77	..	..	
June ..	89.9	74.5	82.2	..	23	4.82	75	..	..	
July ..	89.1	74.1	81.6	..	21	10.14	77	..	..	
August ..	89.8	74.3	82.1	..	20	4.81	77	..	..	
September ..	89.0	74.0	81.5	..	20	10.31	79	..	..	
October ..	87.9	73.7	80.8	..	19	15.81	83	..	..	
November ..	87.2	73.8	80.5	..	23	11.79	79	..	..	
December ..	87.7	72.7	80.2	..	21	6.85	74	..	..	
Year ..	89.7	74.2	82.0	..	† 25	97.37	77	..	..	

* Difference between Extreme Maximum and Extreme Minimum during the month.

† Difference between Extreme Maximum and Extreme Minimum during the year.

‡ Percentage of Saturation at 9 a.m.

TABLE IV—continued
Malacca
METEOROLOGICAL RETURN FOR THE YEAR 1933

TEMPERATURE °F						RAINFALL		WINDS AT MID-DAY		Remarks
	Average Maximum (A)	Average Minimum (B)	Mean $\frac{1}{2}$ (A+B)	Average Minimum on Grass	* Range	Amount in Inches	† Relative Humidity	Prevailing Direction	Average Speed miles per hour	
January ..	85.3	73.0	79.1	71.5	18	6.46	83.8	N.E.	11.6	
February ..	89.3	72.6	80.9	71.3	23	0.96	78.3	N.E.	9.2	
March ..	86.7	73.9	80.3	72.5	20	10.51	83.0	N.E.	8.7	
April ..	85.3	74.0	79.7	72.9	18	8.85	86.1	S.W.	8.9	
May ..	86.2	74.5	80.3	73.4	20	3.60	86.7	S.	7.8	
June ..	85.7	73.8	79.7	72.2	18	7.16	81.6	S.	6.9	
July ..	84.7	73.6	79.1	72.3	16	11.59	85.1	S.	8.1	
August ..	85.0	73.8	79.4	72.5	16	7.30	85.6	S.	8.9	
September ..	84.4	73.4	78.9	72.2	17	12.25	84.8	S.W.	7.4	
October ..	84.5	73.2	78.8	72.0	16	14.08	84.0	W.	8.5	
November ..	84.3	73.3	78.8	72.3	19	4.13	87.0	N.	6.9	
December ..	84.4	72.5	78.5	71.5	16	9.02	87.1	N.E.	7.4	
Year ..	85.5	73.5	79.5	72.2	† 23	95.91	84.4	S.W.	8.4	

* Difference between Extreme Maximum and Extreme Minimum during the month.

† Difference between Extreme Maximum and Extreme Minimum during the year.

‡ Percentage of Saturation—Mean for 24 hours.

Labuan
METEOROLOGICAL RETURN FOR THE YEAR 1933

TEMPERATURE °F						RAINFALL		WINDS AT MID-DAY		Remarks
	Average Maximum (A)	Average Minimum (B)	Mean $\frac{1}{2}$ (A+B)	Average Minimum on Grass	* Range	Amount in Inches	† Relative Humidity	Prevailing Direction	Average Speed miles per hour	
January ..	85.8	75.5	80.7	..	17	3.37	79	..	..	
February ..	85.8	74.3	80.0	..	21	2.68	79	..	..	
March ..	86.9	76.0	81.5	..	18	7.56	80	..	..	
April ..	88.0	76.5	82.3	..	20	4.88	78	..	..	
May ..	87.9	75.6	81.7	..	22	17.83	79	..	..	
June ..	87.8	75.6	81.7	..	19	2.87	77	..	..	
July ..	87.2	74.4	80.8	..	19	10.02	78	..	..	
August ..	88.2	75.3	81.7	..	21	10.49	78	..	..	
September ..	87.0	75.0	82.0	..	20	15.69	80	..	..	
October ..	86.1	74.1	80.1	..	24	19.63	82	..	..	
November ..	86.3	..	..	..	..	12.44	83	..	..	
December ..	85.6	75.1	80.3	..	23	14.47	84	..	..	
Year ..	86.9	..	..	..	† ..	121.93	80	..	..	

* Difference between Extreme Maximum and Extreme Minimum during the month.

† Difference between Extreme Maximum and Extreme Minimum during the year.

‡ Percentage of Saturation—Mean of observations at 9 a.m., 3 p.m. and 9 p.m.

TABLE V
HOSPITALS OR INSTITUTIONS STRAITS SETTLEMENTS
RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933

DISEASES	*Remaining in Hospital at end of 1932	YEARLY TOTAL		† Total Cases Treated	‡ Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
I.—Infectious and Parasitic Diseases						
1. Typhoid fever	12	303	95	315	34	
2. Paratyphoid fever	0	15	1	15	2	
3. Typhus :—						
(1) Typhus exanthematicus	0	7	1	7	0	
(2) Tropical typhus	0	2	0	2	0	
(3) Japanese river fever	...	...	...	...	...	
(4) Other rickettsia infec- tions	...	...	...	...	...	
4. Relapsing fever	...	...	...	...	...	
5. Undulant fever	...	...	...	...	...	
6. Smallpox	0	2	1	2	0	
7. Measles	1	53	0	54	2	
8. Scarlet fever	...	...	...	...	...	
9. Whooping cough	0	34	1	34	0	
10. Diphtheria	0	60	13	60	0	
11. Influenza :—						
(1) with pneumonia	0	49	1	49	1	
(2) with other respiratory complications	0	37	0	37	3	
(3) without respiratory com- plications	14	942	2	956	14	
12. Cholera	...	...	...	...	...	
13. Dysentery :—						
(1) Amoebic	14	285	49	299	16	
(2) Bacillary	23	236	66	259	8	
(3) Mixed	0	17	8	17	1	
(4) Undefined or due to other causes	8	88	13	96	1	
14. Plague :—						
(1) Bubonic	...	...	...	...	...	
(2) Pneumonic	...	...	...	...	...	
(3) Septicæmic	...	...	...	...	...	
(4) Undefined	...	...	...	...	...	
15. Erysipelas	0	21	1	21	0	
16. Acute poliomyelitis :—						
(1) Acute poliomyelitis	0	2	0	2	0	
(2) Acute polioencephalitis	...	...	...	...	...	
17. Encephalitis lethargica	2	5	2	7	0	
18. Cerebro-spinal fever	0	5	1	5	0	
19. Glanders	...	...	...	...	...	
20. Anthrax	...	...	...	...	...	
21. Rabies	...	...	...	...	...	
22. Tetanus :—						
(1) Tetanus of the newly born	3	87	86	90	1	
(2) Other forms of tetanus	2	32	16	34	1	
23. Tuberculosis of the respiratory system	256	1,850	743	2,106	264	
Carried forward	335	4,132	1,100	4,467	348	

The form shows in the main the arrangement of diseases in the *International Nomenclature, 1931 Edition*. To save space the unimportant diseases of any class can be grouped in their places as "Other Diseases" of the Class.

* *i.e.* the year previous to that for which the return is made

† "Total cases treated" will, of course, include those remaining in Hospital at the end of the previous year.

‡ The figures in this column to be carried on to the next year's Return.

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—continued

DISEASES	Remaining in Hospital at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward ...</i>	335	4,132	1,100	4,467	348	
I.—Infectious and Parasitic Diseases—continued						
24. Tuberculosis of the central nervous system ...	1	38	37	39	0	
25. Tuberculosis of the intestines or peritoneum ...	1	42	24	43	3	
26. Tuberculosis of the vertebral column ...	12	35	6	47	15	
27. Tuberculosis of other bones and joints ...	20	46	9	66	21	
28. Tuberculosis of the skin or subcutaneous tissue (lupus) ...	0	2	0	2	0	
29. Tuberculosis of the lymphatic system ... (abdominal & bronchial glands excepted)	1	46	4	47	3	
30. Tuberculosis of the genito-urinary system ...	0	13	1	13	1	
31. Tuberculosis of other organs:—						
(1) Adrenal ...	...	...	...	...	...	
(2) Other sites ...	1	41	15	42	1	
32. Tuberculosis disseminated:—						
(1) Acute ...	0	2	2	2	0	
(2) Chronic ...	0	2	0	2	2	
(3) Not distinguished as acute or chronic ...	0	4	4	4	0	
33. Leprosy ...	1,006	662	102	1,668	1,167	
34. Syphilis:—						
(1) Primary ...	28	236	0	264	8	
(2) Secondary ...	121	1,154	2	1,275	79	
(3) Tertiary ...	31	228	52	259	38	
(4) Hereditary ...	5	97	36	102	6	
(5) Period not indicated ...	17	243	73	260	21	
35. Other venereal diseases:—						
(1) Soft chancre ...	13	244	0	257	18	
(2) Gonorrhœa and its complications ...	53	775	0	828	51	
(3) Gonorrhœal ophthalmia ...	10	28	1	38	1	
(4) Gonorrhœal arthritis ...	20	182	1	202	15	
(5) Granuloma venereum ...	0	3	0	3	0	
(6) Tropical bubo ...	4	102	1	106	15	
36. Purulent infective septicæmia:—						
(1) Septicæmia ...	0	54	42	54	2	
(2) Pyæmia ...	0	26	11	26	0	
(3) Gas gangrene ...	0	3	3	3	0	
37. Yellow fever ...	...	...	...	...	...	
38. Malaria:—						
(1) Tertian (benign) ...	23	1,291	14	1,314	16	
(2) Quartan ...	3	126	3	129	6	
(3) Aestivo-autumnal (subtertian) ...	42	2,361	140	2,403	42	
(4) Mixed infections ...	5	83	5	88	1	
(5) Unclassified ...	20	626	10	646	15	
(6) Cachexia ...	22	859	29	881	23	
(7) Blackwater fever ...	0	3	1	3	0	
<i>Carried forward ...</i>	1,794	13,789	1,728	15,583	1,918	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—continued

DISEASES	Remaining in Hospital at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward</i> ...	1,794	13,789	1,728	15,583	1,918	
I.— <i>Infectious and Parasitic Diseases—</i> <i>continued</i>						
39. Other diseases due to Protozoa :—						
(1) Yaws (frambcesia) ...	0	30	0	30	1	
(2) Spirochaetosis ictero-haemorrhagica ...	...	...	...	...	...	
(3) Leishmaniasis (dermal) ...	...	...	...	...	...	
(4) Kala azar ...	...	...	...	...	...	
(5) Other diseases ...	...	...	...	...	...	
40. Ankylostomiasis ...	54	1,305	29	1,359	38	
41. Hydatid cysts ...	0	7	0	7	1	
42. Other diseases due to Helminths :—						
<i>Cestodes</i>						
(1) Taenia solium ...	...	...	...	...	...	
(2) Taenia saginata ...	0	7	0	7	0	
(3) Other cestodes ...	...	...	...	...	...	
<i>Nematodes</i>						
(4) Filaria ...	1	12	0	13	4	
(5) Ascaris ...	16	290	0	306	9	
(6) Trichuris trichiura ...	0	1	0	1	0	
(7) Oxyuris vermicularis ...	...	...	...	...	...	
(8) Dracunculus medinensis ...	0	2	0	2	0	
<i>Trematodes</i>						
(9) Schistosomum Japonicum ...	0	1	1	1	0	
(10) Clonorchis sinensis ...	0	3	1	3	0	
(11) Other helminths ...	0	9	0	9	0	
43.—(1) Sprue ...	1	3	2	4	0	
(2) Actinomycosis ...	1	1	0	2	0	
(3) Other mycotic infections excluding purely dermal mycosis ...	0	1	0	1	0	
44. Other infectious or parasitic diseases :—						
(1) Vaccinia including post vaccinal encephalitis ...	...	...	...	...	...	
(2) Other sequelæ of vaccination ...	0	2	0	2	0	
(3) Rubella ...	...	...	...	...	...	
(4) Varicella (chicken-pox) ...	5	68	0	73	1	
(5) Mumps and its complications ...	0	29	1	29	1	
(6) Dengue ...	0	68	0	68	0	
(7) Meliodosis ...	...	...	...	...	...	
(8) Myiasis ...	...	...	...	...	...	
(9) Glandular fever ...	0	1	0	1	0	
(10) Others ...	2	11	0	13	0	
II.— <i>Cancer and other Tumours</i>						
45. Cancer or other malignant diseases of the buccal cavity, and pharynx ...	4	44	9	48	1	
<i>Carried forward</i> ...	1,878	15,684	1,771	17,562	1,974	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—continued

DISEASES	Remaining in Hospital at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward ...</i>	1,878	15,684	1,771	17,562	1,974	
II.—Cancer and other Tumours— continued						
46. Cancer or other malignant tumours of the digestive organs, and peritoneum :—						
(1) Stomach ...	0	51	31	51	1	
(2) Liver (primary) ...	3	58	34	61	2	
(3) Other digestive organs ...	3	63	27	66	5	
47. Cancer or other malignant tumours of the respiratory organs ...	0	27	11	27	3	
48. Cancer or other malignant tumours of the uterus ...	0	43	5	43	3	
49. Cancer or other malignant tumours of other female genital organs ...	4	20	5	24	2	
50. Cancer or other malignant tumours of the breast ...	2	16	6	18	3	
51. Cancer or other malignant tumours of the male genito urinary organs ...	1	23	5	24	1	
52. Cancer or other malignant tumours of the skin ...	3	56	8	59	6	
53. Cancer or other malignant tumour of organs not specified	6	91	24	97	6	
54. Tumours non-malignant :—						
(1) Of female genital organs	1	50	2	51	4	
(2) Of other sites ...	3	87	4	90	7	
55. Tumours of under-terminated nature :—						
(1) Female genital organs ...	0	4	0	4	0	
(2) Other sites ...	0	18	4	18	0	
III.—Rheumatism, Diseases of Nutrition and of Endocrine Glands and other General Diseases						
56. Rheumatic Fever :—						
(1) with cardiac involvement	0	24	2	24	0	
(2) Without cardiac involve- ment ...	0	15	0	15	0	
57. Chronic rheumatism and osteo- arthritis ...	12	143	0	155	9	
58. Gout ...	...	...	...	...	...	
59. Diabetes (not including diabetes insipidus) ...	9	120	13	129	16	
60. Scurvy (including Barlow's dis- ease) ...	0	2	1	2	0	
61.—(1) Beri-beri including epidemic dropsy ...	121	814	193	935	89	
(2) Beri-beri associated with pregnancy or labour ...	1	74	10	75	1	
62. Pellagra ...	0	5	0	5	0	
63. Rickets ...	0	4	0	4	0	
64. Osteomalacia ...	...	...	...	...	...	
<i>Carried forward ...</i>	2,047	17,492	2,156	19,539	2,132	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—continued

DISEASES	Remaining in Hospital at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward</i> ...	2,047	17,492	2,156	19,539	2,132	
III.—Rheumatism, Diseases of Nutrition and of Endocrine Glands and other General Diseases—continued						
65. Diseases of the pituitary gland	1	2	0	3	0	
66. Diseases of the thyroid and parathyroid glands:—						
(1) Simple goitre ...	0	4	0	4	0	
(2) Exophthalmic goitre ...	2	25	4	27	1	
(3) Myxœdema, cretinism ...	1	4	0	5	2	
(4) Tetany ...	0	3	0	3	0	
(5) Other diseases of the thyroid glands ...	0	3	0	3	0	
67. Diseases of the thymus ...	...	...	...	...	...	
68. Diseases of the adrenal glands (excluding tuberculosis) ...	...	...	...	...	...	
69. Other general diseases—						
(1) Acidosis ...	0	1	0	1	0	
(2) Other diseases of metabolism ...	0	5	2	5	1	
IV.—Diseases of the Blood and Blood Forming Organs						
70. Hæmorrhagic conditions:—						
(1) Pupura ...	0	1	1	1	0	
(2) Hæmophilia ...	0	3	1	3	0	
71. Anæmia and chlorosis:—						
(1) Pernicious anæmia ...	1	25	5	26	1	
(2) Splenic anæmia ...	0	7	3	7	1	
(3) Chlorosis ...	...	...	...	...	...	
(4) Secondary anæmia ...	10	160	18	170	13	
(5) Others ...	2	44	9	46	1	
72. Leukæmia:—						
(1) Leukæmia ...	1	7	4	8	0	
(2) Hodgkin's diseases ...	1	6	0	7	1	
73. Diseases of the spleen:—						
(1) Banti's diseases ...	0	4	0	4	0	
(2) Others (not including diseases of the spleen due to malaria or leukæmia) ...	1	3	0	4	0	
74. Other diseases of the blood and blood forming organs ...	...	...	...	...	...	
V.—Chronic Poisoning						
75. Alcoholism (acute or chronic) ...	0	66	0	66	1	
76. Chronic poisoning by other organic substances:—						
(1) Opium ...	3	336	2	339	2	
(2) Morphia, cocaine ...	0	1	0	1	0	
(3) Others ...	0	6	0	6	0	
77. Chronic poisoning by mineral substances:—						
(1) Lead poisoning ...	0	25	0	25	1	
(2) Arsenical dermatitis ...	0	15	0	15	1	
(3) Others ...	0	3	0	3	0	
<i>Carried forward</i> ...	2,070	18,251	2,205	20,321	2,158	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—continued

DISEASES	Remaining in Hospital at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward ...</i>	2,070	18,251	2,205	20,321	2,158	
VI.—Diseases of the Nervous System and Sense Organs						
78. Encephalitis (not including encephalitis lethargica):—						
(1) Cerebral abscess ...	0	3	3	3	0	
(2) Other forms of encephalitis ...	5	15	9	20	3	
79. Meningitis (not including tuberculous meningitis or cerebro-spinal meningitis) ...	1	28	23	29	2	
80. Tabes dorsalis (locomotor ataxia) ...	10	43	0	53	17	
81. Other diseases of the spinal cord	7	24	2	31	7	
82. Apoplexy and paralysis:—						
(1) Cerebral hæmorrhage ...	3	39	25	42	0	
(2) Cerebral embolism ...	...	...	...	...	...	
(3) Cerebral thrombosis ...	1	19	0	20	3	
(4) Hæmiplegia cause not determined ...	33	69	6	102	38	
(5) Other paralysis ...	10	25	0	35	10	
83. General paralysis of the insane	30	32	26	62	31	
84. Other forms of insanity:—						
(1) Dementia præcox ...	205	34	20	239	205	
(2) Others ...	1,107	651	120	1,758	1,131	
85. Epilepsy ...	5	69	2	74	3	
86. Infantile convulsions (age under 5 years) ...	1	58	31	59	0	
87. Other diseases of the nervous system:—						
(1) Chorea ...	...	...	...	...	...	
(2) Neuritis and neuralgia ...	42	325	4	367	53	
(3) Paralysis agitans ...	3	6	0	9	3	
(4) Disseminated sclerosis ...	1	3	1	4	1	
(5) Neurasthenia ...	1	40	0	41	0	
(6) Hysteria ...	1	20	0	21	0	
(7) Others ...	1	39	5	40	5	
88. Diseases of the eye:—						
(1) Conjunctivitis ...	10	326	0	336	13	
(2) Trachoma ...	13	47	0	60	0	
(3) Corneal ulcer ...	5	122	0	127	24	
(4) Other diseases of the eye	182	482	0	664	190	
89. Diseases of the ear and or the mastoid sinus:—						
(1) Otitis externa ...	0	68	0	68	2	
(2) Otitis media ...	6	46	3	52	0	
(3) Mastoiditis ...	1	38	2	39	2	
(4) Others ...	0	41	0	41	0	
VII.—Diseases of the Circulatory System						
90. Pericarditis ...	1	13	5	14	1	
91. Acute endocarditis:—						
(1) Malignant ...	0	5	2	5	1	
(2) Others ...	2	24	16	26	1	
<i>Carried forward ...</i>	3,757	21,005	2,510	24,762	3,904	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—continued

DISEASES	Remaining in Hospital at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward</i> ...	3,757	21,005	2,510	24,762	3,904	
VII.—Diseases of the Circulatory System—continued						
92. Chronic endocarditis-valvular disease :—						
(1) Aortic valve disease ...	6	83	27	89	9	
(2) Mitral valve disease ...	4	84	19	88	11	
(3) Aortic and mitral ...	5	21	11	26	5	
(4) Others ...	0	8	2	8	0	
93. Diseases of the myocardium :—						
(1) Acute myocarditis ...	12	122	33	134	14	
(2) Chronic myocardial degeneration ...	2	63	22	65	11	
94. Diseases of the coronary arteries :—						
(1) Angina pectoris ...	0	4	0	4	0	
(2) Coronary thrombosis ...	0	4	3	4	0	
(3) Coronary sclerosis ...	0	2	1	2	0	
95. Other diseases of the heart :—						
(1) Auricular fibrillation ...	2	25	0	27	4	
(2) Heart block ...	0	3	2	3	1	
(3) Others ...	0	11	3	11	3	
96. Aneurysm :—						
(1) Aneurysm of aorta ...	3	23	10	26	3	
(2) Aneurysm of other arteries ...	0	7	3	7	1	
97. Arterio-sclerosis ...	10	90	55	100	11	
98. Gangrene ...	1	29	11	30	1	
99. Other diseases of the arteries ...	1	12	1	13	0	
100. Diseases of the veins :—						
(1) Varicose veins ...	1	28	0	29	0	
(2) Hæmorrhoids ...	10	221	0	231	8	
(3) Phlebitis ...	7	8	0	15	1	
(4) Thrombosis ...	4	5	1	9	1	
(5) Others ...	0	8	0	8	3	
101. Diseases of the lymphatic system :—						
(1) Lymphangitis ...	5	12	0	17	0	
(2) Lymphadenitis ...	1	32	0	33	3	
(3) Bubo (non-specified) ...	13	103	0	116	8	
102. Abnormalities of blood pressure :—						
(1) High blood pressure ...	0	29	4	29	2	
(2) Low blood pressure ...	...	...	...	...	...	
103. Other diseases of the circulatory system :—						
(1) Epistaxis ...	0	4	0	4	0	
(2) Others ...	0	13	4	13	0	
VIII.—Diseases of the Respiratory System						
104. Diseases of the nasal fossæ and its annexa :—						
(1) Diseases of the nose ...	5	240	0	245	1	
(2) Diseases of the accessory nasal sinuses ...	5	57	1	62	2	
<i>Carried forward</i> ...	3,854	22,356	2,723	26,210	4,007	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—continued

DISEASES	Remaining in Hospital at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward</i> ...	3,854	22,356	2,723	26,210	4,007	
VIII.—Diseases of the Respiratory System—continued						
105. Diseases of the larynx :—						
(1) Laryngismus stridulus ...	...	...	...	...	...	
(2) Laryngitis ...	0	24	1	24	1	
(3) Other diseases of the Larynx ...	0	3	0	3	1	
106. Bronchitis :—						
(1) Acute ...	24	404	3	428	8	
(2) Chronic ...	19	311	9	330	16	
(3) Not defined as acute or chronic ...	0	348	2	348	20	
107. Broncho-pneumonia ...	16	650	449	666	14	
108. Lobar-pneumonia ...	11	536	268	547	19	
109. Pneumonia (not otherwise defined) ...	1	34	12	35	0	
110. Pleurisy ...	...	...	...	...	...	
(1) Empyema ...	3	58	9	61	1	
(2) Other pleurisy ...	5	99	4	104	10	
111. Congestion and hæmorrhagic infarction of lung, etc. :—						
(1) Hypostatic congestion of lung ...	0	3	0	3	0	
(2) Massive collapse ...	...	...	...	...	...	
(3) Pulmonary embolism ...	0	1	1	1	0	
(4) Others ...	...	...	...	...	...	
112. Asthma ...	30	538	4	568	39	
113. Pulmonary emphysema ...	0	24	7	24	3	
114. Other diseases of the respiratory system :—						
(1) Chronic interstitial pneu- monia (including occu- pational diseases of the lung) ...	0	8	1	8	0	
(2) Gangrene of the lung ...	0	2	2	2	0	
(3) Abscess of the lung ...	0	14	10	14	0	
(4) Bronchiectasis ...	1	11	2	12	2	
(5) Others ...	4	40	1	44	2	
IX.—Diseases of the Digestive System						
115. Diseases of the buccal cavity, Pharynx, etc. :—						
(1) Pyorrhœa ...	2	110	0	112	5	
(2) Dental caries ...	0	107	0	107	5	
(3) Stomatitis ...	0	58	2	58	4	
(4) Ludwig's angina ...	0	1	1	1	0	
(5) Diseases of the tonsils ...	7	372	3	379	15	
(6) Others ...	2	120	4	122	4	
116. Diseases of the œsophagus ...	1	24	1	25	5	
117. Ulcer of the stomach or duode- num ...	...	...	...	...	...	
(1) Ulcer of the stomach ...	17	166	30	183	22	
(2) Ulcer of the duodenum ...	13	124	12	137	24	
<i>Carried forward</i> ...	4,010	26,546	3,561	30,556	4,227	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—continued

DISEASES	Remaining in Hospital at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward</i> ...	4,010	26,546	3,561	30,556	4,227	
IX.—Diseases of the Digestive System—continued						
118. Other diseases of the stomach :—						
(1) Gastritis ...	18	373	2	391	24	
(2) Others ...	9	253	1	262	7	
119. Diarrhoea and enteritis ...	11	245	110	256	2	
(under 2 years)						
120. Diarrhoea and enteritis :—						
(2 years and over)						
(1) Colitis ...	15	245	2	260	6	
(2) Otherwise defined ...	1	307	18	308	7	
121. Appendicitis ...	14	189	14	203	7	
122. Hernia, Intestinal obstruction :—						
(1) Hernia ...	12	187	2	199	12	
(2) Strangulated hernia ...	0	37	3	37	1	
(3) Intestinal obstruction ...	0	47	15	47	1	
(including intussusception)						
123. Other diseases of the intestines—						
(1) Constipation, intestinal stasis ...	3	115	1	118	2	
(2) Diverticulitis ...	0	9	1	9	0	
(3) Others ...	6	225	5	231	12	
124. Cirrhosis of liver ...	...	...	...	...	...	
(non-syphilitic)						
(1) Alcoholic ...	0	11	3	11	0	
(2) Not returned as alcoholic	14	167	55	181	12	
125. Other diseases of the liver :—						
(1) Acute yellow atrophy ...	0	1	0	1	0	
(2) Toxic hepatitis ...	0	2	0	2	0	
(3) Amoebic abscess and hepatitis ...	8	68	6	76	4	
(4) Others ...	1	49	8	50	4	
126. Biliary calculi :—						
(1) With cholecystitis ...	0	8	1	8	0	
(2) Without mention of cholecystitis ...	0	10	0	10	0	
127. Other diseases of the gall bladder and ducts :—						
(1) Cholecystitis without record of calculi ...	2	51	6	53	0	
(2) Others ...	3	64	9	67	9	
128. Diseases of the pancreas ...	0	3	1	3	0	
(excluding diabetes mellitus)						
129. Peritonitis, without stated cause	2	46	32	48	0	
X.—Diseases of the Genito-Urinary System (non-venereal)						
130. Acute nephritis ...	22	140	42	162	20	
131. Chronic nephritis ...	28	337	136	365	20	
132. Nephritis (undefined as acute or chronic) ...	3	29	4	32	6	
133. Other diseases of the kidney and annexa :—						
(1) Pyelitis ...	6	137	14	143	5	
(2) Others ...	10	78	16	88	0	
<i>Carried forward</i> ...	4,198	29,979	4,068	34,177	4,388	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—continued

DISEASES	Remaining in Hospital at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward ...</i>	4,198	29,979	4,068	34,177	4,388	
X.— <i>Diseases of the Genito-Urinary System (non-venereal)—continued</i>						
134. Calculi of the urinary passages:—						
(1) Calculi of the kidney and ureter ...	1	60	3	61	0	
(2) Calculi of the bladder ...	1	21	1	22	2	
(3) Calculi of unstated site ...	0	13	0	13	0	
135. Diseases of the bladder:—						
(1) Stricture ...	1	76	5	77	6	
(2) Others ...	2	34	0	36	2	
136. Diseases of the urethra ...						
(1) Cystitis ...	4	72	2	76	5	
(2) Others ...	5	62	1	67	4	
137. Diseases of the prostate ...	0	28	1	28	3	
138. Diseases of the male genital Organs:—						
(1) Epididymitis ...	2	24	0	26	0	
(2) Orchitis ...	2	42	0	44	2	
(3) Hydrocele ...	4	123	0	127	8	
(4) Others ...	3	66	2	69	2	
139. Diseases of the female genital organs:—						
(1) Diseases of the ovary ...	1	11	2	12	0	
(2) Diseases of the fallopian tube ...	3	69	3	72	3	
(3) Diseases of the parametrium ...	0	6	1	6	0	
(4) Diseases of the uterus ...	2	128	1	130	5	
(5) Diseases of the breast ...	2	28	0	30	1	
(6) Other diseases of the female genital organs ...	2	18	0	20	0	
XI.— <i>Conditions arising in Pregnancy, Childbirth and the Puerperal State</i>						
140. Post abortive sepsis ...						
(1) Septic abortion ...	0	2	2	2	0	
141. Abortion not returned as septic:—						
(1) Hæmorrhage following abortion ...	1	34	0	35	3	
(2) Abortion without record of hæmorrhage ...	1	145	0	146	2	
142. Ectopic gestation ...	0	18	0	18	0	
143. Other accidents of pregnancy ...	7	210	10	217	6	
144. Puerperal hæmorrhage:—						
(1) Placenta prævia ...	0	32	6	32	0	
(2) Other puerperal hæmorrhage ...	2	63	14	65	0	
145. Puerperal sepsis:—						
(1) Puerperal septicæmia ...	0	25	14	25	0	
(2) Puerperal sepsis, not including septicæmia ...	2	34	8	36	1	
<i>Carried forward ...</i>	4,246	31,423	4,144	35,669	4,443	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—continued

DISEASES	Remaining in Hospital at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward ...</i>	4,246	31,423	4,144	35,669	4,443	
XI.—Conditions arising in Pregnancy, Childbirth and the Puerperal State—continued						
146. Puerperal albuminuria and convulsions :—						
(1) Ante-partum eclampsia	4	38	6	42	1	
(2) Intra-partum eclampsia	0	13	3	13	0	
(3) Post-partum eclampsia ...	1	9	3	10	0	
(4) Albuminuria of pregnancy ...	0	66	1	66	1	
(5) Pyelitis of pregnancy ..	0	2	0	2	0	
(6) Otherwise defined ...	...	...	...	...	...	
147. Other toxæmias of pregnancy—						
(1) Hyperemesis gravidarum	0	33	1	33	2	
(2) Others ...	0	17	8	17	0	
148. Puerperal phlegmasia, embolism :—						
(1) Puerperal phlegmasia ..	0	2	0	2	1	
(2) Puerperal embolism ..	0	3	2	3	0	
149. Conditions associated with labour :—						
(1) Normal labour ...	88	4,440	7	4,528	91	
(2) Abnormal labour ...	13	644	11	657	8	
(3) Labour complicated with intercurrent disease ...	0	18	0	18	0	
(4) Accidents of childbirth	1	14	1	15	0	
150. Other or unspecified conditions of the puerperal state :—						
(1) Puerperal insanity ..	0	1	0	1	0	
(2) Puerperal diseases of the breast ...	0	6	0	6	0	
(3) Others ...	0	2	0	2	0	
XII.—Diseases of the Skin and Cellular Tissues						
151. Carbuncle, boil ...	7	157	4	164	2	
152. Cellulitis, acute abscess :—						
(1) Cellulitis ...	23	429	16	452	44	
(2) Acute abscess ...	52	943	9	995	31	
(3) Otherwise defined ..	8	84	0	92	7	
153. Other diseases of the skin and its annexa :—						
(1) Ulcers ...	122	1,706	8	1,828	134	
(2) Dermal mycoses ...	0	12	0	12	0	
(3) Herpes ...	3	46	0	49	2	
(4) Scabies ...	14	224	0	238	7	
(5) Others ...	36	725	1	761	34	
<i>Carried forward ...</i>	4,618	41,057	4,225	45,675	4,808	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—*continued*

DISEASES	Remaining in Hospitals at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward ...</i>	4,618	41,057	4,225	45,675	4,808	
XIII.—Diseases of the Bones and Organs of Locomotion						
154. Acute infective osteomyelitis and periostitis:—	6	88	5	94	14	
155. Other diseases of the bones ...	4	39	1	43	3	
156. Diseases of the joints and other organs of locomotion:—						
(1) Diseases of the joints ...	23	213	0	236	18	
(2) Diseases of the other organs of locomotion ...	5	169	0	174	4	
XIV.—Congenital Malformations						
157. Congenital malformations:—						
(1) Congenital hydrocephalus ...	0	5	2	5	1	
(2) Spina bifida and meningocele ...	0	3	1	3	0	
(3) Congenital malformation of the heart ...	0	7	0	7	1	
(4) Monstrosities ...	0	2	1	2	0	
(5) Congenital hypertrophic pyloric stenosis ...	...	...	...	...	...	
(6) Cleft palate, harelip ...	0	25	0	25	3	
(7) Imperforate anus ...	0	13	2	13	0	
(8) Other congenital malformations ...	4	12	3	16	1	
XV.—Diseases of early Infancy						
158. Congenital debility ...	2	23	12	25	1	
159. Premature birth ...	0	20	16	20	1	
160. Injury at birth ...	0	1	1	1	0	
161. Other diseases peculiar to early infancy:—						
(1) Atelectasis ...	0	1	1	1	0	
(2) Icterus neonatorum ...	0	12	6	12	0	
(3) Affections of the umbilicus ...	0	9	3	9	0	
(4) Pemphigus neonatorum ...	0	2	0	2	1	
(5) Others ...	0	17	5	17	0	
XVI.—Conditions Associated with Old Age						
162.—(1) Senile dementia ...	4	18	3	22	2	
(2) Other forms of senile decay ...	49	120	34	169	44	
XVII.—Affections Produced by External Causes						
163. Suicide, or attempted suicide, by poisoning ...	0	46	18	46	0	
(including corrosive poisoning)						
164. Suicide, or attempted suicide, by gas poisoning ...	...	...	...	...	...	
<i>Carried forward ...</i>	4,715	41,902	4,339	46,617	4,902	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—continued

DISEASES	Remaining in Hospitals at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward ...</i>	4,715	41,902	4,339	46,617	4,902	
XVII.—Affections Produced by External Causes—continued						
165. Suicide, or attempted suicide, by hanging or strangulation ...	0	5	3	5	0	
166. Suicide, or attempted suicide, by drowning ...	1	13	0	14	1	
167. Suicide, or attempted suicide, by firearms ...	0	1	1	1	0	
168. Suicide, or attempted suicide, by cutting or piercing instruments ...	1	19	3	20	1	
169. Suicide, or attempted suicide, by jumping from a height ...	...	...	...	...	...	
170. Suicide, or attempted suicide, by crushing ...	...	...	...	...	...	
171. Suicide, or attempted suicide, by other means ...	0	1	0	1	0	
172. Infanticide ...	...	...	...	...	...	
173. Assault or homicide, by firearms ...	0	8	2	8	0	
174. Assault or homicide, by cutting or piercing instruments ...	8	275	3	283	6	
175. Assault or homicide, by other means ...	23	1,209	4	1,232	37	
176. Attacks by venomous animals :—						
(1) Snake bite ...	0	17	0	17	0	
(2) Insect bite ...	0	20	0	20	0	
(3) Others ...	1	35	1	36	0	
177. Food poisoning ...	0	18	3	18	0	
178. Accidental absorption of ir- pirable or poisonous gas ...	0	4	2	4	0	
179. Other acute accidental poisoning ...	0	35	8	35	0	
180. Injuries due to conflagration ...	...	...	...	...	...	
181. Accidental burns :—						
(conflagration excepted)						
(1) Burns by fire ...	3	82	9	85	5	
(2) Scalds ...	5	185	5	190	11	
(3) Burns by corrosive sub- stances ...	1	10	0	11	0	
(4) Dermatitis due to expo- sure to sun ...	...	...	...	...	...	
(5) Dermatitis due to expo- sure to other forms of radiation ...	0	5	0	5	0	
182. Accidental mechanical suffoca- tion ...	...	...	...	...	...	
183. Accidental immersion or drown- ing ...	0	18	1	18	0	
184. Accidental injury by firearms ...	0	5	0	5	0	
185. Accidental injury by cutting or piercing instruments ...	6	296	0	302	6	
186. Accidental injury by fall, cru- shing, etc. :—						
(1) By fall ...	40	1,171	47	1,211	45	
(2) By machinery ...	7	100	1	107	7	
(3) By motor vehicles ...	57	535	33	592	34	
<i>Carried forward ...</i>	4,868	45,969	4,465	50,837	5,055	

TABLE V

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1933—*continued*

DISEASES	Remaining in Hospitals at end of 1932	YEARLY TOTAL		Total Cases Treated	Remaining in Hospital at end of 1933	REMARKS
		Admissions	Deaths			
<i>Brought forward ...</i>	4,868	45,969	4,465	50,837	5,055	
<i>XVII.—Affections Produced by External Causes—continued</i>						
(4) By railway vehicles ...	0	5	1	5	0	
(5) By other means ...	26	561	14	587	34	
187. Cataclysm :— (tidal waves cyclones, etc.)	0	2	1	2	0	
188. Injury by animals ... (except poisoning by venomous animals)	1	50	0	51	0	
189. Hunger or thirst ...	0	5	0	5	0	
190. Excessive cold ...	0	1	0	1	0	
191. Excessive heat ...	0	3	0	3	0	
192. Lightning ...	0	4	4	4	0	
193. Electricity ...	0	4	0	4	0	
194. Other unstated forms of violence (1) Inattention at birth ...	0	1	1	1	0	
(2) Others ...	0	189	1	189	5	
195. Violence of an unstated nature (i.e. suicidal, homicidal, or accidental)	0	2	0	2	0	
196. Wounds of war ...	...	...	...	...	...	
197. Execution of civilians by belligerent armies ...	...	...	...	...	...	
198. Execution ...	...	...	...	...	...	
<i>XVIII.—Ill-defined Conditions</i>						
199. Sudden death (cause unknown)	0	4	4	4	0	
200. Cause of death unstated or ill-defined ...	4	35	39	39	0	
201. Diseases not included in this classification which have caused no deaths ...	38	1,784	0	1,822	44	
202. Malingering ...	0	37	0	37	0	
203. Cases admitted to hospital for observation as to mental condition ...	5	253	0	258	13	
204. Cases admitted for observation (not mental)	8	202	0	210	2	
205. Persons accompanying patients	41	1,095	0	1,136	32	
Total ...	4,991	50,206	4,530	55,197	5,185	

LEONARD
1938

THE HISTORY OF THE CITY OF BOSTON, FROM THE FIRST SETTLEMENT TO THE PRESENT TIME.

By JOHN B. BOWEN, Esq. of the City of Boston.

Published by J. B. BOWEN, at the City of Boston.

1847.

1630	1631	1632	1633	1634	1635	1636	1637	1638	1639	1640	1641	1642	1643	1644	1645	1646	1647	1648	1649	1650	1651	1652	1653	1654	1655	1656	1657	1658	1659	1660	1661	1662	1663	1664	1665	1666	1667	1668	1669	1670	1671	1672	1673	1674	1675	1676	1677	1678	1679	1680	1681	1682	1683	1684	1685	1686	1687	1688	1689	1690	1691	1692	1693	1694	1695	1696	1697	1698	1699	1700	1701	1702	1703	1704	1705	1706	1707	1708	1709	1710	1711	1712	1713	1714	1715	1716	1717	1718	1719	1720	1721	1722	1723	1724	1725	1726	1727	1728	1729	1730	1731	1732	1733	1734	1735	1736	1737	1738	1739	1740	1741	1742	1743	1744	1745	1746	1747	1748	1749	1750	1751	1752	1753	1754	1755	1756	1757	1758	1759	1760	1761	1762	1763	1764	1765	1766	1767	1768	1769	1770	1771	1772	1773	1774	1775	1776	1777	1778	1779	1780	1781	1782	1783	1784	1785	1786	1787	1788	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1808	1809	1810	1811	1812	1813	1814	1815	1816	1817	1818	1819	1820	1821	1822	1823	1824	1825	1826	1827	1828	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845	1846	1847
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THE HISTORY OF THE CITY OF BOSTON, FROM THE FIRST SETTLEMENT TO THE PRESENT TIME.