Report of the Surgeon-General / British Guiana.

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British Guiana.

REPORT

OF THE

SURGEON-GENERAL,

FOR THE YEAR

1934.

Printed by the Authority of His Excellency the Governor.

GEORGETOWN, DEMERARA:

"THE ARGOSY" COMPANY, LIMITED, PRINTERS TO THE GOVERNMENT OF BRITISH GUIANA.

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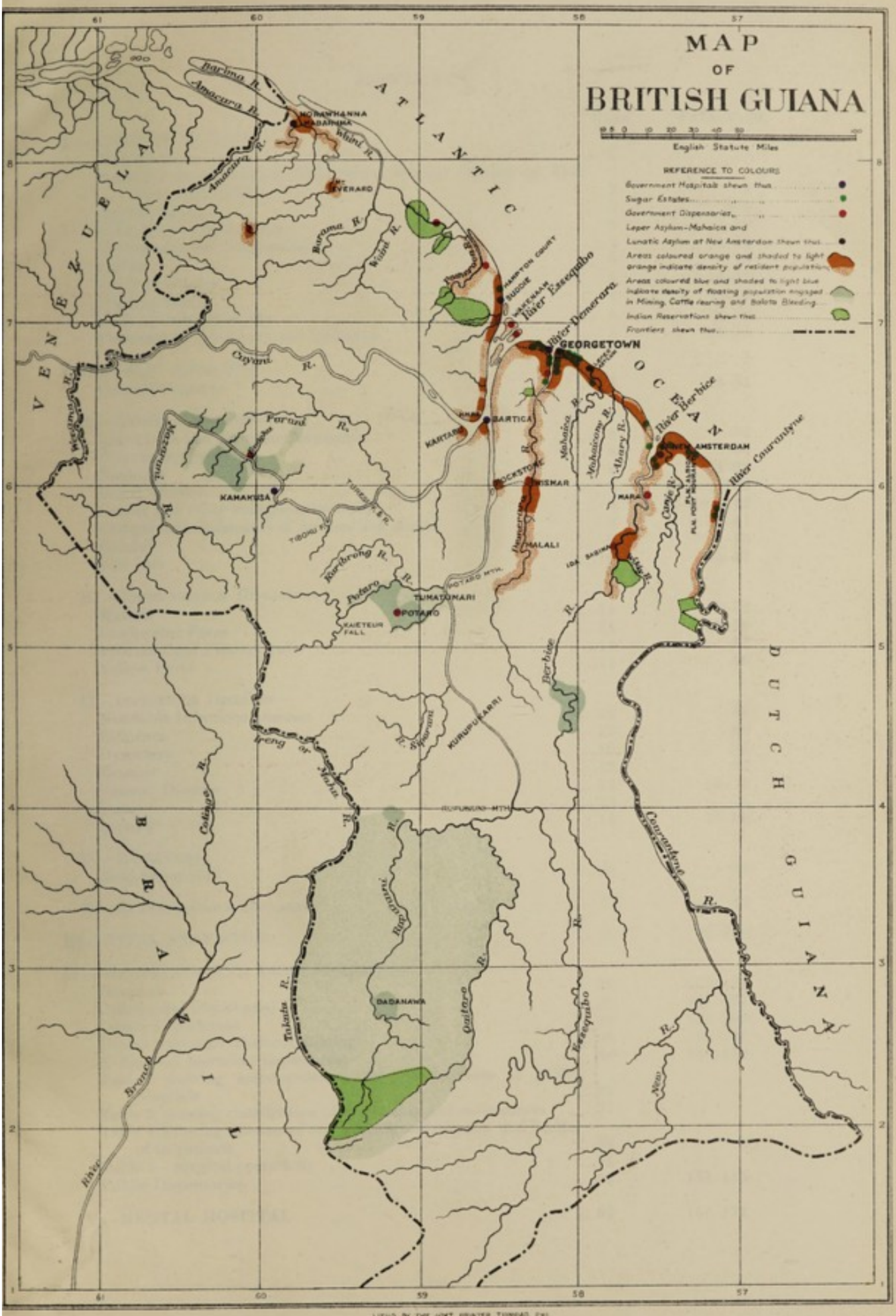

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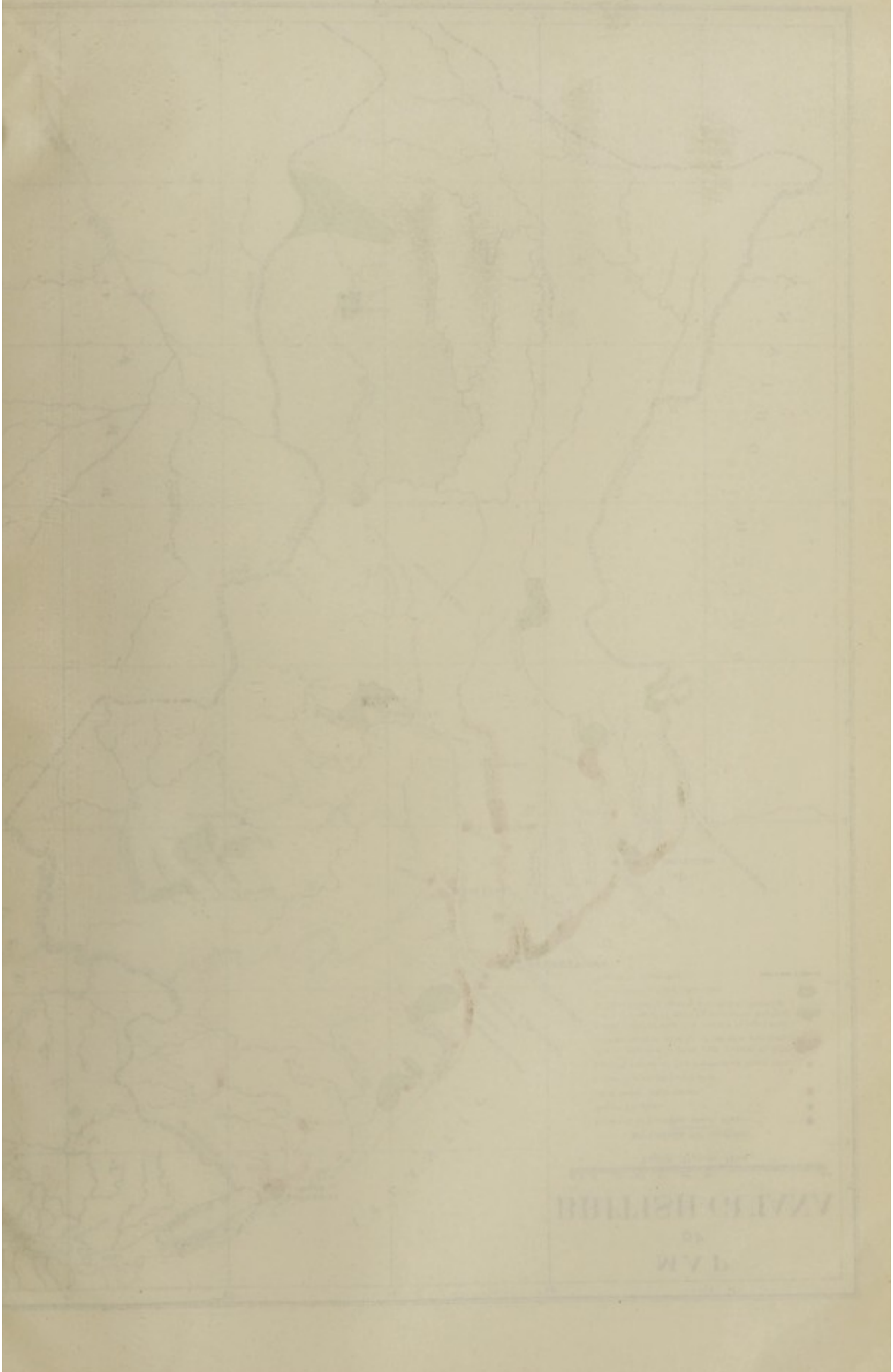

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SURGEON-GENERAL'S OFFICE,
GEORGETOWN, DEMERARA,
21st October, 1935.

SIR,

I have the honour to submit, for the information of His Excellency the Governor, the Legislative Council and for transmission to the Right Honourable the Secretary of State for the Colonies, the medical report on the health and sanitary conditions of British Guiana for the year 1934, together with the returns, etc., appended thereto.

I have the honour to be,

Sir,

Your obedient Servant,

J. A. HENDERSON,
Surgeon-General.

The Honourable
THE COLONIAL SECRETARY.

BRITISH GUIANA.

ANNUAL MEDICAL REPORT FOR THE YEAR ENDING 31ST DECEMBER, 1934.

I.—ADMINISTRATIVE.

1. The Medical Staff as authorised by the Estimates 1934 consists of :—

1 Surgeon-General.
1 Government Medical Officer of Health.
2 Assistant Government Medical Officers of Health.
1 Bacteriologist and Pathologist.
1 Surgeon Specialist and Resident Surgeon, Public Hospital, Georgetown.
1 Medical Superintendent, Leprosy Hospital.
1 Ophthalmologist.
27 Government Medical Officers.
1 Subsidised Medical Officer.

2. The distribution of the staff on the 31st December, 1934, is shewn in Table 1.

TABLE 1.

Distribution of Government Medical Officers on the 31st December, 1934.

(1) Surgeon General.	(2) Government Public Health Department.	(3) Government Bacteriologist and Pathologist.	(4) Special Medical Appointments.	(5) X-Ray and Electrical Treatment Department.	(6) Officers in charge of Medical Institutions.	(7) Name of Institution and position of Medical Officer.	(8) Medical Officers attached to Institutions.	(9) Officers in charge of Institutions and Districts.	(10) Officers in charge of Medical Districts.	(11) Names of Institutions and Districts.
Dr. J. A. Henderson.	(i) Government Medical Officer of Health and Port Health Officer, Georgetown—Dr. B. N. V. Wase-Bailey (1). (ii) Assistant Government Medical Officer of Health and Port Health Officer, New Amsterdam—Dr. J. H. Pottinger. (2) (iii) Assistant Government Medical Officer of Health and Deputy Port Health Officer, Georgetown—Dr. E. Cochrane	Dr. G. H. Steven.	(i) Surgeon Specialist and Resident Surgeon, Public Hospital, Georgetown—Mr. J. D. Grierson, F.R.C.S. (ii) Medical Superintendent, Leprosy Hospital—Dr. F. G. Rose, M.D., M.B.E. (iii) Ophthalmologist—Dr. J. A. Browne. (iv) Prison Surgeon, & Medical Officer No. 1 Dispensary and Alms House, Georgetown—Dr. D. J. Taitt.	Honorary Radiologist—Dr. F. G. Rose, M.D., M.B.E.	(i) Dr. J. Glavina (ii) Dr. C. E. S. Mitchell.	Resident Surgeon, Public Hospital, New Amsterdam Berbice. Medical Superintendent, Mental Hospital.	(i) Dr. G. A. Grandsoult. (ii) Dr. O. M. Francis (iii) Dr. E. G. H. Payne. (3) (iv) Dr. S. C. Bettencourt-Gomes. (4) (v) Dr. G. W. Mearns (5) (vi) Dr. W. D. Pollard. (vii) Dr. W. W. Besson. (viii) Dr. S. T. M. Sang. (6) (ix) Dr. V. V. H. Hoakai. (x) Dr. C. Ramdeholl. (xi) Dr. N. J. Abbensetts. (xii) Dr. A. W. Dunn (7)	(i) Dr. G. M. Kerry (ii) Vacant. (iii) Dr. A. T. D. Whitfield.	(i) Dr. Q. B. de Freitas. (ii) Dr. G. E. Carter (iii) Dr. J. E. R. Ramdeholl. (iv) Dr. L. R. Sharples. (v) Dr. R. N. Cozier (vi) Dr. J. Nedd ... (vii) Dr. G. T. G. Boyce. (viii) Dr. E. W. Reece (ix) Dr. C. R. Subryan. (x) Dr. F. A. Viapree (subsidised Medical Officer).	Resident Surgeon, Public Hospital, Suddie, Medical Officer, Suddie District and Onderneeming Industrial School. (Acting). Resident Surgeon, Public Hospital, Bartica and Medical Officer, Bartica District. (8) Resident Surgeon, Public Hospital, Mabaruma, and Medical Officer, North Western District. Peter's Hall. Canje-Highbury Buxton. Port Mourant. West Coast, Demerara. West Bank, Demerara. Mahaica. Cotton Tree. Skeldon. Mahaicony.

(1) Is also Surgeon-General's Deputy.
(2) Is also Honorary Medical Officer of Health for the town of New Amsterdam.
(3) Medical Officer in charge of Venereal Diseases Clinic, Public Hospital, Georgetown.
(4) Senior Physician, Public Hospital, Georgetown.
(5) Senior Surgeon, Public Hospital, Georgetown.
(6) Is also Visiting Medical Officer, Anna Regina, Pomeroon, and Wakenaam Dispensaries.
(7) Seconded for duty with the British Guiana-Brazil Boundary Commission.
(8) Dr. J. A. Nicholson, Temporary Medical Officer, performed the duties as from 2.12.34.

Appointments.

3. Dr. A. T. D. Whitfield was appointed Government Medical Officer as from 8th March, 1934. He arrived in the Colony and assumed duty on the 18th March, 1934. Dr. Whitfield was transferred from the Bahamas Medical Service where he served as from 13th April, 1933.

4. During the absence on leave of Dr. B. N. V. Wase-Bailey, Dr. J. H. Pottinger, Assistant Government Medical Officer of Health, Berbice, acted as Government Medical Officer of Health and Port Health Officer, Georgetown, as from 18th May, 1934.

5. Dr. Pottinger, having been appointed Officer in charge of the Advance Party in connection with the proposed Assyrian Settlement, Rupununi, left Georgetown on 18th October, 1934, and was absent from headquarters until the close of the year. During this period Dr. E. Cochrane acted as Government Medical Officer of Health.

6. Mr. G. F. Steele was promoted to be a First Class Dispenser on 19th December, 1934, *vice* Mr. A. H. Williams, retired.

Temporary Appointments.

7. Dr. J. A. Nicholson and Dr. L. S. Jaikaran acted as Medical Officers throughout the year.

8. Dr. M. O. Luck and Dr. A. B. Foo served as temporary Medical Officers, the former from 1st to 16th April, 1934, and again from 8th May to 17th November, 1934, and the latter from 3rd November, 1934, to the end of the year.

9. Dr. C. F. Roza, Dr. C. N. De Souza and Dr. J. Bisessar assisted the department for short periods during the year.

10. The services of Dr. L. H. Wharton, temporary Medical Officer, were terminated on 31st March, 1934.

Retirements and Resignations.

11. Dr. J. E. Chow, Government Medical Officer, retired on pension on account of ill-health on 31st July, 1934.

12. Mr. A. H. Williams, 1st class Dispenser, retired on pension on 18th December, 1934.

Deaths.

13. There were no deaths during the year.

Leave of Absence.

14. The following officers were on vacation leave of absence out of the Colony during the year :—

Dr. V. V. H. Hoakai, Government Medical Officer, from 1st January to 31st December; Dr. J. A. Browne, Ophthalmologist, from 1st January to 14th March; Dr. L. R. Sharples, Government Medical Officer, from 16th March to 11th September; Dr. J. Glavina, Resident Surgeon, Public Hospital, Berbice, from 17th March to 13th September; Dr. Q. B. de Freitas, Government Medical Officer, from 21st March to 20th September; Dr. G. H. Steven, Government Bacteriologist, from 26th April to 25th September; Mr. J. D. Grierson, Surgeon Specialist and Resident Surgeon, Public Hospital, Georgetown, from 8th June to 5th October; Dr. F. G. Rose, Medical Superintendent, Leprosy Hospital, from 8th June to 16th October; Dr. B. N. V. Wase-Bailey, Government Medical Officer of Health, from 8th June to 31st December; Dr. O. M. Francis, Government Medical Officer, from 17th

August to 31st December; Dr. A. W. Dunn, Medical Officer, British Guiana-Brazil Boundary Commission, from 20th to 31st December; Mr. E. Dalton, Government Radiographer, from 4th April to 24th September; Miss N. M. C. Horrocks, Superintendent of Nurses, Public Hospital, Berbice, from 1st to 31st December; Miss M. G. Morris, Divisional Sister, Public Hospital, Georgetown, from 1st to 31st December.

15. The following Officers were on vacation leave of absence in the Colony during 1934:—

Dr. J. E. Chow, Government Medical Officer, from 1st January to 31st July; Mr. S. Sandiford, Class II. Clerk, Surgeon-General's Office, from 1st January to 11th February; Mr. J. Rohee, Class III. Clerk, Public Hospital, Georgetown, from 1st January to 28th February; Mr. O. E. Elcock, 1st Class Dispenser, Mental Hospital, from 1st January to 31st March; Mr. C. S. Murray, 1st Class Dispenser, Public Hospital, Berbice, from 1st June to 31st August; Mr. A. H. Williams, 1st Class Dispenser, Supenaam District, from 19th June to 18th December; Mr. E. B. Khan, Class III. Clerk, Public Hospital, Georgetown, from 1st July to 30th September; Mr. S. A. King, Steward, Public Hospital, Suddie, from 23rd to 28th September; Mr. R. L. Morgan, Probationer, Bacteriological Department, from 15th October to 31st December.

Nursing Staff.

16. Five European Nurses are attached to hospitals as under:—

(*a*) Public Hospital, Georgetown—

Superintendent of Nurses—Miss Isabella C. Ferguson.
Divisional Sisters—Miss M. G. Morris, Miss M. Sharp and Miss H. Prescott,

(*b*) Public Hospital, New Amsterdam—

Superintendent of Nurses—Miss N. M. C. Horrocks.

17. Miss N. M. C. Horrocks and Miss M. G. Morris were granted four months leave as from 1st December, 1934, on the termination of their three-year agreement and returned to England.

Ordinances, Regulations, Etc.

18. The following Ordinance was passed during the year:—

Ordinance No. 15 of 1934. To make provision for promoting the Public Health of the Colony.

This law repealed the sanitary clauses contained in the Local Government Ordinance (Cap. 84) and incorporated several minor ordinances dealing directly or indirectly with public health, and provided also for the establishment of a Central Board of Health, which is responsible for the control of Health and Sanitation throughout the Colony.

19. The following Order in Council and Proclamation were also issued during the year:—

(*a*) Order in Council varying the provisions of sub-paragraph (3) of paragraph 2 of Schedule VI to the Hospital Fees Regulations, 1932, in regard to the maintenance charge in hospitals of police, senior and junior officers, non-commissioned officers and constables, and their wives and families.

(*b*) Proclamation dated 6th October, 1934, bringing into force the Public Health Ordinance, 1934, on 1st November, 1934.

Financial.

20. The following is a comparative statement of revenue and expenditure for the years 1932, 1933 and 1934 :—

(*a*) *Revenue—Medical Department.*

1932.	1933.	1934.
$48,588.57 (includes $2,400 for rent of Quarters occupied by Medical Officers).	$43,088.08 (includes $2,219.50 for rent of Quarters occupied by Medical Officers).	$36,321.31 (includes $1,881 for rent of Quarters occupied by Medical Officers).

(*b*) *Expenditure—Medical Department including Public Health Department.*

1932.	1935.	1934.
$546,690.	$554,625.51	$567,732.40.

21. The percentage of actual expenditure on Medical and Public Health Services to actual revenue of the Colony was :—

1932.	1933.	1934.
11.2%	10.8%	11.1%

II.—Public Health.

GENERAL REMARKS.

22. Having regard to the time and significance of its occurrence reference must be made early in this report to th e unfortunate effects of the Flood which visited this colony early in 1934. The Flood Relief Report, already submitted, gives full and categorical details of the measures adopted by the Medical department to cope with and ameliorate the suffering and distress that followed in the wake of the Flood. It seems, therefore, unnecessary here to do more than refer to that report and to specify briefly the special remedial measures then taken by this department. These measures included the provision of temporary housing and feeding in necessitous cases, also of milk at the Maternity and Child Welfare centres, distribution of supplies of medicines required for the treatment of diseases incurred, or increased, through the Flood, preparing necesssary accommodation at the Georgetown hospital to meet an influx of maternity cases from the surrounding districts, arrangements for emergency hospitals and engaging additional nurses, printing and distributing pamphlets indicating steps to be taken to prevent contamination of water supplies, the selection of suitable emergency sites for burial of the dead, as cemeteries had become flooded, effecting necessary sanitary arrangements for temporary buildings, and collection and disposal of carcases.

The amount spent by this department for medical relief and public health measures was $1,636, excluding the extra cost incurred by hospitals throughout the colony, and particularly on the part of the public hospital, Georgetown, on account of the increase in admissions of persons suffering in direct consequence of the floods.

It is worthy of note that no special and important outbreaks of any disease occurred during the aftermath, and it is satisfactory to record that water-borne and other epidemics, which so frequently are the sequelae of floods, did not take place.

When, however, it is recalled that the prevailing domestic water supply of country districts generally is that obtained from the open fresh water trench, separated only by road or dam from the main drainage trench, it will be realised how general contamination of these supplies must have been. Nor is it surprising that the morbidity and mortality rates of intestinal complaints were higher in 1934 than during the previous five years. Moreover, as a result of exposure and damp-

ness, also lowering of the people's resistance in consequence of general economic loss, there can be little doubt that the incidence of and deaths from pneumonia and bronchitis, malaria, kidney diseases and diseases of early infancy were higher than they would have been had not these factors prevailed.

23. The general death rate, 24.7 per 1,000, and the infant mortality rate, 168 per 1,000 births, were raised accordingly.

24. An outbreak of Beri beri among the personnel of the British Guiana-Brazil Boundary Commission is described in section II. A. of this report.

25. A New Public Health Ordinance (No. 15 of 1934) was passed in May and proclaimed law in November. This law repealed the sanitary clauses contained in the Local Government Ordinance, Chapter 84, and incorporated several minor Ordinances dealing directly and indirectly with Public Health, while providing also for the establishment of a Central Board of Health responsible for the control of health and sanitation throughout the Colony. The Government Public Health Department, acting as the Executive of the Central Board, supervises the sanitary activities in village, country and rural areas.

26. In August 1933 His Excellency the Governor appointed a committee to consider certain matters relating to housing conditions in Georgetown and steps which might be taken with regard thereto and the relief of unemployment within the town which could be effected in the clearing of housing areas. This Report was submitted to Government in October, 1934, and the recommendations can be summarised thus :—

(*a*) That a plan of a model cottage be prepared by the City Engineer on the lines of those erected in St. Lucia giving all necessary details in addition to which provision should be made in the Building By-Laws making it an offence for anyone to erect tenement ranges or convert two or three storeyed buildings into tenements.

(*b*) That the standard by which overcrowding in houses should in future be determined be limited to a floor space of an area of not less than 45 square feet for each adult.

(*c*) That with regard to the question of congestion and that of ramshackle buildings unfit for human habitation steps should be taken to enable proprietors to repair their buildings, thus remedying conditions to a certain extent for the time being, and to enable the Council to order the demolition of buildings considered unfit for human habitation. (After a Town Planning Survey is carried out, complete remedial measures could be effected).

(*d*) That a Housing Trust be created with the object of providing better housing accommodation than at present exists for the working classes with statutory powers to manage its own affairs.

(*e*) That the Trust be financed by the Government with a sum of not less than $48,000 (£10,000) from the Imperial Unemployment Grant or in the absence of such a Grant, Government approach the Secretary of State for the Colonies with the object of obtaining the required sum of money for the use of the Trust.

(*f*) That legislation be introduced to provide for the levying by Government of "Housing Dues" and that the money derived therefrom be ear-marked for the use of the Trust.

(*g*) That the activities of the Trust should include the lending of long term loans at a low rate of interest to property owners for the purpose of improving their properties.

(*h*) That the Trust be vested with power to collect the rents of all properties under its control and administer the funds, in connection with which an annual account should be rendered to the Government.

(*i*) That the Trust should endeavour to educate tenants as to their responsibility as such, on the "Octavia Hill" system.

27. Dr. R. G. Cochrane, Medical Secretary, the British Empire Leprosy Relief Association, visited this Colony in October. During his stay of twelve days he visited the Leprosy Hospital at Mahaica, the out-patient clinic at Lodge Village, certain schools in and around Georgetown and the Alms House. He also examined the position in regard to Lancaster Village and the Lady Denham Home. His report was received in February, 1935, and the various recommendations contained therein are receiving the attention of Government and this department.

28. For some time past the need for re-organisation of the Medical and Sanitary Department has been recognised. In September the question was raised in the Legislative Council, and a motion was passed to the effect that the Officer administering the Government should appoint a committee to enquire into the administration and general organisation of the Medical Service of the Colony, and to advise as to what steps should be taken to improve it. The Honourable the Colonial Secretary was appointed Chairman of this Committee which began its deliberations in October.

29. In April the Colony had the pleasure of a visit from Dr. P. James Kelly, a former Surgeon General. Dr. Kelly was visiting officially certain of the neighbouring colonies in connection with their Medical Services, and His Excellency the Governor took the opportunity of inviting him to advise regarding recommendations which had been submitted to Government by this Department to the effect that assistance should be sought from the Colonial Development Fund to provide (*a*) a Tuberculosis Hospital, (*b*) a new Venereal Diseases Clinic, (*c*) a proper Public Health Department and (*d*) an adequate Bacteriology Department. Dr. Kelly was in full agreement with these recommendations, and strongly supported their adoption.

30. At the end of the year the Colony was fortunate in securing from the Colonial Development Fund a grant of £15,330 for the construction of a Tuberculosis Hospital, and a further grant of £3,125 for a new Venereal Diseases Clinic. These new buildings will materially help forward the treatment and control of diseases which are important in British Guiana.

31. Dr. A. M. Walcott of the International Health Division of the Rockefeller Foundation, New York, visited the Colony at the end of August in connection with the protection test surveys for Yellow Fever. In co-operation with officers of the Medical department he collected 188 specimens of blood from persons born and raised in British Guiana since 1909 when the last report of cases that may have been Yellow Fever was presented.

Dr. Fred L. Soper has recently reported that the results were negative in all except 4 cases and that it would appear therefrom that Yellow Fever has not recently been endemic nor epidemic in the more densely populated parts of this Colony. The Government and Medical department of British Guiana greatly appreciate the kind co-operation of the Rockefeller Foundation in carrying out these important investigations.

A.—General Diseases.

32. *Pneumonia and Broncho-Pneumonia.*—228 cases were treated in public hospitals, with 149 deaths, compared with 285 cases and 170 deaths in 1933. The total number of deaths registered in the whole Colony was 556 compared with 712 in the previous year.

33. *Circulatory System.*—403 cases of all forms of heart disease were treated in public hospitals, with 145 deaths, compared with 349 cases and 135 deaths in 1933. These figures do not include diseases of the arterial, venous and lymphatic systems.

34. *Nephritis.*—538 cases of nephritis were treated in public hospitals with 159 deaths compared with 459 and 150 respectively in 1933. The total number of deaths from nephritis registered in the whole Colony was 573 compared with 517 in the previous year.

35. The following Table shows the number of inpatients with acute and chronic nephritis, together with deaths and case mortality, in public hospitals of the Colony for the last ten years :—

	Cases.	Deaths.	Case Mortality.
1925	976	214	21·9%
1926	763	199	24·9%
1927	794	206	25·9%
1928	495	161	32·5%
1929	484	143	29·5%
1930	449	111	24·7%
1931	473	124	26·2%
1932	486	135	27·7%
1933	459	150	32·7%
1934	538	159	29·5%

36. *Bowel Diseases (Enteritis, Colitis, Diarrhoea, etc., excluding Enteric Fever and the Dysenteries).*—This group accounted for 460 cases and 150 deaths, while the deaths throughout the colony registered as due to these causes were 595. These figures show a definite increase compared with the corresponding data in 1933.

37. *Cancer and other Malignant Tumours.*—Malignant disease was responsible for 112 cases and 48 deaths in the public general hospitals, compared with 97 cases and 33 deaths in 1933.

38. The total number of deaths from Cancer in the Colony during 1934 is given by the Registrar-General as 113. In 1933 the corresponding figure was 86.

39. The following Table furnishes a comparative statement of diseases treated with deaths in Government Hospitals during the years 1930, 1931, 1932, 1933 and 1934 :—

	1930.		1931.		1932.		1933.		1934.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Malaria	2,224	129	1,847	112	2,569	137	2,509	167	2,364	154
Blackwater Fever	12	4	7	3	16	6	9	2	10	3
Dysentery	203	19	173	21	105	8	135	20	183	32
Enteric Fever	124	29	94	23	82	24	96	30	136	41
Diarrhœa and Enteritis and Colitis ...	289	67	287	63	307	67	359	80	469	150
Filariasis (and Filarial Bubo) ...	243	7	226	9	224	12	271	19	244	13
Heart Disease (all forms) ...	430	165	437	167	299	127	249	135	403	145
Nephritis (including Uræmia) ...	400	99	473	124	486	135	459	150	538	159
Pneumonia (including Broncho & Lobar)	278	134	264	131	187	100	285	170	228	149
Bronchitis	805	71	867	76	716	88	706	103	792	118
Tuberculosis (including Phthisis) ...	383	143	433	164	550	170	538	165	456	135
Influenza...	79	3	235	14	38	...	348	15	10	...

40. The deaths registered as due to the same diseases throughout the Colony for the same periods are as follows :—

	1930.	1931.	1932.	1933.	1934.
*Malarial and undefined Fevers	1,104	834	1,034	1,140	1,203
Blackwater Fever...	12	12	8	6	13
Dysentery	105	128	68	118	235
Enteric Fever	53	52	46	68	85
Enteritis (including Diarrhœa)	380	397	332	456	595
Filariasis (including Filarial Bubo)	37	43	52	73	38
Heart Disease (all forms)	359	383	336	359	342
Nephritis (including Uraemia)	528	487	491	517	573
Pneumonia (including Broncho and Lobar)	588	563	508	712	556
Bronchitis	356	379	323	415	448
Tuberculosis (including Phthisis)	302	287	320	289	253
Influenza	94	185	91	334	75

*It is regrettable that it is not possible to differentiate between Malarial and Non-Malarial fevers, as in the tables in use departmentally they are all included under one Head.
Efforts will be made in future reports to overcome this objection.

41. The diseases responsible for the highest number of deaths for the whole Colony during the years 1930, 1931, 1932, 1933 and 1934, arranged in quarterly periods, are shown in the following table :—

Diseases.	March Quarter.					June Quarter.					Sept. Quarter.					Decr. Quarter.					Total.				
	1930	1931	1932	1933	1934	1930	1931	1932	1933	1934	1930	1931	1932	1933	1934	1930	1931	1932	1933	1934	1930	1931	1932	1933	1934
*Malarial and undefined Fevers	307	218	224	232	421	232	148	191	226	257	278	233	281	309	223	287	215	338	373	300	1,104	834	1,034	1,140	1,203
Pneumonia and Bronchitis ...	319	317	208	380	415	205	141	193	246	219	233	210	200	251	201	187	274	260	250	169	944	942	861	1,127	1,004
Kidney Diseases ...	139	137	114	157	186	126	111	125	111	137	138	124	127	117	120	132	119	135	143	142	535	491	501	528	585
Diseases of early Infancy (including Premature Birth, Infantile Debility, etc.) ...	196	169	157	220	302	109	111	101	118	143	144	110	154	170	106	207	180	229	203	165	656	570	641	711	716
Bowel complaints (including Dysentery, Diarrhœa, Enteritis, etc.) ...	203	189	108	179	309	121	122	92	132	261	89	118	103	135	120	137	165	155	200	134	550	594	458	646	914
Phthisis and other forms of Tuberculosis ...	77	71	83	104	68	64	72	81	58	75	81	78	80	70	48	80	66	76	57	62	302	287	320	289	253
Diseases of the Circulatory System ...	93	116	96	99	128	98	86	88	106	118	94	113	95	99	84	113	106	117	133	95	398	421	396	437	425
Diseases of the Nervous and Sense Organs ...	103	108	90	98	123	109	109	90	101	107	107	94	122	78	85	97	96	86	109	97	416	407	388	386	412

* Vide footnote to preceding table.

42. The following Table gives the different forms of malignant growths recorded in Public General Hospitals together with the racial incidence in each :—

	Carcinoma.		Sarcoma.		Epithelioma.		Rodent Ulcer.		Endothelioma.		Unclassified.		Total.	
	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934
European (other than Portuguese)	3	1	...	...	1	...	...	...	...	...	...	...	4	1
European (Portuguese) ...	7	5	...	...	1	...	...	1	...	...	...	...	8	6
East Indian	22	22	...	3	1	...	...	...	...	...	...	...	23	25
African	45	63	3	2	2	2	...	...	...	...	...	...	50	67
Mixed	9	8	...	2	2	2	...	...	...	...	...	1	11	13
Chinese	1	...	...	...	...	...	...	...	...	...	...	...	1	...
	87	99	3	7	7	4	...	1	...	...	...	1	97	112

43. The Director of Agriculture has kindly supplied the following information regarding the quarterly rainfall at the Botanic Gardens, Georgetown :—

	1930.	1931.	1932.	1933.	1934.
1st Quarter ...	13·04	6·30	16·14	18·	33·90
2nd Quarter ...	35·16	24·23	41·67	32·50	14·83
3rd Quarter ...	26·23	23·29	13·96	24·43	15·31
4th Quarter ...	10·44	15·44	18·74	41·62	17·00
Total ...	84·87	69·26	90·51	116·55	81·04

44. *Outbreak of Beri-beri among the officers and men of the British Guiana branch of the Boundary Commission.*—The first case occurred at the end of May 1934. The patient had been at Onoro for three months. The cause was attributed to a deficiency in the rice, one of the staple articles of diet, which had become artificially milled and polished in the course of transport to the interior. As expected, three more cases occurred within two months. All cases improved under treatment, which included yeast manufactured on the spot, and in due course they were sent to Georgetown. A new supply of rice arrived. There was an interval of two months and no new case. At the end of September, however, five more cases occurred, two being officers and three men. Of these cases one officer died, and the remainder were sent safely to Georgetown. During October two officers showed signs of the disease, while two men, one of whom died, were reported to be suspected Beri-beri. At that time the disposition of the personnel was such that distance prevented the medical officer seeing four of the cases referred to above. Towards the end of October it was decided to evacuate all personnel on account of the seriousness of the outbreak, the incidence of which had become seven cases, six cases of suspected Beri-beri and two deaths.

45. The medical officer to the Boundary Commission reported that all three types were met with—neuritic, oedemic and the acute as specially affecting the heart. The symptoms exhibited agreed in most respects with the usual text book descriptions. The medical officer observed that in every case seen by him there was a rise in temperature of a moderate degree (99-100°) before the onset of oedema aind nerve lesions, and a transient phase of polyuria before the occurrence of oliguria. In every case seen by the medical officer, peripheral neuritis, oedema and cardiac involvment prevailed, the type being indicated by the most predominant factor. With early diagnosis, removal from the neighbourhood where the condition developed, and dietary re-adjustment, the prognosis, as far as life was concerned, was good, except in the acute type which is usually fatal. As regards nerve lesions these were somewhat slow in recovering : in this connection arsenic was found of value. When the heart is dilated and signs of heart failure present themselves amyl nitrite inhalation with subsequent administration of nitro glycerin was found to tide over the crisis. Generally speaking, officers and men who had been suffering from Beri-beri, or suspected Beri-beri, in the interior made satisfactory progress towards recovery under advice and treatment within a comparatively short time after return to their homes.

46. Arrangements were made whereby in the process of evacuation all personnel of the Commission were examined by the the Government medical officer on arrival at Springlands. Those found to be suffering, or to have suffered, from Beri-beri or suspected Beri-beri were referred for hospital or dispensary treatment according to their physical condition. The total number of persons who passsd through Springlands was 115. In all, there were twenty cases, and thirteen cases of suspected Beri-beri among the members of the British Guiana-Brazil Boundary Commission with three deaths.

47. Having regard to the circumstances under which Beri-beri broke out, recommendations were submitted to Government for the guidance of the British Guiana-Brazil Boundary Commission when it resumes work in the field. Officers and men should not remain in the field for prolonged periods. During the field season they should spend sufficient time at the base camp for general medical and recuperative purposes. The various field parties should be kept within a reasonable distance of each other. Should it be necessary to spread them over an area which cannot be controlled by one medical officer, then additional medical staff will be required. Particular attention should be paid to the regular supply of provisions and adequate dietary. The importance of close co-operation between the medical officer and executive officers of the Commission and of prompt effective action upon the medical officer's recommendations in regard to all medical and health matters was strongly emphasized.

B.—Communicable Diseases.

MOSQUITO OR INSECT-BORNE.

48. *Malaria.*—There was no unusual incidence of Malaria during the year. 2,364 cases were admitted as in-patients to the Public Hospitals, and 19,308 cases were treated at out-patient departments of Government hospitals and dispensaries. In addition many cases received treatment at the hospitals and dispensaries of Sugar Plantations.

49. The mortality among the hospital admissions—157 including deaths from Blackwater Fever—was about the average for the last ten years.

50. Below is given a Table showing the total number of in-patients treated in public hospitals, the number of cases of malaria and deaths together with the case mortality, and the annual rainfall as taken at the Botanic Gardens (Georgetown) for the ten years 1925-1934 :—

Year.	Total In-Patients.	Cases Malaria including Blackwater Fever.	Deaths Malaria including Blackwater Fever.	Case Mortality.	Rainfall (Inches).
1925	19,025	1,914	77	4.0%	63.25
1926	18,481	1,308	107	8.2%	80.32
1927	20,671	3,188	184	5.8%	118.63
1928	20,126	2,607	156	6.0%	96.48
1929	19,577	2,304	167	7.2%	71.62
1930	19,657	2,236	133	5.9%	84.87
1931	18,276	1,854	115	6.2%	69.26
1932	19,015	2,525	143	5.7%	90.51
1933	19,754	2,518	169	6.7%	116.55
1934	19,935	2,374	157	6.6%	81.94

51. The total amount of quinine issued to Government hospitals, dispensaries, mission stations and schools during the year was 564¾ pounds at a cost of $4,491.07.

52. The same anti-malarial measures were continued throughout the colony in 1934, details of which are given in Section XII.

53. *Blackwater Fever.*—13 deaths were registered in the whole Colony as due to this disease as compared with 6 in the previous year. In public hospitals 10 cases were treated with 3 deaths.

54. Research carried out in this Colony on the epidemiology of Blackwater Fever (see Giglioli, Surgeon-General's Report, 1931) has thrown a considerable amount of light on a difficult and abstruse problem.

55. It is to be noted that the number of deaths (13) was low in proportion to the deaths from Malaria (1,203). They were distributed as regards age and race as follows :—

1 to 5 years.	East Indians 2.
5 to 15 years.	East Indians 1, Black 1, Mixed 1.
15 to 45 years.	Europeans (other than Portuguese) 2. East Indians 2. Mixed 1.
45 to 80 years.	East Indians 3.

56. In the County of Demerara 10 deaths occurred and in the County of Essequebo 3. In order to assess accurately the numerous factors which may influence the incidence of Blackwater Fever it is essential to carry out investigations in a district with a permanently fixed population, where race, age, length of stay, housing accommodation, etc., may be exactly valued. Especially is this necessary in view of the importance of house and family Blackwater Fever.

57. *Filariasis and Filarial Bubo.*—The deaths registered in the whole Colony as due to this disease were 38. The average number of deaths for the ten years 1924-1933 was 51 per annum. 244 cases were treated in public hospitals with 13 deaths compared with 271 cases, with 19 deaths, in 1933.

58. *Yellow Fever.*—As for many years past, no cases occurred.

C.—Infectious Diseases.

59. A report on notifiable infectious diseases is given in Section XII.

60. *Influenza.*—10 cases were treated in public hospitals with no deaths. The deaths registered as due to the same disease throughout the Colony were 75.

61. *Dysentery, including amoebic, bacillary and other forms.*—The deaths registered in the Colony numbered 235 giving a death rate of 0.72 per thousand compared with 0.47, the average rate per annum during the previous ten years. 183 cases were treated in public hospitals, with 32 deaths, compared with 135 cases and 20 deaths in 1933.

62. *Tetanus.*—32 cases were treated in public hospitals, with 8 deaths, compared with 20 cases, and 13 deaths in 1933.

63. *Venereal Diseases.*—The following Table gives the number of cases of venereal diseases treated as in-patients in public hospitals for the last ten years :—

	Syphilis.					Soft Chancre.	Gonorrhœa and its Complications.	Granuloma Venereum.
	Primary.	Secondary.	Tertiary.	Hereditary.	Stage not Indicated.			
1925 ...	112	16	296	33	*	27	336	*
1926 ...	128	93	361	22	*	51	224	*
1927 ...	246	16	597	39	...	6	195	123
1928 ...	157	38	418	88	1	170	372	145
1929 ...	228	31	352	67	9	120	616	130
1930 ...	271	44	471	37	31	38	626	111
1931 ...	214	121	782	123	68	12	526	57
1932 ...	75	46	651	89	12	38	647	71
1933 ...	159	51	604	107	7	60	645	63
1934 ...	96	36	664	62	3	46	696	88

NOTES:—*Included in other figures in case of Syphilis. Not specially mentioned in case of Granuloma Venereum, and classed under other general headings not listed.

64. The number of Novarsenobillon and other injections given for Syphilis at the public hospitals was 22,368 compared with 23,785 in 1933.

65. The Colony was fortunate in securing at the end of the year a grant of £3,125 from the Colonial Development Fund for the construction of a new Venereal Diseases Clinic. This will replace the old premises which had become unsuitable for the functions of this department of the Public Hospital, Georgetown.

66. In the report of the officer in charge of this section, extracts of which are quoted later on, emphasis is placed upon the necessity for increase of medical and nursing staff. There is no doubt that for the proper control of Veneral Diseases a whole-time officer, an assistant medical officer and adequate nursing staff are necessary.

67. The Tables below furnish statements, classified in age-incidence periods, of in-patients treated for Venereal Diseases in public hospitals, prisons and the Alms House during the year 1934 :—

(i)—PUBLIC HOSPITALS.*

Age.	Syphilis.									Gonorrhœa and its complications.			Chancroid.			Granuloma Venereum and Pudendi.		
	Primary.			Secondary.			Tertiary or Chronic.†											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Under 1 year ...	...	...	...	..	...	...	14	4	18	9	6	15	...	...	...	...	...	...
1 to under 5 ...	...	...	...	...	...	...	4	3	7	1	7	8	...	...	...	...	...	...
5 ,, 10 ...	...	...	...	...	..	...	3	5	8	6	5	11	...	...	...	...	...	...
10 ,, 20 ...	10	9	19	4	1	5	31	41	75	43	38	81	10	5	15	4	6	10
20 ,, 30 ...	40	5	45	15	3	18	123	94	217	232	64	296	16	...	16	12	15	27
30 ,, 40 ...	21	...	21	4	7	11	116	70	186	167	12	179	12	...	12	9	9	18
40 ,, 60 ...	11	...	11	3	...	3	122	64	186	120	7	127	1	...	1	14	8	22
60 years and over...	...	...	...	...	...	...	29	17	46	31	1	32	...	...	...	3	1	4
Total ...	82	14	96	26	11	37	445	298	743	609	140	749	39	5	44	42	39	81

* NOTE.—The totals in this Table differ from those in the Table above in that cases of double infection are here included.
† Includes "Hereditary" and "Stage not indicated."

(ii)—GEORGETOWN AND NEW AMSTERDAM PRISONS AND ALMS HOUSE.

Age.	Syphilis.									Gonorrhœa and its Complications.			Chancroid.			Granuloma Venereum and Pudendi.		
	Primary.			Secondary.			Tertiary or Chronic.*											
	M.	F.	T.	M.	F	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Under 1 year ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1 to under 5 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5 ,, 10 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10 ,, 20 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20 ,, 30 ...	1	...	1	...	...	...	...	...	...	2	...	2	1	...	1	3	7	10
30 ,, 40 ...	...	...	...	...	...	...	...	5	5	7	...	7	1	...	1	2	2	4
40 ,, 60 ...	...	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...	...	...
60 years and over ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	1	...	1	...	...	...	...	5	5	12	...	12	2	...	2	5	9	14

* Includes "Hereditary" and "Stage not indicated."

68. The following Table shows the number of out-patient attendances at public hospitals and Government Dispensaries for the past three years :—

	1932.		1933.		1934.	
	Public Hospitals.	Government Dispensaries.	Public Hospitals.	Government Dispensaries.	Public Hospitals.	Government Dispensaries.
Gonorrhœa and its complications ...	6,793	896	6,726	817	5,889	468
Chancroid ...	145	22	471	6	259	5
Syphilis (including Tertiary)	16,144	134	17,517	113	15,443	56
Granuloma Venereum and Pudendi ...	302	12	306	7	361	1

69. The Tables below furnish statements, classified in age-incidence periods, of Out-patients (new cases) treated at public hospitals, Government dispensaries and prisons during the year 1934 :—

(i) PUBLIC HOSPITALS.

Age.	Syphilis.									Gonorrhœa and its Complications.			Chancroid.			Granuloma Venereum and Pudendi.		
	Primary.			Secondary.			Tertiary or Chronic.*											
	M.	F.	T.	M.	F.	T.	M.	F,	T.	M.	F.	T.	M.	F,	T.	M.	F.	T.
Under 1 year ...	...	...	...	...	...	...	1	9	10	...	...	...	...	...	...	...	...	...
1 to under 5 ...	1	...	1	...	...	...	1	8	9	3	6	9	...	...	...	...	...	...
5 ,, 10 ...	...	...	...	...	...	...	7	8	15	5	2	7	...	...	...	...	...	...
10 ,, 20 ...	23	7	30	1	7	8	41	80	121	132	44	176	6	3	9	4	5	9
20 ,, 30 ...	84	13	97	32	8	40	134	196	330	501	59	560	26	1	27	8	1	9
30 ,, 40 ...	37	2	39	18	2	20	130	128	258	235	15	250	8	...	8	6	2	8
40 ,, 60 ...	10	...	10	6	...	6	120	67	187	99	...	99	4	...	4	1	3	4
60 and over ...	...	...	...	1	...	1	15	11	26	10	...	10	...	...	...	...	...	...
Total ...	155	22	177	58	17	75	449	507	956	985	126	1,111	44	4	48	19	11	30

*Includes "Hereditary" and "Stage not indicated."

(ii) GOVERNMENT DISPENSARIES.

Age.	Syphilis.									Gonorrhœa and its Complications.			Chancroid.			Granuloma Venereum and Pudendi.		
	Primary.			Secondary.			Tertiary or Chronic.*											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Under 1 year ...	...	...	...	...	...	...	1	1	2	...	1	1	...	...	...	...	...	...
1 to under 5 ...	...	..	..	...	...	...	1	3	4	...	5	5	...	...	...	...	...	...
5 ,, 10 ...	...	...	...	...	...	...	...	...	...	...	11	11	...	...	...	...	...	...
10 ,, 20 ...	1	1	2	...	3	3	...	...	...	27	23	50	...	...	...	...	...	...
20 ,, 30 ...	4	6	10	1	1	2	3	2	5	109	26	135	1	...	1	...	...	...
30 ,, 40 ...	5	1	6	2	2	4	5	2	7	61	18	79	2	...	2	...	...	...
40 ,, 60 ...	...	...	...	...	...	...	2	...	2	34	6	40	...	...	...	...	...	...
60 years and over ...	...	...	..	...	...	...	...	...	...	3	1	4	..	...	...	...	...	...
Total ...	10	8	18	3	6	9	12	8	20	234	91	325	3	...	3	...	...	...

*Includes "Hereditary" and "stage not indicated."

(iii)—GEORGETOWN AND NEW AMSTERDAM PRISONS.

Age.	Syphilis.									Gonorrhœa and its Complications.			Chancroid.			Granuloma Venereum and Pudendi.		
	Primary.			Secondary.			Tertiary or Chronic.*											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Under 1 year ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1 to under 5 ...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...
5 ,, 10 ...	...	...	..	...	...	...	...	...	...	...	...	...	..	..	..	...	...	...
10 ,, 20 ..	...	...	...	..	...	..	...	...	...	4	...	4	3	...	3	...	...	...
20 ,, 30 ...	5	...	5	1	...	1	...	...	...	25	...	25	5	...	5	3	...	3
30 ,, 40 ...	...	...	..	...	...	...	...	...	...	14	...	14	7	...	7	2	...	2
40 ,, 60 ..		...	...	...	...	...	...	...	...	7	...	7	3	...	3	..	...	...
60 years and over ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...
Total ...	5	...	5	1	...	1	...	...	...	50	...	50	18	...	18	5	...	5

* Includes " Hereditary " and " Stage not indicated."

70. The number of cases of Venereal Diseases treated on Sugar Estates for the past three years was :—

	1932.	1933.	1934.
Gonorrhoea ...	182	177	223
Chancroid ...	12	7	9
Syphilis (including tertiary)	60	42	91
Granuloma Venereum and Pudendi ...	2	0	0

Note.—Arsenical preparations chiefly Novarsenobillon are now supplied to Estate Hospitals by this department free of charge for the treatment of expectant mothers suffering from Syphilis where blood has been found to give a positive Wasserman reaction.

71. Classified in age-incidence periods the In-patients treated on Sugar Estates during the year were as follows :—

Age.	Syphilis.									Gonorrhœa and its Complications.			Chancroid.			Granuloma Venereum and Pudendi.		
	Primary.			Secondary.			Tertiary or Chronic.*											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Under 1 year ...	...	...	...	...	...	...	2	...	2	...	...	...	...	...	...	...	...	...
1 to under 5 ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
5 ,, 10 ...	...	...	...	...	...	...	2	...	2	...	2	2	...	...	...	...	...	...
10 ,, 20 ...	...	1	1	...	...	...	4	2	6	19	11	30	...	2	2	...	...	...
20 ,, 30 ...	3	2	5	2	1	3	5	...	5	39	9	48	5	...	5	...	...	...
30 ,, 40 ...	...	...	...	1	...	1	4	4	8	16	5	21	1	...	1	...	...	...
40 ,, 60 ...	...	...	...	...	...	...	7	10	17	23	2	25	1	...	1	...	...	...
60 years and over ...	...	...	...	...	...	...	1	1	2	...	...	...	...	...	...	...	...	...
Total ...	3	3	6	3	1	4	26	17	43	97	29	126	7	2	9	...	...	...

*Includes "Hereditary" and "Stage not indicated."

72. The Table below shows the Out-patients (new cases) treated on Sugar Estates during the year classified in age-incidence periods:—

Age.	Syphilis.									Gonorrhœa and its Complications.			Chancroid.			Granuloma Venereum and Pudendi.		
	Primary.			Secondary.			Tertiary or Chronic.*											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Under 1 year ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
1 to under 5 ...	...	...	...	...	...	...	1	1	2	...	1	1	...	...	...	...	...	...
5 „ 10 ...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...
10 „ 20 ...	4	...	4	...	6	6	1	...	1	10	2	12	...	...	...	...	...	...
20 „ 30 ...	2	1	3	2	3	5	2	2	4	37	11	48	...	...	...	...	...	...
30 „ 40 ...	3	...	3	...	1	1	...	3	3	16	9	25	...	...	...	...	...	...
40 „ 60 ...	...	...	...	...	...	...	5	...	5	6	4	10	...	...	...	...	...	...
60 years and over ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	9	1	10	2	10	12	10	6	16	69	28	97	...	...	...	...	...	...

* Includes "Hereditary" and "Stage not indicated'."

73. Below are extracts from the annual report of Dr. E. G. H. Payne, M.B., Ch. B., Medical Officer in charge of the venereal diseases clinics at the Public Hospital, Georgetown:—

"The staff consisted of one Medical Officer assisted by

"1 senior male nurse.
"1 senior female nurse (part-time).
"2 part-time assistant male nurses.
"1 part-time assistant female nurse.

"The days on which sessions were conducted remained the same as "heretofore.

"It is hoped that with the additional facilities provided for the new "Venereal Diseases Clinic additional sessions for females will be in-"augurated.

"*Hereditary Syphilis.*—The majority of cases treated fell in the age "period 10-20 years, as hitherto, and most of these cases showed lesions "of eye and osseous system.

"*Acquired Syphilis.*—With the exception of Secondary Syphilis there "was a general decline in the number of new admissions to the Clinic.

"*Gonorrhoea.*—The number of new admissions in this class also shows "a decline. Nevertheless the general tendency is for cases to attend the "clinic at an early stage of infection.

"*Chancroid.*—The number of cases shows a decline as compared with "the previous year. Cases of Chancroid reacted fairly well to general "treatment, i.e., dressings with hypertonic saline and later flavine. Con-"currently some cases received intravenous Dmelcos vaccine. Others "improved under tartar emetic injections and it is a little doubtful as to "whether this group was really Chancroid and not Granuloma Pudendi. "The clinical appearances and course of infection were however indicative "of Chancroid.

"*Granuloma Pudendi.*—There is nothing to note with reference to "incidence. The tendency to relapse was soon in a few return cases.

"*Attendances.*—The statistics in Table II. of Appendix A show a slight "decline in the total number of attendances. There is to be found in this "Table, however, a high number of attendances in the division 'Non-"Venereal' and 'Undiagnosed.' A large number of cases of Leucorrhoea "fall in the division "Undiagnosed." These are principally cases from "the Ante-Natal Centre who have been referred for investigation with "reference to gonococcal infection. The methods of diagnosis attempted "in these cases, *i.e.*, by smears and culture of cervical and urethral dis-"charges, in most cases proved unsatisfactory. In order to get through

"the number of cases referred it is necessary to increase the medical staff. "It has been a very great strain on the Medical Officer in charge attempt- "ing to cope with this phase of work and the routine treatment of cases "in general.

"*Defaulting* continues to be a problem. Without unduly emphasising "the matter I consider that the part-time appointment of a Medical "Practitioner or of one of the junior members of the hospital staff for "work in the clinic would greatly assist in reducing the incidence of "defaulting. Many cases default because of long periods of waiting. "Other reasons for default however are to be found in the migration of "men to the mineral areas. Some kind of follow-up system, however, "ought to be tried and it is hoped that it will be possible to do something "in this direction at an early date.

"*The New Cases of Early Syphilis represented 17.19%* of the total "number of cases admitted to the clinic during the year.

"*The ratio of Early Syphilis to Early Gonorrhœa was 1 to 3.59 "respectively.*—Early infection of Gonorrhœa represented 73 per cent. of "the total number of cases of Gonorrhœa admitted.

"*General Remarks.*—The clinic during the year continued to be very "active and to serve the purpose for which it was established. It is, how- "ever, desirable to reduce defaulting, to treat patients with a minimum of "delay on application for first treatment, and to improve pathological "work. This may only be achieved by enlisting the services of another "Medical Officer and the training of a male nurse in methods of simple "staining and microscopical work.

"Facilities for diagnosis of Gonorrhœa and tests of cure may very well "be extended by the introduction of a Complement Fixation Test.

"A permanent staff of male and female nurses is desirable for the "efficient working of the clinic, and it is hoped that it will be possible to "complete arrangements in this direction at an early date."

APPENDIX A.

TABLE I.—NEW CASES (MALE AND FEMALE) ADMITTED TO THE VENEREAL DISEASES CLINIC DURING THE YEAR 1934.

	Sy. 1.	Sy. 2.	Sy. 3.	Acute Gonorrhœa.	Chronic Gonorrhœa.	Chancroid.	Granuloma Ven.	Hereditary Syphilis.
	103	39	684	511	189	44	22	78
Comparative figures for year 1933 ...	159	39	834	565	312	65	16	99

TABLE II.—TOTAL ATTENDANCES OF CASES—MALE AND FEMALE—23,164.

Half year	Syphilis.	Gonorrhœa.	Chancroid.	Granuloma Venereum.	Non-Venereal Diseases.	Cases Undiagnosed.
To June ...	6,869	2,553	141	151	111	1,498
To December ...	6,942	2,445	114	146	168	2,026
Total ...	13,811	4,998	255	297	279	3,524

TABLE III.—NUMBER OF TREATMENTS GIVEN WITH—

	Arseno-Benrene Compounds.	Bismuth Preparations.	Tartar Emetic.	Mixed Vaccines.	Others.
Half year to June	4,139	5,079	256	381	137
Half year to December	3,825	4,954	251	349	147
Total	7,964	10,033	507	730	284

TABLE IV.—DISMISSALS FROM CLINIC DURING THE YEAR 1934 TO 31st DECEMBER.

(All cases).	Cured.	Non-venereal Disease.	Undiagnosed.
Male ...	60	132	262
Female ...	8	116	479
Total ...	68	248	741

TABLE V.—DEFAULTERS DURING 1934, (MALE).

(a)	Under 3 months.	Before completion of 2 courses.
Sy. 1. ...	58	42
Sy. 2. ...	15	20
Sy. 3. ...	114	202

Under 1 month
Acute gonorrhœa 257

TABLE V.—(b) DEFAULTING DURING 1934, (FEMALE).

	Under 3 months.	Before completion of 2 courses.
Sy. 3—Cases referred from Ante-natal Centre.	42	73
Sy. 3—Cases other than Ante-natal Centre.	90	261

(c) CASES REFFERRED FROM MATERNITY AND ANTE-NATAL CENTRE, GEORGETOWN.

Total No. referred 154

Total No. attended 94

TABLE VI (a).

ACTUAL NUMBER OF PATIENTS TREATED AT V.D. CLINIC (GEORGETOWN) DURING 1934 WITH A DISTRICT CENSUS (MALES).

Diseases.	Georgetown.	Lower E.C., Demerara.	Upper E.C., Demerara.	West Coast, Demerara.	East Bank, Demerara.	West Bank, Demerara.	Berbice.	Essequebo.	Demerara River District.	Total.
Syphilis 1 ...	71	27	4	10	13	5	3	2	3	138
Syphilis 2 ...	33	4	2	2	9	5	...	...	2	57
Syphilis 3 ...	262	79	31	29	37	39	5	6	1	489
Hereditary Syphilis ...	26	18	2	3	4	5	...	1	...	59
Acute Gonorrhœa ...	315	95	25	23	44	34	8	9	3	556
Chronic Gonorrhœa ...	115	41	9	18	16	14	6	4	3	226
Syphilis 1 and Gonorrhœa ...	7	1	...	4	...	...	...	2	...	14
Syphilis 2 and Gonorrhœa ...	2	1	1	...	1	...	...	...	...	5
Syphilis 3 and Gonorrhœa ...	36	9	2	5	10	7	...	3	1	73
Hereditary Syphilis and Gonorrhœa ...	..	1	...	...	...	...	...	...	.	1
Granuloma ...	13	2	...	...	1	3	1	...	3	23
Chancroid ...	20	8	1	4	4	1	2	...	...	40
Syphilis and Granuloma ...	3	...	...	...	...	...	...	...	...	3
Gonorrhœa and Granuloma ...	...	...	...	...	...	...	...	...	...	...
Syphilis and Chancroid ...	4	2	...	...	1	3	..	...	...	10
Gonorrhœa and Chancroid ...	...	...	...	...	1	...	...	...	1	2
Undiagnosed ...	101	41	11	17	23	14	5	5	5	222
Non-Venereal Disease ...	49	24	4	9	11	10	...	2	7	116
Total ...	...	...	...	...	...	...	...	...	...	2,034

TABLE VI (b).

ACTUAL NUMBER OF PATIENTS TREATED AT THE VENEREAL DISEASE CLINIC (GEORGETOWN) FOR THE YEAR 1934, WITH DISTRICT CENSUS (FEMALES).

Diseases.	Georgetown.	Lower E.C., Demerara.	Upper E.C., Demerara.	West Coast, Demerara.	East Bank, Demerara.	West Bank, Demerara.	Berbice.	Essequebo.	Demerara River District.	Total.
Syphilis 1 ...	21	3	...	...	1	3	...	...	...	28
Syphilis 2 ...	18	4	1	2	1	...	...	...	...	26
Syphilis 3 ...	487	65	16	18	40	23	1	1	2	653
Hereditary Syphilis ...	57	15	1	3	6	3	...	...	...	85
Acute Gonorrhœa ...	38	8	2	1	6	2	...	..	...	57
Chronic Gonorrhœa ...	35	10	4	...	4	1	...	...	...	54
Syphilis 1 and Gonorrhœa ...	3	...	...	...	...	...	...	...	...	3
Syphilis 2 and Gonorrhœa ...	...	...	...	...	...	...	...	...	...	...
Syphilis 3 and Gonorrhœa ...	11	2	1	...	1	...	...	...	...	15
Hereditary Syphilis and Gonorrhœa ...	1	...	...	...	...	...	...	...	...	1
Granuloma ...	9	1	...	1	2	1	...	...	...	14
Chancroid ...	6	1	...	1	2	...	...	...	...	10
Syphilis and Granuloma ...	1	...	...	...	...	...	...	...	...	1
Gonorrhœa and Granuloma ...	...	...	...	...	...	...	...	...	...	...
Syphilis and Chancroid ...	...	...	...	...	...	...	...	...	...	..
Gonorrhœa and Chancroid ...	...	...	...	...	...	...	...	...	...	...
Undiagnosed ...	303	65	17	15	27	12	4	3	3	449
Non-Venereal Disease ...	58	18	8	6	15	6	...	2	...	113
Total ...	...	...	...	...	...	...	...	...	...	1,509

74. *Yaws.*—7 cases were treated in public hospitals compared with 10 cases in 1933. There were no deaths. 243 cases were treated in the out-patient departments as against 351 in 1933.

75. *Leprosy.*—The work of the Leprosy Hospital, Mahaica, was effectively maintained during the year. The number of new admissions was 55, 29 males and 26 females, exclusive of patients who were re-admitted on account of inability to exist outside the institution owing to economic conditions (not because of recurrence of Leprosy). There were 13 deaths—4 males and 9 females, giving a death rate of 3.2 per cent of the total number of inmates.

76. The conduct of the staff was good and particular reference should be made to the great devotion to duty of the sisters of the Czecho-Slovakian Order of the Immaculate Conception whose services have been invaluable and who are beloved by the patients. For the proper management of this hospital it will be necessary in the near future to appoint an Assistant Superintendent, thus relieving the Medical Superintendent of many administrative duties.

77. In his annual report the Medical Superintendent of the Leprosy Hospital again draws attention to the unsatisfactory condition of the buildings. Furthermore, the general sanitation of the whole premises needs considerable improvement. These matters have been receiving attention and certain renovations have already been effected. It must be realized however that nothing short of replanning this institution will render it suitable for the purpose intended.

78. Dr. R. G. Cochrane, Medical Secretary, The British Empire Leprosy Relief Association, visited the colony in October, 1934. His report which was received in February, 1935, contains several important recommendations, including proposals for modernizing the blocks, the construction of a hospital with accommodation for about 40 beds, resanitation throughout (a special report by this department on the sanitation of the Leprosy Hospital is quoted in considerable detail in Dr. Cochrance's report) observation and treatment of early cases among children, and the Lady Denham Home Scheme. At the time of writing this report, a programme of maintenance and reconstruction works, based on these recommendations is under consideration by Government.

79. The following are extracts from the Annual Report for the year 1934 furnished to the Surgeon-General by Dr. F. G. Rose, M.B.E., B.A., M.B., B. Chir.,

(Camb.) M.R.C.S. (Eng.) L.R.C.P. (Lond.) M.D., D.M.R. & E. (Camb) M.R.C.P. (Lond), Medical Superintendent, Leprosy Hospital:—

"*Buildings.*—I regret to have again to draw attention to the dilapidated state of the buildings and outhouses.

"Minor repairs have as usual been carried out by our own carpenters but little can be done in the absence of a regular supply of material.

"The new Bishop Galton Memorial Home for the children, to which reference was made last year, was formally opened by His Lordship Bishop Weld, in the presence of a large assembly, on 22nd February, 1934.

"The new Laboratory and Dispensary, very well fitted for their purpose, were completed by Attendant carpenters during the years and are now in use.

"A new office for the Steward and the Attendant Clerk and Issuer was also thus prepared and is now available.

"There is pressing need for a real modern Hospital of about 40 beds, male and female, with an operating theatre and other adjuncts, for the treatment of acute cases.

"The Hydnocarpus Anthelmintica trees continued to flourish and some have been fruiting recently. The H. Venemata trees from the Department of Science and Agriculture also did well, but unfortunately the Hydnocarpus Wightiana which were the first to be planted are very backward and although the assistance of the Department of Science and Agriculture has been sought and obtained, have made no progress for some time.

"The farm is still in being and much produce is sold to the store therefrom.

"There is a wide-spread impression, not, I believe, justified by experience, that the Artesian Well water is unsuitable for the cultivation and much of it accordingly suffers during drought.

"*Water Supply.*—The Artesian Well Supply is much appreciated and fulfils a long-felt need. Little has, however, been done to the vats and gutters and I am of opinion that there is not, under present conditions, a sufficient reserve supply. For example, when towards the end of the year the Clonbrook well had to be reconditioned and we were for some weeks without a supply of well-water, our supply of rain water was speedily exhausted and it was impossible to secure ordinary cleanliness until fortunately there came a welcome shower of rain.

"The patients in the Male South Block particularly suffer from lack of bath-rooms and water for washing purposes.

"*Sanitation.*—The seasonal visitations of mosquitoes at times render life here an almost intolerable burden and the numbers of these unwelcome visitors are increased by the breeding of Aedes in the vats and cisterns, many of which are unscreened or imperfectly screened.

"Half-yearly reports are made on these conditions to the Surgeon General.

"Culex breeds readily in the concrete drains all of which are in need of regrading and have to be swept clean daily.

"The pail system of disposal of excreta still remains and is very unsatisfactory.

"I repeat once more that septic tanks should be installed as follows:—

1. Male Hospital—24 beds.
2. Male Infirmary—26 beds.
3. Female Hospital—16 beds.
4. Female Infirmary—21 beds.

"Pit-latrines should be provided for the rest of the Institution.

"Additional latrines are required on the male side, and there is urgent need of bath-rooms with which the men are entirely unprovided. Owing

"to the silting up of the main drainage canal outside the hospital walls, it "is very difficult to get efficient drainage in the compound. This is a "matter which requires the urgent attention of the Public Works Depart- "ment. The dietary scale continued to work satisfactorily, there being "few complaints.

"*Patients.*—There were 4 births during the year. No patient absconded "during the year.

"*Occupation.*—All minor repairs of buildings, preparation of the grounds, "making of boots, shoes and slippers and clothing for the use of the "patients were done as usual by patients under the supervision of the "Chief Attendant and Artisan Attendants.

"I may add here that, since the passage of the Leprosy Ordinance of 1931, "the population here is by no means as stable as formerly. Provision is made "in this Ordinance for discharged patients to be admitted for treatment of "intercurrent ailments not directly due to Leprosy; such patients may remain "for a few months and then be discharged. In addition to this the length of "stay of new cases has been much shortened in recent years. The net "result is that a much larger number of people have to be provided with "clothing and footwear than was formerly the case. To be exact, 392 had "to be thus provided for in 1934 as against an average of 272 in 1925.

"The Clothing and Furniture Votes have therefore become quite inade- "quate for the purpose and this has led to much dissatisfaction through- "out the year. The position, so far as footwear is concerned, was tem- "porarily relieved by the ordering of 142 pairs of boots from the "Demerara Leather and Boot Factory in November.

"Many patients as usual engaged in farming, poultry-rearing etc., "besides being employed in trench-cleaning, weeding and other forms of "labour. Patients also assist in maintaining cleanliness in the wards, "dressing ulcers, giving injections and local applications, and administer- "ing treatment in the Electro-therapeutic Department.

"Sports and pastimes—Cricket and football were played as usual, the "usual dances and entertainments were organized and the weekly cinema "was much appreciated until the breakdown of the lighting plant late in "the year.

"The Guide Troop and Brownie Pack, under the leadership of Mrs. "F. G. Rose, Guide Commissioner for the East Coast, maintained their "activities.

"The Scouts, whose Scout-master is the Rev. L. J. Chybnalle, had 5 "meetings during the year.

"*Patients—Visitors to the Leprosy Hospital.*—Official visits were paid "during the year by His Excellency the Governor Sir Edward Denham, "K.C.M.G., K.B.E., His Excellency the Officer Administering the Govern- "ment, Sir Crawford Douglas-Jones, C.M.G., The Hon. The Surgeon "General, Dr. J. A. Henderson, The Acting Surgeon General, Dr. Q. B. "de Freitas, the Board of Official Visitors, comprising Mesdames M. B. "Laing, S. H. Bayley and E. Cochrane, the Rt. Rev. The Bishop of Guiana, "the Very Rev. Father Morrison, S.J., and Mr. A. Groves, and by Drs. "Pottinger and Cochrane, Government Medical Officers of Health. The "acting Director of Education, Mr. L. G. Crease, also paid a visit of "inspection to the school.

"Other visitors included Lady Denham, Mrs. G. R. Reid, The Rev. W. "Lees, Dr. R. Strang and the following from abroad:

Dr. Vincent Coates, Bath.
Dr. and Mrs. Ogilvie, Montserrat.
Mr. H. A. Gibbs, U.S.A. and
Dr. R. G. Cochrane, Secretary of the British Empire Leprosy Relief Association.

"The Leprosy Board sat for examination of patients after admission and "prior to discharge on 2 occasions.

"*Patients—Gifts.*—Many gifts of books, newspapers, toys, etc., were "received and distributed.

"A sum of $53.50 was collected during the year in aid of the Enter- "tainment Fund and $102.00 was collected by Mrs. J. A. Henderson from "various firms and individuals out of which Christmas gifts for all the "patients were provided for the annual Christmas Tree, the purchases being "made by Mrs. E. Cochrane.

"*Patients—School.*—There were 28 scholars on the register the average "attendance for the year being 20.

"The school remains very poorly equipped with furniture, books and "stationery in spite of appeals to the Education Department.

"*Patients.—Treatment.*—There was no change in the methods of specific "treatment, which continues to give excellent results.

"*Contributions to Literature.*—The following articles were contributed "during the year by the Medical Superintendent :—

Curability and Relapse in Leprosy—
Leprosy Review, Vol. V., No. 4 Oct. 1934.
Provision for leprous children in British Guiana—
International Journal of Leprosy, Oct. 1934.

"944 prescriptions were written for male and 536 for female out-patients "resident in the institution, while 217 males and 80 females were treated "in hospital as in-patients during the year.

"37 operations were performed on the male side and 21 on the female "side, their nature being as follows:—

"Excision of fibroid Tumour	1
"Excision of Nodules	19
"Osteotomy	4
"Reduction of Prolapsus Ani	1
"Circumcision	1
"Amputation of phalanx of finger	1
"Excision of Sinus and scraping of bone ...	3
"Excision of enlarged axillary gland ...	1
"Sequestrotomy	4
"Paring of lobes of ear	1
"Opening up of sinus	2
"Incision of Abscess	2
"Scraping of necrosed Tissue	2
"For Entropion (double)	2
"Removal of necrosed metatarsal	1
"Palporrhaphy	1
"Tendon lengthening	1
"Incision of septic hand	1
"Amputation of forearm and hand	1
"Amputation of leg...	1
"Amputation of finger and toe	2
"Excision of fibroma from left foot	1
"Hæmorrhoidectomy	1
"Resuction of Nasal septum	1
"Curetting of skin of nose	1
"Plastic operation on skin of elbow	1
"Curetting of sinus of hand	1
Total ...	58

"One visit was paid by the Government Ophthalmologist to advise as "to treatment of various eye conditions associated with Leprosy.

"1,053 sessions were held in the Electro-therapeutic Department for "the treatment of 42 male and female patients.

"The following Laboratory investigations were made :—

"Examination of Smears from Nasal Mucosa ...	978
"Examination of Nodules of skin, etc. for M. Leprae	23
"Kahn precipitation Tests	3
"Examination of Blood for Malarial parasites ...	1
"Examination of Urine	4
"Examination of Stool for Ankylostome Ova ...	9
"Examination of Sputum for B. Tuberculosis ...	6

"During the year 52 visits were paid to the Out-patients' Clinic in "Georgetown and 12 each to those in New Amsterdam, the Corentyne "Coast, Wakenaam, Suddie and Charity on the Pomeroon River.

"The following were the numbers of patients seen and attendances "made :—

"Clinic	No. of Patients.	Total No. of Attendances.
"Georgetown ...	96	1,240
"New Amsterdam ...	56	215
"No. 63, Corentyne Coast	36	205
"Mahaica ...	75	248
"Essequebo, including "Wakenaam, Suddie "and Charity ...	33	33
	296	1,941

"37 patients were discharged as quiescent during the year and there "were 55 new admissions. 3 quiescent cases became interrupted and 3 "arrested cases relapsed.

"13 deaths took place, the causes being as follows :—

"Cutaneous Leprosy—Toxaemia	1
Cutaneous Leprosy—Exhaustion	1
"Cutaneous Leprosy—Pulmonary Tuberculosis ...	1
"Neural Leprosy —Exhaustion	2
"Neural Leprosy —Acute Nephritis ...	2
"Neural Leprosy —Chronic Diarrhœa ...	1
"Neural Leprosy —Cardiac Disease ...	1
"Cutaneous Leprosy—Nephritis, Chronic Bronchitis	1
"Neural Leprosy —Septicaemia	1
"Gangrene of foot —Toxaemia	1
"Cutaneous Leprosy—Nephritis	1
Total ...	13

"At the end of the year the total number of cases under observation "was 698, of whom 475 were undergoing active treatment.

"102 cases eluded observation during the year.

"*British Empire Leprosy Relief Association.*—The Lady Denham Home "Fund amounted to around $14,000 by the close of the year.

"The usual committee meetings were held, but a suitable building site "has not yet been decided upon.

"The Entertainment Committee held few meetings, owing to the absence "of most of its members on furlough.

"The following is the total expenditure on the Leprosy Hospital during "the past 6 years.

" Year.	Gross Expenditure.	Revenue.	Nett cost of upkeep.
1929	$ 38,740.80	$ 1,123.98	$ 37,616.41
1930	37,766.14	1,048.34	36,717.80
1931	32,319.04	1,182.95	31,136.09
1932	36,385.49	974.41	35,411.08
1933	37,048.55	503.53	36,545.02
1934	42,285.19	516.11	41,769.08

80. The statistical returns of the Leprosy Hospital for the year are as follows:—

(1) TABLE SHOWING NUMBER OF PATIENTS TREATED AND PERCENTAGE MORTALITY, 1934.

	M.	F.	T.
Number of patients on 31st December, 1933 ...	182	114	296
New admissions, 1934	29	26	55
Re-admitted once in 1934...	27	21	48
Re-admitted twice in 1934	3	3	6
Re-admitted thrice in 1934	1	1	2
Total number treated in Leprosy Hospital, 1934 ...	242	165	407
Died in Leprosy Hospital, 1934	4	9	13
Percentage mortality, 1934	1.7	5.5	3.2
Daily average number treated, 1934	186.4	118	304.4
Highest number of patients, 1934	191	125	316
Lowest number of patients, 1934	177	118	295

(2)—TABLE SHEWING NUMBER OF ADMISSIONS, DISCHARGES, DEATHS, ETC., CLASSIFIED ACCORDING TO RACE AND SEX.

	Europeans.				East Indians.				Chinese.		Aboriginal Indians.		Black.		Mixed Races.		Total.		Grand Total.	
	Other than Portuguese.		Portuguese.		East Indian Immigrants.		B. G. East Indians.													
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
Remaining on 31st December, 1933 ...	1	...	9	5	33	7	31	13	2	3	...	...	76	65	30	21	182	114	296	
New admissions in 1934 ...	...	...	1	...	8	4	3	3	1	...	...	...	15	17	1	2	29	26	55	
Re-admitted once in 1934 ...	...	...	...	...	9	10	6	3	...	...	...	...	10	6	2	2	27	21	48	
Re-admitted twice in 1934 ...	...	...	...	...	...	...	2	3	...	...	...	...	1	...	...	...	3	3	6	
Re-admitted thrice in 1934 ...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	1	1	2	
	1	...	10	5	51	21	42	23	3	3	...	...	102	88	33	25	242	165	407	
New discharges during 1934 ...	..	...	1	1	7	3	3	2	...	...	...	...	6	11	2	1	19	18	37	
Re-discharges once in 1934 ...	...	...	...	1	6	3	8	1	...	...	...	...	8	3	2	...	24	8	32	
Re-discharges twice in 1934 ...	...	...	...	...	1	...	3	5	...	...	...	...	...	...	...	...	4	5	9	
Re-discharges thrice in 1934 ...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	
Deaths during 1934 ...	...	...	...	...	2	4	...	1	...	...	...	...	2	4	...	...	4	9	13	
Remaining on 31st December, 1934 ...	1	...	9	3	34	11	28	14	3	3	...	...	86	70	29	24	190	125	315	

(3) TABLE SHEWING CLASSIFICATION OF PATIENTS ACCORDING TO DISTRICT, FORM OF LEPROSY AND OCCUPATION.

County of Demerara.	M.	F.	T.	County of Berbice.	M.	F.	T.	County of Essequebo.	M.	F.	T.	Form of Leprosy.	M.	F.	T.
Georgetown ...	73	41	114	New Amsterdam ...	3	2	5	North Essequebo ...	4	3	7	Cutaneous ...	74	62	136
East Coast ...	28	26	54	East Coast ...	18	10	28	Pomeroon River ...	7	2	9	Neural ...	100	57	157
West Coast ...	12	8	20	West Coast ...	4	1	5	South Essequebo ...	3	4	7	Mixed ...	15	5	20
East Bank ...	9	14	23	East Bank ...	4	5	9	North West District...	1	...	1	Non Leper ...	1	1	2
West Bank ...	11	1	12	West Bank ...	1	1	2								
Demerara River ...	6	2	8	Canje ...	2	5	7								
				Berbice River ...	4	...	4								
	139	92	231		36	24	60		15	9	24		190	125	315

Occupation.	M.	F.	T.
Labourers	127	32	159
Farmers	14	2	16
Housewives...	...	35	35
Clerks	2	...	2
Scholars	32	17	49
Bookbinders	2	...	2
Salesman	1	...	1
Shoemaker	1	...	1
Cartman	1	...	1
Chauffeurs	2	...	2
Carpenters	2	...	2
Cook	1	...	1
Schoolmaster	1	...	1
Seaman	1	...	1
Boiler Maker	1	...	1
Printer	1	...	1
Mechanic	1	...	1
Seamstresses	...	22	22
Huckster	...	1	1
Washer	...	1	1
Vagrant	...	1	1
Domestic Servants	...	14	14
Total	190	125	315

(4) TABLE SHEWING CLASSIFICATION OF PATIENTS ACCORDING TO AGE, RACE, AND SEX.

	Europeans.				East Indians.				Chinese.		Aboriginal Indians.		Mixed.		Black.		Total.		Grand Total.
	Other than Portuguese.		Portuguese.		East Indian Immigrants.		B.G. East Indians.												
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1 to 5 years	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	1	2	2	4
6 to 10 ,, ...	...	...	1	...	...	...	1	...	...	...	...	...	...	3	1	1	3	4	7
11 to 20 ,, ...	1	...	3	1	...	...	6	5	1	2	...	...	7	5	22	11	40	24	64
21 to 30 ,, ...	...	...	1	1	...	...	9	5	...	...	...	...	12	10	22	21	44	37	81
31 to 40 ,, ...	...	...	2	...	6	1	9	3	2	...	...	...	6	2	11	13	36	19	55
1 to 50 ,, ...	...	..	1	1	11	4	2	...	...	...	...	...	2	2	13	12	29	19	48
51 to 60 ,, ...	...	...	1	...	11	6	1	1	...	...	...	...	2	...	10	8	25	15	40
61 to 70 ,, ...	...	...	...	...	6	...	...	...	...	1	...	...	...	...	2	1	8	2	10
71 to 80 ,, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	2	3	3	6
Total ...	1	...	9	3	34	11	28	14	3	3	..	...	29	24	86	70	190	125	315

D.—Helminthic Diseases.

ANKYLOSTOMIASIS.

81. 90 cases were treated in public hospitals with 8 deaths compared with 53 cases and 5 deaths in 1933. 212 cases were treated in Out-patient Departments as against 126 cases in 1933. The deaths registered as due to the same disease throughout the Colony were 22 compared with 11 in 1933.

E.—Quarantinable Diseases.

82. There were no cases of plague, cholera, yellow fever, small-pox or typhus during the year.

III.—Vital Statistics.

83. The population on the 31st December, 1934, as estimated by the Registrar General was 323,171 (161,718 males and 161,453 females).

84. There were 9,301 births and 7,980 deaths. The natural increase of population was therefore 1,321.

85. The number of immigrants (7,520) exceeded the number of emigrants (6,930) by 590.

86. The following Table shows the population, the number of births and deaths, the birth-rate and death-rate per 1,000 of the estimated population, the deaths of children under one year of age, the infantile death-rate per 1,000 births, and the number of still-births from 1924 to 1934 :—

(1) Year.	(2) Population.	(3) Births.	(4) Deaths.	(5) Birth rate.	(6) Death rate.	(7) Deaths of Children under 1 year.	(8) Infantile Death rate per 1,000 Births.	(9) Stillbirths.
1924 ...	301,204	9,755	7,717	32·4	25·6	1,606	165	822
1925 ...	304,412	10,197	7,352	33·5	24·2	1,582	155	787
1926 ...	306,844	10,653	7,837	34·7	25·5	1,696	159	736
1927 ...	308,473	10,041	8,024	32·6	26·0	1,589	158	777
1928 ...	307,784	8,702	8,575	28·3	27·9	1,607	185	731
1929 ...	309,676	9,824	7,281	31·7	23·5	1,434	146	703
1930 ...	312,489	10,438	7,174	33·4	23·0	1,529	146	697
1931 ...	313,619	9,853	6,848	31·4	21·8	1,373	139	621
1932 ...	317,813	10,825	6,694	34·1	21·1	1,503	139	651
1933 ...	321,289	10,461	7,848	32·6	24·4	1,613	154	627
1934 ...	323,171	9,301	7,980	28·8	24·7	1,567	168	578

87. *Births.*—9,301 births (4,727 males and 4,574 females) were registered, giving a birth-rate of 28.8 per 1,000 of the population.

88. In 1933 there were 10,461 births, equivalent to a birth-rate of 32.6 per 1,000.

89. The number of still-births recorded was 578, which was in proportion of 6 to every 100 children born alive.

90. *Deaths.*—7,980 deaths (4,159 males and 3,821 females) were registered giving a general death-rate of 24.7 per 1,000 of the population.

91. The statement below is a return of deaths occurring in the whole Colony during each quarter of the year for the last five years ;—

	1930.	1931.	1932.	1933.	1934.
1st Quarter ...	2,060	2,055	1,596	2,420	2,891
2nd Quarter ...	1,534	1,390	1,432	1,625	1,894
3rd Quarter ...	1,708	1,673	1,665	1,752	1,494
4th Quarter ...	1,882	1,730	2,001	2,051	1,701

92. In 1933 the general death-rate was 24.7 per thousand, the highest ratio recorded since 1928, when the figure was 27.9. Just as the epidemic of influenza during the first quarter of 1933, accounted for increasing the death-rates of certain of the principal causes in that year, so did the effects of the flood at the commencement of 1934, augment the death-rates in these categories for the year under review more especially bowel complaints, malaria and undefined fevers, kidney diseases, diseases of early infancy and pneumonia and bronchitis.

93. *Infantile Mortality.*—The number of deaths under one year of age was 1,567 which equalled a rate of 168 per 1,000 births. In 1933 there were 1,613 deaths or 154 per 1,000 births.

94. The number of deaths in the five principal groups during 1932, 1933 and 1934, were as follows :—

	1932.	1933.	1934.
Congenital debility, etc. ...	348	447	461
Fever (Malaria and unqualified) ...	309	296	278
Premature Birth, etc.	293	236	255
Pneumonia and Bronchitis ...	194	237	147
Bowel complaints (including Dysentery Diarrhœa and Enteritis) ...	152	192	236

95. The Maternal Mortality Statistics (per 1,000 live births) for the years 1932, 1933 and 1934 were as follows :—

	1932.	1933.	1934.
The whole Colony	9.9	12.1	13.1
Public Hospitals	29.7	47.3	35.9
Infant Welfare and Maternity League ...	7.5	4.7	7.0
Sugar Estates	13.1	15.8	18.4

96. The effect of the flood early in the year which was responsible for an increase in the number of deaths in other diseases also influenced adversely the maternal mortality. Owing to the increased incidence of malaria and other debilitating diseases, the nutrition of expectant mothers was seriously below par and this was reflected in the incidence of Macrocytic Anæmia which affected a considerable number with fatal results when their confinement and consequent shock added considerably to their other serious symptoms. In this connection, attention is called to an interesting paper on "Megalocytic Anæmia in East Indians" published as an appendix to this report. Another possible factor is the reluctance of expectant mothers in remote parts of the Colony in seeking the help of the district medical officers in charge of the ante-natal clinics which are held regularly in connection with the Infant Welfare and Maternity League.

97. The following return is taken from the Registrar-General's detailed return of causes of deaths for the years 1932, 1933 and 1934 :—

The Puerperal State—

Causes of Death.	Deaths.		
	1932.	1933.	1934.
Accidents of Pregnancy ...	9	22	19
Other accidents of labour ..	9	6	8
Puerperal hæmorrhage	7	14	14
Puerperal Sepsis	19	15	18
Puerperal albuminuria and Convulsions ...	32	24	21
Puerperal Phlegmasia Alba Dolens, Embolism and Sudden Deaths ...	5	1	3
Other causes	27	45	39
Total ...	108	127	122

98. 455 cases of diseases of the puerperal state were treated in public hospitals with 42 deaths. In 1933 there were 412 cases and 42 deaths.

99. The number of normal confinements managed in public hospitals was 1,123 including 25 remaining from the previous year.

City of Georgetown.

100. Below is given a Table showing in parallel columns the separate figures

for the Municipal area and for the Georgetown Registration District which includes certain districts outside the municipal boundaries :—

	City of Georgetown.	
	Municipal Area	Registration Area.*
Estimated Population	63,080	64,931
No. of Births	1,680	1,902
Birth-rate	26.6	29.3
No. of Deaths	1,360	1,461
Death-rate	21.5	22.5
Infantile Mortality	151	145
Deaths from Enteric Fever	7	14
Deaths from Malaria	90	108

*The deaths of persons in the Hospitals and other Public Institutions in Georgetown have in each case been returned as occurring in the district from which the patients came.

Town of New Amsterdam.

101. The number of births registered was 282 *i.e.* a birth-rate of 30.6 per thousand compared with 280 or a rate of 30.7 per thousand in 1933.

102. There were 213 deaths *i.e.* a death rate of 23.1 per thousand compared with 215 deaths or a rate of 23.6 per thousand in 1933.

103. The infant mortality was 163 per thousand compared with 129 per thousand in 1933.

104. Malaria Fever was the cause of 13 deaths compared with 21 in 1933.

105. There were 4 deaths from Enteric Fever, the same figure as that for 1933.

106. The following Tables give the Vital Statistics for each registration district in the Colony for the year 1934 and return of Vital Statistics for Georgetown and New Amsterdam for the years 1934, 1933 and 1932 ;—

RETURN OF VITAL STATISTICS FOR EACH REGISTRATION DISTRICT IN THE COLONY FOR THE YEARS 1934, 1933, 1932.

District.	Estimated Population.	Births.	Deaths.	Annual rate per 1,000 living.		No. of deaths due to							Still-Births.	No. of deaths of children under one year of age.	Deaths of children under one year of age to 1,000 registered births.
				Births.	Deaths.	Typhoid and Para-typhoid Fevers.	Intestinal Disorders over one year.	All Renal Diseases.	All Respiratory Diseases.	Malarial & undefined Fevers.	Phthisis and other forms of Tuberculosis.	Intestinal Disorders under one year.			
Skeldon ...	14,491	589	190	40·6	13·1	1	12	18	21	21	1	8	23	49	84
Port Mourant ...	23,975	798	447	33·3	18·6	7	40	34	64	66	3	22	36	78	98
Lower Canje ...	10,653	273	202	25·6	19·0	5	16	21	35	31	6	9	8	41	150
Upper Canje ...	691	16	21	23·2	30·4	...	2	...	2	6	1	1	2	4	250
New Amsterdam ...	9,206	282	213	30·6	23·1	4	16	15	19	13	8	6	40	46	163
Highbury ...	2,697	72	86	26·7	31·9	1	5	3	19	16	1	5	2	15	208
Mara and Upper Berbice River ...	2,718	93	63	34·2	23·2	...	6	9	6	9	2	2	6	10	108
Cotton Tree ...	13,314	389	271	28·5	20·4	10	27	18	21	30	4	7	22	53	139
Mahaicony ...	11,076	284	195	25·6	17·6	...	14	2	24	36	2	12	14	51	180
Mahaica ...	12,944	341	421	26·3	32·5	6	58	23	62	74	6	19	19	81	238
Buxton ...	21,375	500	633	23·4	29·6	8	71	27	97	96	22	19	45	120	240
Plaisance ...	22,911	600	657	26·2	28·7	5	57	37	81	116	17	30	27	150	250
Georgetown ...	64,931	1,902	1,461	29·3	22·5	14	107	98	154	108	92	31	127	275	145
Peter's Hall ...	19,161	483	625	25·2	32·6	10	50	50	101	73	18	14	31	105	217
Demerara River ...	8,077	209	165	25·9	20·4	1	6	12	11	39	6	1	7	32	153
Belle Vue ...	14,047	419	432	29·8	30·8	4	30	49	48	64	17	14	31	75	179
Leonora ...	12,850	367	381	28·6	29·6	1	26	26	53	80	5	4	28	86	234
Philadelphia-Leguan ...	14,191	434	435	30·6	30·6	2	30	31	90	91	7	8	40	108	249
Up. Essequibo River ...	1,119	2	31	1·8	27·7	...	2	...	2	4	...	...	1	1	500
Bartica ...	4,734	110	87	23·2	18·4	...	8	1	11	15	6	2	8	18	164
Up. Mazaruni River ...	2,227	11	35	4·9	15·7	...	...	2	3	5	1	...	1	1	99
Wakenaam ...	4,007	126	161	31·4	40·2	...	23	14	8	24	5	5	5	29	230
Suddie ...	7,948	278	200	35·0	25·2	1	15	28	25	40	7	...	32	37	133
Anna Regina ...	10,983	266	288	24·2	26·2	1	28	52	20	54	4	9	14	44	165
Pomeroon ...	5,590	239	128	42·8	22·9	2	27	10	3	39	5	5	4	33	138
North Western ...	7,252	236	152	32·5	21·0	2	4	5	24	53	7	3	2	25	106
Males ...	161,718	4,727	4,159	29·2	25·7	37	335	315	666	615	140	121	319	846	179
Females ...	161,453	4,574	3,821	28·3	23·7	48	343	270	338	588	113	115	259	721	158
Persons ...	323,171	9,301	7,980	28·8	24·7	85	678	585	1004	1203	253	236	578	1567	168
For Year 1933 ...	321,260	10,461	7,848	32·6	24·4	68	454	528	1127	1140	289	192	627	1613	154
For Year 1932 ...	317,813	10,825	6,694	34·1	21.1	46	305	501	861	1034	320	153	651	1503	139

RETURN OF VITAL STATISTICS FOR GEORGETOWN AND NEW AMSTERDAM FOR THE YEARS 1934, 1933, 1932.

District.	Estimated Population.	Births.	Deaths.	Annual rate per 1,000 living.		No. of deaths due to							Still-Births.	No. of deaths of children under 1 year of age.	Deaths of children under one year of age to 1,000 registered births.
				Births.	Deaths.	Typhoid and Para-typhoid Fevers.	Intestinal Disorders over 1 year.	All Renal Diseases.	All Respiratory Diseases.	Malarial & undefined Fevers.	Phthisis and other forms of Tuberculosis.	Intestinal Disorders under 1 year.			
Georgetown, 1934 ...	64,931	1,902	1,461	29·3	22·5	14	107	98	154	108	92	31	127	275	145
Georgetown, 1933 ...	64,207	1,861	1,331	29·0	20·7	10	74	82	161	81	90	24	113	236	127
Georgetown, 1932 ...	63,400	1,895	1,215	29·9	19·2	9	51	79	117	89	98	24	147	249	131
New Amsterdam, 1934	9,206	282	213	30·6	23·1	4	16	15	19	13	8	6	40	46	163
New Amsterdam, 1933	9,119	280	215	30·7	23·6	4	10	10	30	21	12	10	38	36	129
New Amsterdam, 1932	9,045	313	159	34·6	17·6	2	4	9	20	8	11	5	40	28	89

NOTE.—The deaths of persons in the Hospitals and other Public Institutions have in each case been returned as occurring in the District from which the patients came.

IV.—Hospitals and Dispensaries.

107. The public hospitals in the Colony are :—

	Public Hospital.	County.	No. of beds.
1	Georgetown	Demerara	578
2	New Amsterdam	Berbice	161
3	Suddie	Essequebo	92
4	Bartica	do.	19
5	Mabaruma	do.	30
6	Potaro*	do.	6
7	Kamakusa*	do.	6

*Dispensary Hospitals in interior mining localities.

108. The importance of proper maintenance of all Government hospital buildings was referred to in last year's annual report. While certain repairs and renovations such as those in connection with the surgical block, Georgetown hospital, part of the roof at the New Amsterdam hospital, moderately extensive improvements at Suddie and Bartica hospitals were effected in 1934, much remains to be done in this direction. At the end of the year, however, the Legislative Council voted $74,300 for the purpose of reconditioning Government buildings from which it is anticipated that medical institutions will receive their fair share.

109. It is satisfactory to be able to record that provision exists in the 1935 estimates for the construction at the Georgetown hospital of new offices for the steward's department, a new sewing room, the installation of increased water supply for the surgical block, Lady Thomson and the Seamen s Wards, and the oiling and asphalting of all pathways in both compounds.

110. The Seamen's Ward which was rebuilt during 1933 has proved a great benefit to the several sections of the community for whom it provides accommodation. It is in fact the most popular ward of the hospital, not least with private patients, many of whom prefer the Seamen's to the Lady Thomson Ward. By the transfer of female surgical cases from the female compound to the surgical block in the male compound, which was effected at Easter, an important improvement in the management of the hospital has been brought about.

111. In regard to the New Amsterdam hospital re-arrangment of the Out-patient Department, Ophthalmic and Venereal Diseases Clinics, and enlargement of the dispensary should be carried out as soon as possible, as the present premises are very cramped. This alteration should be comparatively easily achieved in that accommodation for these clinics can readily be made under the western wing of the building.

112. The extensions recently carried out at Bartica hospital have considerably facilitated and improved its functions by enabling the performance of operations and the conduct of Maternity and Child Welfare clinics under more favourable conditions, larger admissions of female patients, housing of the female nursing staff, and enlargement of the dispensary. This hospital however stands in great need of better lighting and it is hoped that an electric lighting plant will be installed in the near future.

113. The provision of adequate accommodation for the medical and nursing staff attached to institutions where this does not exist has become an urgent matter. Additional quarters are required for the medical officers and nurses at the Georgetown hospital, while at New Amsterdam (where no quarters exist) and Suddie there should be a nurses' home in the precincts of these hospitals.

114. About September, 1933, a private hospital was established in Georgetown under the management of Dr. Craigen, Dr. Romiti and Dr. Coia. This institution which has 43 beds (with extra emergency accommodation of 7 to 8 additional beds)

and a European matron in charge of the nursing staff, has provided a nursing home for members of the community requiring such treatment who are not normally patients in public hospitals. In taking care of this part of the population, these practitioners have rendered valuable medical services to which their instructive record of work done since the inception of the home ("Colonna House") is clear attestation.

115. The total number of patients admitted to Government hospitals was 19,143 compared with 19,038 in 1933 and 18,290 in 1932.

116. The Table below shows the number of new admissions to hospitals during the year and furnishes approximate figures of admissions of the same patients on one occasion or more occasions. The total thus furnishes in truer perspective the actual amount of sickness occurring in the Colony and treated at the public hospitals :—

IN-PATIENTS.

Hospital.	Total admissions during year.	Persons admitted on one occasion (approx.)	Persons admitted on two occasions.	Persons admitted on more than two occasions (approx.)
Public Hospital, Georgetown ...	13,114	11,324	655	160
Public Hospital, New Amsterdam	2,792	2,529	109	15
Public Hospital, Suddie ...	2,129	2,024	33	13
Public Hospital, Bartica ...	487	457	15	...
Public Hospital, Mabaruma ...	520	442	36	2
Public Hospital, Kamakusa ...	31	27	2	...
Public Hospital, Potaro ...	70	70	...	...
Total	19,143	16,873	850	190

117. The total number of patients who sought treatment at the out-patient departments of public general hospitals was 61,640. The figures for 1933 and 1932 were 58,308 and 53,245 respectively.

118. The principal diseases treated in Government hospitals were :—

Diseases.	Cases.	Deaths.
Malaria (including Blackwater Fever) ...	2,374	157
Dysentery	183	32
Enteric Fever	136	41
Bowel Diseases	460	150
Pneumonia (all forms)	228	149
Tuberculosis (all forms) ...	456	135
Bronchitis	792	118
Nephritis	538	159
Diseases of the Heart (all forms) ...	403	145
Venereal Diseases	1,691	91
The Puerperal State	1,578	42

119. Table 2 shows the accommodation, number of patients and deaths, average stay, percentage of mortality on number treated and number of out-patients in each hospital.

120. Table 3 gives the classes of in-patients and out-patients treated and the number of prescriptions dispensed.

121. Table 4 gives in detail the diseases of out-patients and in-patients treated.

122. Table 5 is a return of the surgical operations performed.

123. The number of in-patients treated was 19,935 as compared with 19,754 in 1933.

124. The daily average number of patients in the three principal hospitals was :—

	1932.	1933.	1934.
Public Hospital, Georgetown ...	517	541	593
Public Hospital, New Amsterdam...	129	143	146
Public Hospital, Suddie ...	84	74	72

125. It will be noted that the figure in respect of the Georgetown hospital is steadily increasing. A daily average of well nigh six hundred cases is a tax upon the existing establishment of medical officers for this institution.

126. The cost per caput per diem of patients treated, exclusive of medical officers' salaries, was :—

	1932. Cents.	1933. Cents.	1934. Cents.
Public Hospital, Georgetown ...	71.	66.9	62.0
Public Hospital, New Amsterdam...	74.8	70.2	70.5
Public Hospital, Suddie ...	71.9	70.7	72.5
Public Hospital, Bartica ...	77.2	83.6	74.2
Public Hospital, Mabaruma ...	73.9	54.8	79.7

127. For many years the hospitals have been the training schools for nurses. During the year 97 nurses and midwives were trained. The following Table shows the number who qualified by examination :—

Hospital.	(First Examination) Probationers.	(Final Examination) Nurses.	Midwives.	Total.
Georgetown ...	26	14	18	58
New Amsterdam ...	2	...	7	9
Suddie	1	...	...	1
Total ..	29	14	25	68

OPHTHALMIC DEPARTMENT.

128. The staff consists of :—

Government Ophthalmologist.
Two nurses.
Clerk.

129. The total number of cases treated during the year was 4,046 as against 3,511, for the previous year.

130. The following Table shows the distribution :—

Public Hospital.	In-Patients.						Out-Patients.					
	Paying.			Pauper.			Paying.			Pauper.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Georgetown	23	13	36	120	98	218	654	570	1,224	1,132	986	2,118
New Amsterdam ...	1	1	2	6	5	11	104	106	210	84	101	185
Suddie	...	...	...	2	2	4	9	8	17	11	10	21
Total	24	14	38	128	105	233	767	684	1,451	1,227	1,097	2,324

131 The following surgical operations were performed :--

	Public Hospital, Georgetown.	Public Hospital, New Amsterdam.	Public Hospital, Suddie.
Senile Cataract ...	82	...	...
After Cataract ...	3	...	...
Congenital Cataract ..	1	...	...
Traumatic Cataract ...	1	...	...
Discission of lens ...	3	...	...
Pterygium ...	21	8	1
Chronic Glaucoma ...	3	...	...
Entropion ...	3	...	...
Iridectomy ...	6	...	...
Dacryocystitis ...	6	...	...
Enucleation ...	4	...	...
Evisceration ...	5	...	...
Papilloma of Conjunctiva ...	3	...	...
Coloboma of Eyelid ...	1	...	...
Dermoid Cyst of Orbit ...	4	...	...
Tattooing of Cornea ...	1	...	...
Suturing of Eyelid ...	1	...	...
Widening of Socket ...	1	...	...
Tarsal Cyst ...	...	5	...
Tumour of Eyelid ..	...	1	...
Total ...	149	14	1

132. In addition 113 minor operations were performed at the out-patient department of the Public Hospital, Georgetown.

133. The number of cases refracted and prescribed glasses was 268.

134. Several cases were treated at the Leprosy Hospital.

135. The revenue derived from all sources was $1,063.42 as compared with $1,638 in 1933.

DENTAL DEPARTMENT—GEORGETOWN HOSPITAL.

136. The staff consists of :—

Two Dental Surgeons (Part-time).
Clerk.
Assistant nurse.

137. During the year Dr. J. R. Heilbron performed the duties of both the senior and the junior Dental Surgeon.

138. The number of out-patients was 7,235 as compared with 6,346 in 1933. 3,794 were pauper cases (1,479 males, 2,315 females) and 3,441 poverty cases (1,674 males, and 1,767 females).

139. The revenue collected amounted to $500.28 compared with $463.80 for the previous year.

140. *Dental Treatment of School Children.*—A sum of $960 was voted on the 1934 Estimate for the dental treatment of children attending Primary Schools in Georgetown. The clinics were conducted as in the previous year by Dr. H. Whyte Cameron and Dr. J. L. S. Murray, Dental Surgeons. The schools assigned to Dr. Cameron were the Government School, Lodge (Congregational), Smith's Church (Congregational), St. Philip's (Anglican), and Werk-en-rust (Methodist), while Dr. Murray was given charge of the Bedford (Methodist) and Bourda (Roman Catholic) Schools.

141. The work done was as follows:—

By Dr. Cameron—	
Prophylactic treatment	243
Extractions	800
Amalgam fillings	222
Cement fillings	62
Gutta Percha fillings	2
By Dr. Murray—	
Prophylaxis	145
Extractions	490
Amalgam fillings	86
Porcelain fillings	11
Gutta Percha Filling	1
Pulp Cappings	3
Root Canal treatments and temporary fillings...	3
Bone surgery	6
Abscess attendances	8

142. The children attended to were accompanied by a teacher or a monitor. The treatment was well received on the whole by the children, and the dental surgeons were afforded the whole-hearted co-operation of the headmasters.

X-Ray and Electrical Department.

143. *Public Hospital, Georgetown.*—The staff of the Department consists of:—

Government Radiographer.
Assistant Government Radiographer.
Two assistant nurses.

144. Mr. E. Dalton, Government Radiographer, was on leave of absence from March 20th to October 10th during which period the assistant Radiographer took charge of the Department. The work of this department again shows a considerable increase but there was a definite drop in the number of cases sent by private practitioners with a corresponding fall in revenue. This no doubt is due to the installation of X-Ray equipment at "Colonna House" Nursing Home.

145. The total number of radiographic examinations made was 2,872 which is an increase of 653 on the total for 1933. 150 cases were sent by private practitioners and district Government medical officers, 536 from the Tuberculosis Clinic, 21 from the Georgetown Municipal Maternity and Child Welfare Centre and 2,165 from the Public Hospital, Georgetown. The examinations are classified hereunder:—

Alimentary Tract (Barium Meals etc.)	409
Colon (Barium Enemas)	16
Chests	921
Urinary Tracts	30
Gall Bladder	112
Teeth	28
Miscellaneous (Fractures, etc.)	1,356
Total ...	2,872

146. The number of radioscopic examinations made during the year was 1,120 as against 632 in 1933.

147. *X-Ray Treatment.*—40 cases were treated and 181 exposures made against 42 cases and 254 exposures in 1933. 16 were sent by private practitioners and

Government medical officers in the districts and 24 were from the Public Hospital, Georgetown. The nature of the cases was as follows :—

Keloids	...	...	3
Rodent Ulcers	...	...	12
Enlarged Spleens	...	...	2
Papilloma	...	...	2
Filaria	...	...	1
Mycosis	...	...	1
Lupus	...	...	1
Depilations	...	...	2
Carcinoma	...	...	1
Tumours	...	...	1
Myelogenous Leukæmia	...	...	1
Warts	...	...	4
Goitre	...	...	1
Acne Vulgaris	...	...	1
Nodular Eruptions	...	...	1
Enlarged Glands	...	...	1
Ulcers	...	...	1
Melanosarcoma	...	...	1
Interstitial Keratitis	...	..	1
Uterine Hæmorrhage	...	...	1
Whooping Cough	...	...	1
			40

148. *Electrical Treatment.*—The number of cases thus treated again shows a slight increase. There were 277 patients and 6,727 treatments were given. 23 were sent by private practitioners and Government medical officers in the districts.

149. The revenue collected during the year was $1,143.08 as against $1,294.65 in 1933.

150. *Public Hospital, New Amsterdam.*—The nature of the radiographic examinations was as follows :—

Chests	...	...	22
Dental Films	...	...	2
Miscellaneous	...	...	116
			140

151. No cases were treated by X-Rays.

152. The revenue collected was $47.30 as against $84.62 for 1933.

TABLE 2.

PUBLIC HOSPITALS.

	Georgetown.			New Amsterdam.			Suddie.			Bartica.			Mabaruma.			Kamakusa.			Potaro.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Accommodation	332	246	578	92	69	161	45	47	92	10	9	19	15	15	30	8	...	8	6	...	6
Patients remaining in Hospital—1st January, 1934	308	235	543	85	53	138	42	33	75	16	3	19	12	4	16	...	...	...	1	...	1
Patients admitted during the year ...	7,498	5,616	13,114	1,550	1,242	2,792	1,185	944	2,129	358	129	487	276	244	520	29	2	31	70	...	70
Total	7,806	5,851	13,657	1,635	1,295	2,930	1,227	977	2,204	374	132	506	288	248	536	29	2	31	71	...	71
Patients discharged—cured	982	995	1,977	153	107	260	173	276	449	49	19	68	67	61	128	7	..	7	6	...	6
,, ,, relieved ...	5,039	3,328	8,367	1,102	882	1,984	812	471	1,283	267	85	352	176	153	329	19	1	20	59	...	59
,, ,, not relieved ...	616	662	1,278	95	96	191	55	40	95	28	5	33	4	9	13	2	1	3	4	...	4
,, ,, not sick ...	59	64	123	13	26	39	20	66	86	3	8	11	2	9	11	...	...	...	...	...	...
,, ,, died ...	823	584	1,407	201	132	333	118	91	209	20	10	30	30	10	40	1	...	1	2	...	2
Patients remaining in Hospital—31st December, 1934	287	218	505	71	52	123	49	33	82	7	5	12	9	6	15	...	...	...	...	...	...
Total Patients treated ...	7,806	5,851	13,657	1,635	1,295	2,930	1,227	977	2,204	374	132	506	288	248	536	29	2	31	71	...	71
The daily average number in Hospital during the year 1934	334	259	593	91·7	54·1	145·8	42·67	29·34	72·01	11·97	4·71	16·68	11·84	9·82	21·66	·48	·02	·5	·1	...	·1
Average stay in days of Patients discharged during the year 1934 ...	16	16	16	22·6	16·4	19·8	10·4	8·9	9·65	11·50	12·77	12·31	14.73	14·31	14·53	6·28	4	6·13	6·07	...	6·07
Average stay in days of Patients remaining on 31st December, 1934 ...	59	38	50	25·8	30·2	27·7	11·	11·8	11·4	23·42	11·2	19·16	14·88	31·83	21·66	...	...	...	1.	...	1·
Average stay in days of Patients died	19	17	18	13·9	7·9	11·6	8·3	8·1	8·2	3·7	11·7	6·36	11·	12·	11·3	·2	...	·2	5.	...	5·
Percentage of Mortality on number treated	10·5	9·9	10·3	12·3	10·2	11·4	9·6	9·3	9·5	5·3	7·6	5·9	10·4	4·	7·5	3·4	...	3·2	2·8	...	2·8
Number of Out-Patients (exclusive of attendances for repeat medicines) ...	15,761	14,246	30,007	5,917	7,650	13,567	2,940	3,364	6,304	2,609	2,181	4,790	2,772	2,599	5,371	767	44	811	683	107	790

TABLE 3.

IN-PATIENTS DEPARTMENT, PUBLIC HOSPITALS, FROM 1ST JANUARY TO 31ST DECEMBER, 1934.

Class of Patients Treated.	Georgetown.	New Amsterdam.	Suddie.	Bartica.	North West District.	Kamakusa.	Potaro.
Seamen	38	...	...	...	...	...	...
Pay Patients	1,432	392	118	67	68	5	53
Policemen	226	28	8	2	...	2	...
Race :							
Europeans (other than Portuguese)...	125	18	5	5	3	...	...
Europeans (Portuguese)	556	34	38	14	11	2	...
Mixed	1,199	227	112	131	147	4	12
Blacks	6,813	1,484	617	212	80	19	52
East Indians	4,229	1,136	1,365	59	92	1	1
Chinese	98	18	1	2	2	...	...
Aboriginal Indians	94	13	66	83	201	5	6
Total	13,114*	2,930	2,204	506	536	31	71

*Exclusive of 543 patients remaining in hospital on 31st December, 1933.

OUT-PATIENT DEPARTMENT.—PUBLIC HOSPITALS.

	Georgetown.	New Amsterdam.	Suddie.	Bartica.	North West District.	Kamakusa.	Potaro.
Number of Out-Patients attended to with Pauper Certificates	20,632	5,984	4,656	3,936	5,077	...	...
Number of Out-Patients attended to with Poverty Certificates	8,157	6,321	1,644	846	294	...	...
Number of Out-Patients and casualties without Certificates	1,198	1,262	4	8	..	811	...
Number of Out-Patients treated during the year (exclusive of repeats)	30,007	13,567	6,304	4,790	5,371	811	790
Number of Government Employees attended to as Out-Patients	2,189	341	51	69	25	28	16
Number of Prescriptions dispensed for In-Patients	89,897	26,642	1,753	1,165	5,901	44	71
Number of Prescriptions dispensed for Out-Patients	41,182	18,754	8,057	6,377	7,982	851	838

TABLE 4.

HOSPITALS—GEORGETOWN, NEW AMSTERDAM, SUDDIE, BARTICA, NORTH-WESTERN DISTRICT, KAMAKUSA AND POTARO.

Return of Diseases (Out-Patients) and of Diseases and Deaths (In-Patients) for the year 1934.

DISEASES.	P.H., Georgetown.				P.H., New Amsterdam				P.H., Suddie.				P.H., Bartica.				P.H., N.W.D.				P.H., Kamakusa.				P.H., Potaro.				Totals.			
	Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
I.—*Epidemic, Endemic, and Infectious Diseases.*																																
1. Enteric Group—																				1											134	41
(a) Typhoid Fever	...	...	89	23	...	...	34	14	...	...	10	3	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
(b) Paratyphoid A	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
(c) Paratyphoid B	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
(d) Paratyphoid C	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(e) Type not defined	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
2. Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3. Relapsing Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4. Undulant Fever	...	...	...	...	...	...	...	...	..	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...
5. Malaria—																																
(a) Benign Tertian	...	25	21	195	2	...	...	120	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25	21	315	2
(b) Quartan	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
(c) Sub-Tertian	...	1	...	19	4	...	...	15	8	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	34	12
(d) Chronic Malaria	...	420	327	255	28	...	...	86	5	...	...	...	113	61	29	2	9	14	18	3	2	..	...	...	...	...	...	...	549	402	388	38
(e) Blackwater	...	...	...	3	2	...	...	2	...	...	3	1	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	10	3
(f) Unclassified	..	1,280	1,388	1,037	45	1,169	1,355	66	6	990	1,103	326	42	512	325	49	4	621	616	106	4	104	5	2	...	173	31	40	1	4,849	4,823	1,626	102
6. Small-Pox—																																
Alastrim	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7. Measles	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	..	...
8. Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9. Whooping-Cough	...	...	2	...	...	2	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	4	1	...
10. Diphtheria	...	...	...	34	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	34	4
11. Influenza	...	4	3	6	...	1	...	...	...	26	7	4	...	2	...	...	...	...	...	...	...	14	6	...	...	...	...	...	...	47	16	10	...
12. Miliary Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13. Mumps	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
14. Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15. Epidemic Diarrhœa	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16. Dysenteric Group—																																
(a) Amœbic	...	2	2	32	1	...	...	8	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	40	3
(b) Bacillary	...	...	...	2	...	..	...	5	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	1
(c) Unclassified	...	27	15	85	22	10	13	2	...	10	7	9	4	27	12	34	2	1	2	6	...	2	...	...	...	...	...	1	...	77	50	136	28
17. Plague	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18. Yellow Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19. Spirochætosis ictero-hæmorrhagica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20. Leprosy—																																
(a) Nodular	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
(b) Anæsthetic	...	...	...	5	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...
(c) Mixed	...	...	...	13	...	...	...	3	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21	...
21. Erysipelas	...	1	...	1	1	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	2
22. Acute Poliomyelitis	...	...	...	5	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	1
23. Encephalitis Lethargica	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	..

TABLE 4—(Continued).

HOSPITALS—GEORGETOWN, NEW AMSTERDAM, SUDDIE, BARTICA, NORTH-WESTERN DISTRICT, KAMAKUSA AND POTARO.

Return of Diseases (Out-Patients) and of Diseases and Deaths (In-Patients) for the year 1934.

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	Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients		In-Patients		Out-Patients.		In-Patients.	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
I.—*Epidemic, Endemic and Infectious Diseases—(Contd.)*																																
24. Epidemic Cerebro-Spinal Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25. Other Epidemic Diseases—																																
(a) Rubeola (German Measles)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
(b) Varicella (Chicken Pox)	...	...	2	19	...	...	...	3	...	...	...	...	...	...	...	...	4	3	3	...	...	...	...	...	...	...	...	...	4	5	25	..
(c) Dengue	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...
(d) Epidemic Dropsy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(e) Yaws	...	6	1	3	...	...	...	...	...	...	3	...	4	...	...	...	121	111	1	...	...	...	...	...	...	...	...	...	131	11	7	...
26. Glanders	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27. Anthrax	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28. Rabies	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29. Tetanus	...	...	1	21	5	...	...	10	3	...	1	1	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	2	32	8
30. Mycosis	...	...	...	1	...	...	...	...	...	5	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	2	1	..
31. Tuberculosis—																																
Pulmonary and Laryngeal	...	39	27	350	106	7	7	52	14	4	14	23	5	13	15	5	...	1	1	3	2	...	...	...	...	...	...	1	...	64	64	434	127
32. Tuberculosis of the Meninges or Central Nervous System	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
33. Tuberculosis of the Intestines or Peritoneum	...	...	...	8	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	6
34. Tuberculosis of the Vertebral Column	...	1	...	7	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	7	1
35. Tuberculosis of Bones and Joints	...	...	...	3	...	...	...	1	..	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	4	...
36. Tuberculosis of other Organs—																																
(a) Skin or Subcutaneous Tissue (Lupus)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(b) Bones	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
(c) Lymphatic System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	..
(d) Genito-Urinary	...	...	...	1	1	...	...	...	...	..	...	...	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
(e) Other Organs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
37. Tuberculosis disseminated—																																
(a) Acute	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(b) Chronic	...	...	..	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
38. Syphilis—																																
(a) Primary	...	92	11	73	...	27	6	12	...	1	...	...	...	25	2	6	...	5	3	5	...	...	...	...	...	...	...	1	...	151	22	96	...
(b) Secondary	...	32	7	17	...	13	1	10	...	3	2	7	...	3	...	...	...	4	2	2	...	...	...	...	...	...	...	1	...	56	13	36	...
(c) Tertiary	...	322	362	589	44	56	56	61	5	6	3	1	1	34	28	10	...	1	...	3	...	...	...	...	...	...	...	...	...	419	441	664	50
(d) Hereditary	...	22	56	58	15	8	6	3	...	...	1	...	...	...	3	...	...	..	...	1	...	...	...	...	...	...	...	...	...	30	66	62	15
(e) Period not indicated	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	[illegible]	...	...	...	...	...	6	3	...
39. Soft Chancre	...	40	4	43	1	...	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	4	...	...	44	4	46	1

TABLE 4.—(Continued).

HOSPITALS—GEORGETOWN, NEW AMSTERDAM, SUDDIE, BARTICA, NORTH-WESTERN DISTRICT, KAMAKUSA AND POTARO.

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DISEASES.	P. H., Georgetown.				P.H., New Amsterdam				P. H., Suddie.				P. H., Bartica.				P. H., N.W.D.				P. H., Kamakusa.				P.H., Potaro.				Totals.			
	Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
I.—*Epidemic, Endemic and Infectious Diseases—(Contd.)*																																
40. A. Gonorrhœa and its complications	624	76	513	13	132	29	24	1	46	5	70	...	114	14	16	...	7	...	1	...	29	...	3	...	22	...	...	...	974	124	627	14
B. Gonorrhœal Ophthalmia	...	...	12	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	...
C. Gonorrhœal Arthritis	...	...	16	1	...	...	32	...	...	...	...	...	12	2	5	...	10	3	...	...	...	...	...	...	...	...	...	...	22	5	53	1
D. Granuloma Venereum	16	6	72	9	8	5	14	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	24	11	88	10
41. Septicæmia	...	..	11	10	...	...	1	1	...	...	...	...	...	1	1	...	...	...	3	2	...	...	..	...	4	1	2	...	4	2	18	13
42. Other Infectious Diseases—Trypanosomiasis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	2,955	2,311	3,603	345	1,434	1,481	574	62	1,091	1,146	465	56	865	455	158	8	785	755	156	12	157	11	7	...	204	34	43	1	7,491	6,193	5,006	484
II.—*General Diseases not mentioned above.*—																																
43. Cancer or other malignant Tumours of the Buccal Cavity	2	...	6	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	7	1
44. Cancer or other malignant Tumours of the Stomach or Liver	7	3	34	12	...	...	4	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	3	38	15
45. Cancer or other malignant Tumours of the Peritoneum, Intestines, Rectum	1	2	10	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	10	5
46. Cancer or other malignant Tumours of the Female Genital Organs	...	3	42	8	...	...	7	3	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	51	11
47. Cancer or other malignant Tumours of the Breast	...	...	8	2	...	...	2	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	2
48. Cancer or other malignant Tumours of the Skin	...	1	9	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	9	2
49. Cancer or other malignant Tumours of Organs not specified	4	1	16	11	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	17	12
50. Tumours non-malignant	2	4	43	1	...	...	4	...	1	...	...	...	3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	6	47	1
51. Acute Rheumatism	...	...	...	...	...	...	...	...	5	3	...	...	...	...	...	...	50	15	5	...	...	...	...	...	2	2	...	...	64	20	5	...
52. Chronic Rheumatism	85	109	11	...	83	109	7	...	42	92	...	...	108	97	6	...	60	32	...	...	19	...	1	...	...	1	...	...	397	449	27	...
53. Scurvy (including Barlow's disease)	1	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	3	...
54. Pellagra	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
55. Beri-Beri	...	1	5	...	...	...	..	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	6	...
56. Rickets	..	1	...	...	1	...	2	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	...
57. Diabetes (not including Insipidus)	4	9	46	8	20	22	10	1	1	...	2	2	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	26	32	59	11
58. Anæmia—																																
(a) Pernicious	...	1	25	10	...	...	...	...	...	...	2	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	28	12
(b) Other Anæmias and Chlorosis	51	87	45	6	94	187	22	1	9	24	1	1	52	49	1	1	22	11	3	...	3	...	1	...	...	...	...	...	231	358	73	9
59. Diseases of the Pituitary Body	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

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	Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
II.—*General Diseases not mentioned above—(Contd.)*																																
60. Diseases of the Thyroid Gland—																																
(a) Exophthalmic Goitre	...	2	1	..	...	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	1
(b) Other Diseases of the Thyroid Gland—Myxoedema	...	4	7	...	...	1	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	7	...
61. Diseases of the Para-Thyroid Glands	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...
62. Diseases of the Thymus	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
63. Diseases of the Supra-renal Glands	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
64. Diseases of the Spleen	1	3	1	...	9	5	...	...	...	..	...	...	1	...	...	...	...	...	..	...	...	...	...	...	8	...	...	...	14	8	1	...
65. Leukaemia—																																
(a) Leukaemia	...	...	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1
(b) Hodgkin's Disease	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
66. Alcoholism	2	...	25	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	55	...	28	...
67. Chronic poisoning by mineral substances (lead, mercury, etc.)	...	...	1	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
68. Chronic poisoning by organic substances (Morphia, Cocaine, etc.)	..	...	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
69. Other General Diseases—																																
(a) Auto-intoxication	...	1	3	1	...	...	1	1	...	...	3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	7	4
(b) Purpura Haemorrhagica	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
(c) Haemophilia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(d) Diabetes Insipidus	..	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	..	2	...
Total	161	234	344	68	207	324	64	11	58	121	12	7	164	156	9	1	132	58	10	...	22	...	2	...	13	3	...	...	757	896	441	87
III.—*Affections of the Nervous System and Organs of the Senses.*																																
70. Encephalitis (not including Encephalitis Lethargica)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
71. Meningitis (not including 24 or 32)	...	...	14	13	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	14
72. Tabes Dorsalis	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
73. Other affections of the Spinal Cord	...	...	1	...	...	...	...	...	2	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	8	1	...
74. Apoplexy—																																
(a) Haemorrhage	3	4	28	23	...	...	8	8	...	...	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	54	4	39	32
(b) Embolism	...	...	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2
(c) Thrombosis	...	...	1	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	1
(d) Unclassified	...	..	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
75. Paralysis—																																
(a) Hemiplegia	40	25	81	12	16	5	15	1	3	4	9	1	4	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	65	34	110	14
(b) Other Paralyses	14	10	33	...	38	42	11	2	7	20	11	1	5	4	...	...	2	1	1	...	...	...	...	...	...	...	...	...	66	77	56	3

TABLE 4—(Continued).

HOSPITALS—GEORGETOWN, NEW AMSTERDAM, SUDDIE, BARTICA, NORTH-WESTERN DISTRICT, KAMAKUSA AND POTARO.

Return of Diseases (Out-Patients) and of Diseases and Deaths (In-Patients) for the year 1934.

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	Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
III.—*Affections of the Nervous System and Organs of the Senses.*—(Contd.)																																
76. General Paralysis of the Insane	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
77A. Mania and Melancholia	...	2	25	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	30	...
B. Delusional Insanity	...	...	7	...	...	...	1	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	...
C. Other forms of Mental Alienation	12	22	164	...	2	2	18	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	14	26	183	...
78. Epilepsy	14	12	30	...	10	3	3	...	6	7	1	...	6	8	2	...	2	3	1	...	1	...	...	...	...	...	...	...	39	33	37	...
79. Eclampsia, Convulsions (non-puerperal) 5 years or over	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	8	...	...	...	...	...	...	...	...	...	...	6	8	...	...
80. Infantile Convulsions (non-malarial)	...	...	...	...	3	7	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	6	7	2	...
81. Chorea	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
82. A.—Hysteria	3	10	20	...	...	1	1	...	...	...	...	...	...	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	11	21	...
B.—Neuritis	45	42	11	...	24	40	4	...	...	...	3	...	11	11	...	...	...	1	1	...	...	...	...	...	1	1	...	...	81	95	19	..
C.—Neurasthenia	27	30	12	...	...	4	4	...	...	...	2	...	2	1	...	...	10	12	...	...	...	...	...	...	6	...	...	...	45	37	18	...
D.—Neuralgia	61	145	7	...	16	50	5	...	4	16	5	...	9	3	...	...	14	16	...	...	1	...	...	...	14	1	...	...	119	235	17	...
83. Cerebral Softening (including Abscess of Brain)	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	1	1
84. Other Affections of the Nervous System	23	39	23	...	...	...	...	...	...	...	2	...	12	12	4	...	4	26	...	...	5	...	1	..	4	3	1	...	48	89	31	...
85. Affections of the Organs of Vision—																																
(a) Cataract	95	97	112	...	30	30	...	...	...	4	...	...	2	1	1	...	3	...	...	...	...	...	...	...	...	...	...	...	130	132	113	...
(b) Conjunctivitis	116	97	41	..	22	32	4	...	13	19	4	...	9	13	...	...	47	38	8	...	3	1	...	...	6	1	...	...	216	201	57	...
(c) Corneal Ulcer	71	43	70	...	20	14	8	...	1	...	...	...	...	...	...	...	6	12	3	...	...	...	...	...	...	...	...	...	98	59	81	...
(d) Glaucoma	27	27	14	...	7	9	...	..	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	37	36	14	..
(e) Iritis	49	22	11	...	5	7	...	...	...	...	1	...	1	...	...	...	...	12	...	...	1	...	...	...	...	...	...	...	56	31	12	..
(f) Keratitis	43	28	9	...	10	15	6	...	3	...	..	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	57	45	15	...
(g) Ophthalmia	15	11	4	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	11	5	...
(h) Optic Neuritis	38	43	7	...	5	11	...	...	...	2	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	43	61	7	...
(i) Pterygium	18	51	24	...	9	12	9	...	...	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	29	66	34	...
(j) Other Affections of the Eye	534	447	92	...	187	199	12	...	2	2	4	...	8	4	2	...	4	13	...	...	...	...	...	...	17	...	...	...	752	665	110	...
86. Affections of the Ear or Mastoid Sinus...	79	68	58	1	40	52	18	...	...	...	15	...	12	5	...	...	3	5	1	..	3	...	...	...	4	...	...	...	141	130	92	1
Total ...	1,330	1,278	901	50	455	535	138	15	45	82	67	2	83	64	15	...	103	118	16	1	14	1	1	..	54	6	1	...	2,084	2,084	1,139	68
IV.—*Affections of the Circulatory System.*																																
87. Pericarditis	...	2	3	2	...	...	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	5	3
88. Endocarditis—																																
(a) Acute	...	...	7	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	5
(b) Chronic	25	18	54	12	2	6	12	3	..	..	...	...	...	...	...	...	...	...	3	3	...	...	...	...	...	...	...	...	27	24	69	18
(c) Unclassified	21	20	17	3	...	...	2	...	...	2	16	...	7	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	28	24	35	3
89. Angina Pectoris	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...

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	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
IV.—Affections of the Circulatory System.—(Contd.)																																
90. Other Diseases of the Heart—																																
A.—Valvular																																
(a) Mitral ...	8	5	27	8	3	12	4	12	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	11	7	32	11
(b) Aortic ...	6	8	18	7	9	3	7	2	...	...	...	...	2	3	1	...	4	1	1	...	...	...	...	...	...	...	...	...	21	15	27	9
(c) Tricuspid ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(d) Pulmonary ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
B.—Myocarditis ...	22	17	104	57	38	48	28	9	1	3	5	2	8	11	5	3	...	...	...	...	...	...	...	...	...	...	...	...	69	79	142	71
C.—Unclassified ...	28	27	32	13	46	58	11	4	9	13	24	7	15	12	1	...	7	7	7	1	3	...	...	...	2	...	...	...	110	117	85	25
91. Diseases of the Arteries—																																
(a) Aneurism ...	11	8	25	6	5	...	2	...	...	...	...	...	3	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	12	27	6
(b) Arterio-sclerosis ...	48	60	40	14	18	44	4	2	5	4	...	...	10	8	1	1	7	2	5	...	...	...	...	...	...	...	...	...	88	118	50	17
(c) Other Diseases ...	15	9	18	2	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	9	25	2
92. Embolism or Thrombosis (non-cerebral)	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
93. Diseases of the veins—																																
(a) Haemorrhoids ...	154	55	123	...	36	27	47	...	4	4	9	...	12	1	4	...	2	...	...	...	3	...	1	...	...	...	...	...	211	87	184	...
(b) Varicose Veins ...	1	4	5	...	...	1	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	6	5	...
(c) Phlebitis ...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	...
94. Diseases of the Lymphatic System—																																
(a) Filariasis ...	105	122	188	11	22	81	32	1	11	17	9	...	30	50	15	1	1	5	1	...	12	2	1	...	5	1	...	...	186	278	244	13
(b) Filarial Bubo ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(c) Elephantiasis ...	4	6	17	1	1	26	...	...	...	...	4	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	32	21	4
(d) Lymphangitis, lymphadenitis (non-filarial) ...	89	53	67	...	52	47	19	...	13	6	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	156	106	87	...
(e) Unclassified ...	...	...	...	...	...	...	...	...	6	6	8	...	23	12	1	...	...	...	1	...	...	...	...	...	...	...	...	...	29	18	11	...
95. Haemorrhage of undetermined cause ..	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4	...
96. Other affections of the Circulatory System	1	...	1	...	...	...	...	...	...	...	...	...	1	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2	4	1	...
Total ...	539	415	750	142	230	343	175	24	51	55	79	12	111	106	28	5	21	17	30	5	20	2	2	...	7	1	...	...	979	939	1,064	188
V.—Affections of the Respiratory System—																																
97. Diseases of the Nasal Passages—																																
(a) Adenoids ...	1	...	5	...	1	...	3	...	...	...	3	...	...	...	...	...	3	2	...	...	...	...	...	...	...	...	...	...	5	2	11	...
(b) Polypus ...	1	4	5	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	4	2	...
(c) Rhinitis ...	32	27	4	...	4	8	3	...	3	5	...	...	...	3	...	...	5	5	...	...	...	...	...	...	1	...	...	...	44	48	6	...
(d) Coryza ...	12	23	8	...	31	37	...	...	7	13	...	...	72	51	1	...	15	21	...	...	...	...	...	...	1	...	...	...	138	145	9	...
(e) Other diseases of nasal passages ...	19	37	24	...	3	9	2	...	...	...	7	...	5	9	...	...	...	...	...	...	...	...	...	...	2	...	...	...	29	75	33	...
98. Affections of the Larynx—																																
Laryngitis ...	15	20	10	...	5	20	2	1	...	...	2	...	18	18	1	...	4	3	1	...	...	...	...	...	2	...	...	...	44	61	16	

TABLE 4—(Continued).

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DISEASES.	P. H., Georgetown.				P.H., New Amsterdam				P. H., Suddie.				P. H., Bartica.				P. H., N.W.D.				P. H., Kamakusa.				P.H., Potaro.				Totals.			
	Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
V.—*Affections of the Respiratory System.*—(*Contd.*)																																
99. Bronchitis—																																
(a) Acute	18	7	54	7	3	...	33	12	...	...	6	...	6	6	...	...	114	110	...	...	...	...	...	...	6	...	...	...	147	123	93	19
(b) Chronic	216	124	346	70	672	670	77	10	39	57	11	...	218	151	9	...	36	32	10	...	17	...	...	...	3	...	...	...	1 291	1,034	453	80
(c) Undifferentiated	972	908	154	7	...	...	18	...	271	314	62	9	...	...	7	3	392	340	5	...	82	4	...	...	21	5	...	...	1,738	1,571	246	19
100. Broncho-pneumonia	...	1	57	35	...	...	29	19	...	...	1	1	...	...	...	...	...	...	4	2	...	...	...	...	...	...	1	...	...	1	92	57
101. Pneumonia—																																
(a) Lobar	1	...	64	48	...	...	16	8	...	...	2	2	...	...	3	2	...	...	7	4	...	...	...	...	...	...	...	...	1	...	92	64
(b) Unclassified	4	1	20	13	...	...	2	2	...	...	8	7	6	4	2	...	6	4	8	5	...	...	...	...	...	...	4	1	16	9	44	28
102. A. Pleurisy	13	3	41	1	26	5	6	...	2	...	2	2	5	1	1	...	2	...	1	...	1	...	...	...	...	...	...	...	49	9	51	3
B. Empyema	...	...	6	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	6	4
103. Congestion of the Lungs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
104. Gangrene of the Lungs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
105. Asthma	177	82	110	9	88	67	50	4	182	85	48	2	16	16	5	1	78	15	8	1	2	...	...	...	2	...	...	...	545	265	221	17
106. Pulmonary Emphysema	...	1	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	4	1
107A. Asphyxia	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
B. Other affections of the Lungs	9	12	26	10	46	38	5	1	3	3	...	...	3	3	2	1	2	4	1	...	9	1	...	...	13	2	...	...	85	63	34	12
Total	1,491	1,250	938	205	879	854	248	57	507	477	153	23	349	262	31	7	657	536	45	12	111	5	...	...	50	7	5	1	4,044	3 391	1,420	305
VI.—*Diseases of the Digestive System.*																																
108A. Diseases of Teeth or Gums—Caries, Pyorrhœa, &c.	75	53	64	...	87	99	6	...	3	3	6	...	13	11	2	...	...	4	...	...	18	3	1	...	33	4	...	...	229	177	79	...
B. Stomatitis	54	41	17	...	4	1	1	...	12	8	...	..	12	4	1	...	1	2	...	..	...	...	...	...	...	...	...	...	83	56	19	...
C. Glossitis, &c.	2	1	2	...	10	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	14	4	2	...
D. Other affections of the Mouth	5	1	2	...	...	...	2	...	2	4	10	...	5	...	...	...	3	4	...	..	...	...	...	...	2	...	...	...	17	9	14	...
109. Affections of the Pharynx or Tonsils—																																
(a) Tonsilitis	67	109	174	...	43	70	18	...	13	9	12	...	5	11	...	...	2	3	...	...	3	...	...	...	4	...	...	...	137	202	204	...
(b) Pharyngitis	59	65	19	...	18	17	6	1	5	14	5	...	1	3	...	...	7	6	...	...	...	...	...	...	3	...	...	...	84	105	30	1
110. Affections of the Œsophagus	2	1	3	...	2	8	1	...	...	...	2	1	...	...	...	..	...	...	...	...	...	..	...	...	...	...	...	...	4	9	6	1
111A. Ulcer of the Stomach—																																
(a) Gastric	21	13	12	1	1	...	...	..	9	12	...	...	7	7	1	...	1	1	2	...	...	...	...	...	...	...	...	...	59	33	15	1
(b) Pyloric	1	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	4	...
B. Ulcer of the Duodenum	75	24	69	6	3	...	1	...	1	1	...	...	12	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	91	25	74	6
112. Other affections of the Stomach—																																
(a) Gastritis	21	18	16	3	55	91	22	...	26	49	10	1	15	20	3	...	10	8	4	...	5	...	...	...	5	3	1	...	137	189	56	4
(b) Dyspepsia	191	255	35	...	113	233	8	...	58	177	7	...	169	233	1	...	105	155	5	...	18	...	...	...	17	3	...	...	671	1,056	56	...
(c) Other affections of the Stomach	14	12	8	...	1	...	2	...	...	...	17	1	5	5	2	...	8	7	5	2	30	7	...	...	5	6	1	...	63	37	35	3

Table 4—(Continued).

HOSPITALS—GEORGETOWN, NEW AMSTERDAM, SUDDIE, BARTICA, NORTH WESTERN DISTRICT, KAMAKUSA AND POTARO.

Return of Diseases (Out-Patients) and of Diseases and Deaths In-Patients for the Year 1934.

Diseases.	P.H., Georgetown.				P.H., NewAmsterdam				P.H., Suddie.				P.H., Bartica.				P.H., N.W.D.				P.H., Kamakusa.				P.H., Potaro.				Totals.			
	Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
VI.–Diseases of the Digestive System— (Continued)																																
113A. Diarrhœa and Enteritis—Under two years	60	43	17	10	72	74	29	12	...	...	12	2	19	22	...	...	13	9	3	1	...	...	...	...	...	...	...	...	164	148	61	25
B. Diarrhœa and Enteritis—Two years and over	167	109	273	83	64	61	56	21	...	...	37	13	28	19	6	1	27	28	4	1	...	...	...	...	...	...	...	...	286	268	376	121
C. Unclassified Diarrhœa and Enteritis	...	...	...	...	...	...	...	...	52	34	10	3	...	...	1	...	...	...	1	...	24	...	...	...	3	1	...	...	79	35	12	3
114A. Colitis	4	1	7	1	8	4	1	...	11	7	...	...	4	1	2	...	7	5	...	...	4	...	...	...	6	...	1	...	39	18	11	1
B. Ulceration	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
C. Sprue	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
115. Ankylostomiasis	45	11	80	8	20	17	2	...	49	34	6	...	1	2	...	...	17	15	2	...	...	...	...	...	1	...	...	...	133	79	90	8
116. Diseases due to Intestinal Parasites—																																
(a) Cestoda (Taenia)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(b) Trematoda (Flukes)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(c) Nematoda (other than Ankylostoma)—																																
Ascaris	3	2	17	3	6	17	...	...	...	...	...	...	20	15	...	...	6	4	9	...	...	...	...	...	...	...	...	...	35	38	26	3
Trichocephalus dispar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichina	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dracunculus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Strongylus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Oxyuris	...	...	1	...	15	4	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	6	1	...
(d) Coccidia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(e) Other Parasites	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(f) Unclassified	108	107	16	...	...	...	...	...	33	25	...	...	59	69	...	...	200	203	1	1	2	...	...	...	2	...	...	...	406	404	17	1
117. Appendicitis—																																
(a) Acute	...	...	15	2	...	...	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	3
(b) Sub-acute and chronic	...	2	21	1	...	...	2	...	...	...	1	1	1	5	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	7	27	2
(c) Unclassified	3	1	20	3	...	...	7	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	23	5
118. Hernia	61	...	196	5	3	...	42	1	...	...	7	2	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...	66	...	248	8
119. A. Affections of the Anus, Fistula, &c	7	9	40	...	1	1	15	...	...	1	5	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	1	...	9	11	63	...
B.—Other affections of the Intestines—																																
(a) Enteroptosis	...	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...
(b) Constipation	235	388	77	...	134	336	15	...	37	68	4	1	63	149	2	...	63	86	4	...	33	4	...	...	4	3	...	...	569	1,034	97	1
(c) Other affections	12	9	49	15	2	2	11	2	11	5	9	2	...	...	...	...	...	...	2	...	2	...	...	...	...	...	...	...	34	16	71	19
120. Acute Yellow Atrophy of the Liver	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
121.—Hydatid of the Liver	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
122. Cirrhosis of the Liver—																																
(a) Alcoholic	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(b) Other forms	1	1	22	16	...	...	1	...	...	...	2	2	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	5	1	29	18
123. Biliary Calculus	10	11	17	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	10	11	18	2

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	Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patient-		Out-Patients		In-Patients		Out-Patients.		In-Patients.	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
VI.—*Diseases of the Digestive System*—(Continued).																																
124. Other affections of the Liver—																																
(a) Abscess ...	...	...	3	3	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	7	3
(b) Hepatitis ...	5	4	14	3	19	13	16	1	...	...	7	2	4	3	1	...	17	21	1	...	4	...	...	...	...	...	...	...	49	41	39	6
(c) Cholecystitis ...	15	17	63	...	...	...	...	...	4	2	..	...	2	2	...	...	4	2	2	1	...	...	...	...	...	...	...	...	25	23	65	1
(d) Jaundice ...	13	2	4	1	24	15	1	...	8	10	...	...	6	1	2	..	...	...	...	...	...	...	1	1	...	...	...	...	51	28	10	2
125. Diseases of the Pancreas ...	...	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1
126. Peritonitis (of unknown cause) ...	...	...	3	3	...	...	4	3	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	7
127. Other affections of the Digestive System	38	60	18	...	...	...	...	...	...	...	...	...	...	...	...	...	15	20	...	...	23	3	...	...	9	1	...	...	85	84	18	...
Total ...	1,365	1,361	1,398	172	705	1,066	271	43	336	464	172	31	455	584	41	3	502	583	49	6	175	17	2	1	96	21	7	...	3,634	4,096	1,940	256
VII.—*Diseases of the Genito-Urinary System (non-Venereal)*—																																
128. Nephritis—																																
(a) Acute ...	...	3	16	2	...	...	1	1	...	1	6	1	1	...	1	...	5	...	2	...	...	...	.	...	6	1	...	...	12	5	26	4
(b) Chronic (129) ...	54	33	212	70	40	21	51	28	...	...	57	6	22	32	4	...	...	...	1	...	...	...	...	...	1	...	1	...	117	86	326	104
(c) Uraemia ...	...	...	10	9	...	...	2	1	...	...	11	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	12
(d) Unclassified ...	64	181	36	7	67	97	25	...	91	83	102	32	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	22	361	163	39
130. A. Chyluria (Non-filarial) ...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
B. Schistosomiasis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
131. Other affections of the Kidneys—Pyelitis, etc. ...	4	7	12	5	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	7	15	5
132. Urinary Calculus ...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
133. Diseases of the Bladder—Cystitis ...	29	31	25	6	30	36	16	4	12	14	3	...	20	14	2	...	2	2	2	1	1	...	..	...	2	...	...	...	96	97	48	11
134. A. Diseases of the Urethra—																																
(a) Stricture ...	9	...	6	1	23	...	18	1	...	...	6	...	7	...	10	...	...	...	...	...	2	...	...	...	1	...	...	...	42	...	40	2
(b) Other ...	6	1	5	...	14	10	39	3	35	6	4	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	61	17	48	3
B. Other Diseases of the Genito-Urinary System ...	23	40	21	...	144	82	...	...	1	3	13	4	27	17	2	...	6	5	1	1	2	...	...	..	7	2	...	...	210	149	37	5
135. Diseases of the Prostate—																																
(a) Hypertrophy ...	4	...	33	8	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	4	...	35	9
(b) Prostatitis ...	...	...	2	...	2	...	3	...	...	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	8	1
136. Diseases (non-venereal) of the Genital Organs of Man—																																
(a) Epididymitis ...	...	...	2	...	...	...	...	...	...	...	...	...	4	...	...	...	..	...	..	...	...	...	...	...	...	...	...	...	4	...	2	...
(b) Orchitis ...	81	...	35	...	62	1	8	...	6	..	4	...	7	...	1	...	...	...	2	...	12	...	1	...	6	...	...	...	174	1	51	...
(c) Hydrocele ...	553	...	151	1	20	...	32	...	4	...	2	...	5	...	2	...	2	...	1	...	2	...	...	...	...	...	...	...	586	...	191	1
(d) Ulcer of Penis ...	3	...	2	...	7	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	12	...	10	...
(e) Phimosis and Paraphimosis ...	34	...	97	..	12	...	35	...	12	...	...	...	30	...	...	...	...	...	...	...	1	..	...	...	1	...	...	...	45	...	141	...
(f) Other ...	19	...	59	...	4	...	21	1	2	1	...	...	30	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	29	1	86	1

TABLE 4.—(Continued).

HOSPITALS—GEORGETOWN, NEW AMSTERDAM, SUDDIE, BARTICA, NORTH-WESTERN DISTRICT, KAMAKUSA AND POTARO.

Return of Diseases (Out-Patients) and of Diseases and Deaths (In-Patients) for the year 1934.

DISEASES.	P.H., Georgetown.				P.H., New Amsterdam				P.H., Suddie.				P.H., Bartica.				P.H., N.W.D.				P.H., Kamakusa.				P.H., Potaro.				Totals.			
	Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
VII.—Diseases of the Genito-Urinary System (non-Venereal)—Continued.																																
137. Cysts or other non-malignant Tumours of the Ovaries	...	1	12	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	14	...
138. Salpingitis	...	9	155	6	...	6	8	1	...	...	4	...	...	13	3	...	...	3	1	...	...	...	...	...	...	...	...	...	31	171	7
139. Uterine Tumours (non-malignant)	...	6	57	1	...	...	9	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	6	67	1
140. Uterine Hæmorrhage (non-puerperal)	...	1	2	...	...	1	...	...	...	...	...	...	...	4	1	...	...	8	2	...	...	1	...	...	...	...	...	...	15	5	...
141. A. Metritis	...	2	14	...	...	6	9	...	...	...	...	...	...	...	...	...	...	3	1	...	...	...	...	...	...	...	...	...	11	24	...
B. Other affections of the Female Genital Organs—																																
(a) Displacements of the Uterus	...	7	26	...	...	...	...	...	...	...	...	...	...	7	...	...	...	6	2	...	...	...	...	...	...	...	...	...	20	28	...
(b) Amenorrhœa	...	33	1	...	...	149	2	...	...	6	6	...	...	33	...	...	...	3	...	...	...	1	...	...	...	...	...	...	220	9	...
(c) Dysmenorrhœa	...	24	7	...	...	63	12	...	...	5	1	...	...	7	...	...	...	18	...	...	...	1	...	...	...	4	...	...	122	20	...
(d) Leucorrhœa	...	76	32	...	...	207	5	...	...	69	4	...	...	51	1	...	...	14	2	...	...	...	...	...	...	2	...	...	419	44	...
(e) Other Affections	...	94	81	4	...	177	47	1	...	13	3	1	...	55	...	...	...	7	4	...	...	...	1	...	...	...	...	...	346	136	6
142. Diseases of the Breast (Non-puerperal)—																																
(a) Mastitis	...	24	9	...	...	25	8	...	...	1	5	...	...	5	...	...	...	3	2	...	...	...	...	...	...	...	...	...	58	24	...
(b) Abscess of Breast	...	4	37	1	...	2	5	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	6	43	1
Total	883	577	1,160	121	415	883	364	41	173	202	249	47	101	238	37	1	18	72	24	2	27	3	4	...	24	9	1	...	1,621	1,384	1,839	212
VIII.—Puerperal State.—																																
143. A.—Accidents of Pregnancy—																																
(a) Abortion	...	17	77	1	...	24	16	...	...	1	8	...	...	3	5	...	...	3	5	...	...	...	...	...	...	1	...	...	49	111	...
(b) Ectopic Gestation	...	...	6	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	1
(c) Pregnancy (non-delivery)	...	28	212	...	...	218	26	...	...	5	...	...	...	21	2	...	...	21	2	...	...	1	...	...	...	...	...	...	294	242	...	
(d) Other Accidents of Pregnancy	...	...	3	...	...	3	20	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	28	1
B. Normal Labour	...	...	839	...	...	...	180	...	...	...	70	...	...	1	13	...	...	...	30	...	...	...	...	...	...	...	...	...	1	1,129	...
C.—Accidents of Parturition—																																
(a) Sequelæ of Labour (149)	...	...	...	...	...	...	2	1	...	...	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	1
(b) Other Accidents of Parturition (145)	...	...	9	6	...	...	4	2	...	...	8	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	22	10
D.—Accidents of the Puerperium—																																
(a) Puerperal Hæmorrhage (144)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(b) Puerperal Septicæmia (146)	...	1	14	8	...	...	6	4	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	21	13
(c) Phlegmasia Dolens (147)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(d) Puerperal Eclampsia (148)	...	...	15	11	...	...	6	3	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	15
(e) Puerperal Affections of the Breast (150)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(f) Other Accidents of the Puerperium	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	3	...	
Total	...	46	1,166	27	...	245	262	11	...	6	90	3	...	29	21	1	...	25	39	...	...	1	...	...	...	1	...	...	353	1,578	42	

TABLE 4—(Continued.)

HOSPITALS—GEORGETOWN, NEW AMSTERDAM, SUDDIE, BARTICA, NORTH-WESTERN DISTRICT, KAMAKUSA AND POTARO.

Return of Diseases (Out-Patients) and of Diseases and Deaths (In-Patients) for the Year 1934.

Diseases.	P.H., Georgetown				P.H., New Amsterdam				P.H., Suddie				P.H., Bartica				P.H., N.W.D.				P.H., Kamakusa.				P.H., Potaro.				Totals.			
	Out-Patients.		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases	Deaths
IX.—Affections of the Skin and Cellular Tissues—																																
151. Gangrene ...	2	...	20	7	...	...	6	2	...	...	1	1	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	33	10
152. Carbuncle ...	8	2	22	1	1	1	3	...	...	...	2	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	11	3	28	1
152a. Sinus ...	12	8	32	...	2	1	11	..	7	...	10	...	...	...	6	...	1	1	1	...	...	...	...	...	...	...	...	...	22	10	69	...
153. A. Abscess ...	347	213	537	4	28	29	80	3	13	9	154	...	21	9	25	...	19	8	30	...	11	...	1	...	7	...	2	...	446	276	829	7
B. Whitlow ...	8	5	3	...	1	...	2	...	...	...	1	...	...	...	...	...	2	1	...	...	1	...	...	...	1	...	...	...	13	6	6	...
C. Cellulitis ...	32	22	87	3	91	70	56	5	1	2	18	2	9	2	3	...	2	...	2	...	1	...	1	...	1	...	...	...	137	96	167	10
154. A. Tinea ...	13	21	4	...	3	3	1	...	...	...	...	...	6	3	...	...	2	7	...	...	3	...	...	...	...	...	...	...	27	34	5	...
B.—Scabies ...	61	35	7	...	82	38	10	...	30	18	17	..	7	3	1	...	20	11	1	...	2	...	1	...	...	...	...	...	202	105	37	...
155. Other Diseases of the Skin—																																
(a) Erythema ..	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
(b) Urticaria ...	...	...	...	...	3	...	...	...	...	...	1	...	1	...	...	...	8	4	...	...	1	...	...	...	...	...	...	...	13	4	1	...
(c) Eczema ...	60	67	11	...	13	3	1	...	28	20	4	...	23	8	2	...	16	16	1	...	4	...	...	...	...	...	...	...	144	114	19	...
(d) Herpes ...	5	6	9	...	...	2	...	...	...	...	4	...	1	...	...	...	...	...	...	...	1	...	...	...	14	...	...	...	21	8	13	...
(e) Psoriasis ...	3	...	...	...	...	...	...	...	17	5	...	...	...	...	1	...	7	1	...	...	...	...	...	...	...	...	...	...	27	6	1	...
(f) Myiasis ...	...	...	5	4	...	1	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	7	5
(g) Chigoes ...	...	...	3	...	1	...	2	...	1	1	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	14	...
(h) Ulcers ...	361	135	377	12	165	82	104	...	216	96	72	2	56	21	10	1	182	130	33	...	29	...	...	...	25	1	...	...	1,034	465	586	15
(i) Other Skin Affections ...	284	187	122	2	80	105	35	...	23	12	28	...	35	32	8	...	44	34	2	...	39	...	...	...	...	...	...	...	505	370	195	2
Total ...	1,196	703	1,239	33	470	335	312	11	336	163	322	5	159	79	62	1	305	213	71	...	92	...	3	...	48	1	2	...	2,606	1 494	2,011	56
X.—Diseases of Bones and Organs of Locomotion (other than Tuberculosis)—																																
156. Diseases of Bones—																																
Osteitis and Osteomyelitis ...	8	2	55	5	...	3	9	...	...	...	3	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	9	5	67	5
157. Diseases of Joints—																																
(a) Arthritis ...	293	181	122	1	78	90	9	...	48	62	2	...	56	34	3	...	21	15	3	...	1	...	...	...	...	...	...	...	497	382	139	1
(b) Synovitis ...	20	17	53	...	45	50	9	...	3	1	5	...	9	6	3	...	4	...	...	...	3	...	...	...	2	1	1	...	86	75	51	...
158. Other Diseases of Bones or Organs of Locomotion ...	217	201	66	...	307	367	42	...	121	136	...	..	12	2	2	...	7	13	3	...	26	...	...	...	31	...	...	...	721	719	113	...
Total ...	538	401	276	6	430	510	69	...	172	199	10	...	77	42	8	...	33	28	6	...	30	...	...	...	33	1	1	...	1,313	1,181	370	6
XI.—Malformations—																																
159. Malformations:—																																
(a) Hydrocephalus ...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	..	...	...	..	...	...	1	1
(b) Hypospadias ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
(c) Spina Bifida, &c. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(d) Unclassified ...	1	3	18	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	19	...
Total ...	2	3	19	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	21	1

TABLE 4—(Continued.)

HOSPITALS—GEORGETOWN, NEW AMSTERDAM, SUDDIE, BARTICA, NORTH WESTERN DISTRICT, KAMAKUSA AND POTARO.

Return of Diseases (Out-Patients) and of Diseases and Deaths (In-Patients) for the Year 1934.

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	Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases	Deaths
XII.—*Diseases of Infancy*—																																
160. Congenital Debility	2	...	90	71	11	7	19	13	...	...	6	2	2	2	2	1	...	...	...	...	...	...	...	...	...	...	...	...	15	9	117	87
161. Premature Birth	...	1	20	17	...	...	17	17	...	...	6	3	...	...	1	1	1	1	1	...	...	...	...	...	...	...	...	...	1	2	45	38
162. Other Affections of Infancy	2	1	5	2	...	...	4	2	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	4	3	9	4
163. Infant Neglect (infants of three months or over)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	4	1	...	...	...	...	...	...	...	...	1	...	4	1
Total	4	2	115	90	11	7	40	32	...	...	12	5	2	2	3	2	4	3	5	1	...	...	...	...	...	...	...	...	21	14	175	130
XIII.—*Affections of Old Age*—																																
164. Senility—																																
(a) Senile Dementia	...	...	17	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	2
(b) Senile Debility	36	36	231	68	51	47	23	6	119	381	41	4	4	14	1	1	6	...	1	...	...	...	...	...	...	...	1	...	216	478	298	79
Total	36	36	248	70	51	47	23	6	119	381	41	4	4	14	1	1	6	..	1	...	...	...	...	...	...	...	1	..	216	478	315	81
XIV.—*Affections produced by External Causes*—																																
165. Suicide by Poisoning	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
166. Corrosive Poisoning (Intentional)	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2
167. Suicide by Gas Poisoning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	.	...	...	...	...	...	...	...	...	...	...	...	...	...
168. Suicide by hanging or strangulation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
169. Suicide by drowning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
170. Suicide by firearms	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
171. Suicide by cutting or stabbing instruments	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
172. Suicide by jumping from a height	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...
173. Suicide by crushing	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
174. Other suicides	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
175. Food Poisoning—																																
(a) Botulism	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(b) Other	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
176. Attacks of poisonous animals—																																
(a) Snake bite	1	1	10	...	2	1	7	1	...	...	1	1	2	...	9	...	...	...	2	...	...	...	...	...	...	...	2	...	5	2	31	2
(b) Insect bite	10	2	3	...	...	...	...	...	1	...	6	...	...	...	...	...	2	1	...	...	...	...	...	...	1	...	1	...	14	3	10	...
(c) Unclassified	19	13	4	...	...	2	3	...	1	...	4	...	2	...	...	...	1	1	1	...	...	...	...	...	...	...	2	...	23	16	12	...
177. Other accidental poisonings	1	3	18	3	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	4	19	3
178. Burns (by fire)	9	7	29	2	1	1	2	...	...	...	...	5	2	...	2	...	1	1	3	...	1	...	...	...	...	...	...	...	14	9	48	2
179. Burns (other than by fire)	5	4	56	6	2	2	9	1	...	...	...	...	3	2	2	...	...	1	...	...	...	...	...	...	...	...	...	...	10	9	67	7
180. Suffocation (accidental)	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
181. Poisoning by gas (accidental)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
182. Drowning (accidental)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
183. Wounds (by firearms, war excepted)	...	...	6	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	7	1

TABLE 4.—(Continued).

HOSPITALS—GEORGETOWN, NEW AMSTERDAM, SUDDIE, BARTICA, NORTH-WESTERN DISTRICT, KAMAKUSA AND POTARO.

Return of Diseases (Out-Patients) and of Diseases and Deaths (In-Patients) for the Year 1934.

DISEASES.	P.H. Georgetown.				P.H., New Amsterdam.				P.H., Suddie.				P.H. Bartica.				P.H., N.W.D.				P.H. Kamakusa.				P.H., Potaro.				Totals			
	Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients		In-Patients		Out-Patients.		In-Patients.	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
XIV.—*Affections produced by External Causes*—(Contd.)																																
184. Wounds (by cutting or stabbing instruments) ...	9	3	48	3	101	79	67	...	25	7	102	1	51	18	45	...	30	11	28	...	12	...	2	...	17	2	...	...	245	120	292	4
185. Wounds (by fall) ...	3	3	4	...	...	...	...	...	...	1	5	...	...	...	...	...	...	...	2	...	...	...	..	...	3	...	...	...	6	4	11	...
186. Wounds (rupture of internal organs) ...	...	...	6	6	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	7
187. Wounds (by machinery) ...	...	...	1	...	...	...	...	...	...	...	3	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...
188. Wounds (crushing, e.g., railway accidents, &c.) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
189. Contusions—injuries inflicted by animals, &c. ...	..	...	...	...	...	...	2	...	3	5	56	...	...	...	...	...	19	6	10	...	...	...	...	...	...	...	...	...	22	11	68	..
190. Wounds inflicted on active service ...	.	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
191. Executions of civilians by belligerents.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
192. A.—Over fatigue ...	...	...	.	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
B.—Hunger or Thirst ...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
193. Exposure to Cold, Frost-bite, &c. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	2	...	...
194. Exposure to Heat—																																
(a) Heatstroke ...	...	.	...	...	...	...	...	...	..	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(b) Sunstroke ...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.	...	...	...	...	...	...	...	...	...	...	...
195. Lightning stroke ...	...	...	.	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
196. Electric Shock ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
197. Murder by Firearms ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
198. Murder by Cutting or Stabbing Instruments ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
199. Murder by other means ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
200. Infanticide (Murder of an infant under one year) ...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
201. A.—Dislocation ...	15	...	8	...	...	...	4	...	...	...	8	.	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	16	...	21	...
B.—Sprain ...	80	33	65	...	12	7	7	...	...	...	10	...	11	5	...	...	10	6	...	...	2	...	...	...	4	2	...	...	119	53	8*	...
C.—Fracture ...	70	22	268	11	14	5	46	2	8	...	71	.	6	1	8	..	...	..	3	1	...	...	1	...	...	...	..	..	98	28	397	14
202. Other external injuries ...	1,121	435	402	2	80	53	124	...	7	12	50	...	42	21	5	...	15	12	6	...	26	...	7	...	30	2	5	...	1,324	535	597	2
203. Deaths by Violence of unknown cause ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	1,346	526	931	37	212	150	279	4	45	25	322	3	120	47	73	...	80	39	57	1	41	...	10	...	55	7	8	...	1,899	794	1,689	45
XV.—Ill-Defined Diseases.																																
204. Sudden Death (cause unknown) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
205. A.—Diseases not already specified or ill-defined—																																
(a) Ascites ...	...	1	2	...	2	1	3	1	...	...	23	2	...	...	..	...	...	...	...	...	1	...	...	...	...	...	...	...	3	2	30	3
(b) Œdema ...	28	42	3	...	38	55	3	1	10	24	6	2	12	15	...	...	1	...	...	...	5	...	...	...	...	...	...	...	94	136	12	3

TABLE 4—(Continued).

HOSPITALS—GEORGETOWN, NEW AMSTERDAM, SUDDIE, BARTICA, NORTH-WESTERN DISTRICT, KAMAKUSA AND POTARO.

Return of Diseases (Out-Patients) and of Diseases and Deaths (In-Patients) for the Year 1934.

DISEASES.	P.H., Georgetown.				P.H., New Amsterdam.				P.H., Suddie.				P.H., Bartica.				P.H., N.W.D.				P.H., Kamakusa.				P.H., Potaro.				Totals.			
	Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.		Out-Patients.		In-Patients.	
	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	C.	D.	M.	F.	Cases.	Deaths
XV.—Ill-Defined Diseases.—(Contd.).																																
205. —A.—Diseases not already specified or ill-defined—(Contd.)																																
(c) Asthenia ...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
(d) Shock ...	...	...	20	...	..	...	1	...	...	...	...	...	..	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22	...
(e) Hyperpyrexia ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	40	...	...	...	...	...	...	...	...	...	...	16	40	...	...
(f) Debility (excluding 160 & 164(b)) ...	323	399	260	41	155	270	57	13	...	..	93	7	105	88	7	...	64	85	6	...	48	2	...	...	99	16	2	...	794	860	425	61
B.—Malingering ...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	351	442	286	41	195	326	66	15	10	24	124	11	117	103	8	...	81	125	6	...	54	2	...	...	99	16	2	...	907	1,038	492	67
XVI.																																
A.—Ophthalmic Department (Out-patients) ...	Included under 85 (a)—(j)				...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
B.—Dental Department (O.P.) ...	3,153	4,082	...	...	...	...	...	...	9	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3,162	4,084	...	...
C.—Casualties (O.P.) ...	... *	... *	...	...	223	544	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	223	544	...	..
D.—Not Sick ...	23	15	128	...	...	...	43	...	...	...	86	...	2	...	11	...	33	13	21	...	...	...	...	...	...	...	...	...	58	28	289	...
E.—Undiagnosed ...	388	564	155	...	...	...	...	...	8	17	...	...	...	...	...	...	12	14	...	...	24	2	...	...	...	...	...	...	432	597	155	...
Total ...	3,564	4,661	283	...	223	544	43	..	17	19	86	...	2	...	11	...	45	27	21	..	24	2	...	...	...	...	...	...	3,875	5,253	444	...
Totals, Sections I.—XVI. ...	15,761	14,246	13,657	1,467	5,917	7,650	2,930	333	2,940	3,364	2,204	209	2609	2181	506	30	2772	2599	536	40	767	44	31	1	683	107	71	2	31,449	30,191	19,935	2,022
Attendances for Repeat Medicines ...	8,658	10,519	...	...	2,728	3,550	...	...	898	855	...	...	932	655	...	...	274	254	...	...	70	10	...	...	36	12	...	...	13,596	15,855	...	...
GRAND TOTAL	24,419	24,765	13,657	1,467	8,645	11,200	2,930	333	3,838	4,219	2,204	209	3541	2836	506	30	3046	2853	536	40	837	54	31	1	719	119	71	2	45,045	46,046	19,935	2,022

*Classified under 153A and B, 184, 185, 187, 201A–C, 202, and 205 (f).

Table 5.

RETURN OF SURGICAL OPERATIONS.

Operations.	Public Hospital, Georgetown.		Public Hospital, New Amsterdam.		Public Hospital, Suddie.		Public Hospital, Bartica.		Public Hospital, Mabaruma.		Public Hospital, Kamakusa.		Public Hospital, Potaro.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Head and Neck ...	176	2	48	...	20	...	...	...	...	2	...	...	...	...
Upper Extremity ...	106	...	57	1	4	...	...	...	...	3	...	...	...	...
Lower Extremity ...	125	4	50	2	7	...	...	...	...	5	...	...	...	...
Thorax	24	2	6	3	1	...	...	...	...	1	...	...	...	...
Abdomen	496	30	108	5	20	...	...	...	...	4	...	...	...	...
Back and Vertebrae ...	3	...	2	...	...	...	...	...	...	...	...	...	...	...
Genito-Urinary System ...	388	15	127	1	9	...	7	...	...	3	...	..	...	...
	1,318	53	378	12	61	...	7	..	...	18	...	...	...	...

Public Dispensaries.

153. In addition to the out-patient dispensaries attached to each of the public hospitals in Georgetown, New Amsterdam, Suddie, Bartica, Mabaruma, Kamakusa and Potaro and the Government public dispensary at Charles Street, Georgetown, there are thirteen Government dispensaries in the charge of qualified dispensers situated in the more remote and populous river districts and in the diamond and gold-fields. In the majority of these outlying dispensaries, the work done by the dispenser is supervised by the Government medical officer of the adjoining district.

154. The following Table gives the number of cases treated, with expenditure and revenue :—

Dispensary.	Paying Patients.			Police Patients.			Pauper Patients.			Expenditure.	Revenue.
	New Cases.	Repeats.	Total.	New Cases.	Repeats.	Total.	New Cases.	Repeats.	Total.		
No. 1 Charles Street	3,188	5,391	8,579	...	...	...	3,114	11,422	14,536	$ 2,132 33	$ 2,061 48
Leguan	1,748	82	1,830	44	13	57	520	182	702	1,012 40	465 04
Demerara River (Christianburg) ...	772	61	833	52	6	58	1,628	107	1,735	1,175 08	351 92
Berbice River (Ida Sabina) ...	81	1	82	...	...	...	488	11	499	1,145 02	37 04
Pomeroon River (Charity) ...	560	160	740	8	...	8	4,863	738	5,601	1,465 98	241 50
Essequebo (Supenaam) ...	807	186	993	...	...	...	836	88	984	1,580 15	301 68
Mcruca River (Aequero) ...	2	...	2	...	...	...	1 701	84	1,785	1,303 14	74
Canal No. 2 Polder	824	30	854	...	...	...	245	37	282	884 01	210 48
Canal No. 1 Polder	762	31	793	...	...	...	68	14	82	*	187 44
Mara	133	37	170	23	9	32	2,476	65?	3,108	613 81	224 55
Enachu	76	28	104	9	4	13	502	190	692	†	99 24
Wakenaam	1,272	617	1,889	39	21	60	282	150	432	564 00	503 24
Anna Regina	111	4	115	45	2	47	7,517	1,659	9,176	804 00	26 88
Parika	245	15	260	...	...	...	134	18	152	‡	59 30

* Supplies are obtained from Canal No. 2 Polder Dispensary.
† Supplies are obtained from Public Hospital, Kamakusa.
‡ Supplies are obtained from Leguan Dispensary.

155. Free medicines are supplied to a number of Aboriginal Indian Stations at a cost of $212.24.

V.—The Mental Hospital.

156. The following information is derived from the annual report of the medical superintendent of the Mental Hospital :—

157. The daily average number of patients was 712 (males 382, females 330) compared with 764 in 1933. There were 97 admissions (males 51, females 46) as against 93 in 1933. With the 728 patients (389 males, 339 females) remaining on

January 1st a total of 825 cases were treated during the year. The admissions from the three counties were :—

County.	Males.	Females.	Total.
Demerara	35	33	68
Berbice	13	11	24
Essequebo	3	2	5
Total	51	46	97

158. The admissions classified as to the countries of origin were :—

Country.	Males.	Females.	Total.
British Guiana	46	41	87
India	1	...	1
Barbados	1	2	3
Dutch Guiana...	1	1	2
Trinidad	1	1	2
Jamaica	...	1	1
St. Lucia	1	...	1
Total	51	46	97

159. The causes of unsoundness of mind in the cases admitted were :—

Causes.	Males.	Females.	Total.
Domestic worries ...	14	17	31
Poverty and want ...	11	13	24
Recurrence ...	11	7	18
Senility ...	...	2	2
Menopause ...	...	1	1
Religious Excitement ...	1	1	2
Syphilis ...	3	2	5
Adolescence ...	1	...	1
Congenital ...	2	2	4
Epilepsy ...	3	...	3
Falariasis ...	1	...	1
Tuberculosis ...	1	...	1
Alcoholism ...	1	...	1
Irregular Life ...	...	1	1
Not insane ...	2	...	2
Total ...	51	46	97

160. The causes of unsoundness of mind and the number under the various headings remain fairly constant. Domestic worries with poverty and want accounted for 56 per cent. of the total admissions. Recurrence is fairly high—18.55 per cent. Syphilis as a cause was on the increase in 1934.

161. The chief types of unsoundness of mind were delusional insanity (28) cases, melancholia (17), mania (12), epileptic insanity (3), congenital insanity (4), and dementia of various forms including senile dementia (12).

162. There were 35 discharges (males 21, females 14) compared with 59 in 1933, and the total number of patients under treatment at the end of the year was 39 less than at the end of 1933.

163. The number of patients who recovered was 35, representing 24 less than in 1933. Out of 51 males and 46 females admitted, 9 males and 7 females were discharged, *i.e.*, equivalent to 16.49 per cent. of recoveries as against 23.6 per cent. in 1933.

164. The number of deaths was 101 (50 males and 51 females), contrasted with 55 in 1933 and the mortality rate was 12.24 per cent. as against 6.5 per cent. in 1933. Of the 97 admissions 15 died within one year of admission—7 males and 8 females, *i.e.*, 15.46 per cent. of the total admissions.

165. The principal causes of death were general debility, malaria, pulmonary tuberculosis, diarrhœa and pneumonia. The mortality for the year under review

was much higher than that of 1933. General debility accounted for 42 per cent. of the total deaths, many old patients dying off. The number of deaths from malaria (11) was high, considerably higher than it has been for some time. In 1934, however, mosquitoes were not unduly prevalent. Cerebral conditions were a fairly prominent cause, and so was syphilis, but only among the male patients. There was one death from acute infectious disease, namely, enteric fever.

166. The chief diseases treated were malaria, pulmonary tuberculosis and other chest conditions, filariasis, diarrhœa, dysentery, Bright's disease and general debility.

167. The expenditure for the year was $66,187.29 compared with $68,331.11 in 1933, and the revenue $1,937.44 compared with $1,820.78 in 1933.

168. The per caput cost per diem was 24.7 cents as against 23.8 in 1933.

169. Over 56 per cent. of the patients were engaged in some form of occupation and the value of their labour in such occupations as baking, gardening, tailoring, shoemaking, washing, printing, carpentry, woodcutting, etc., was estimated at $25,066.13.

170. The Table below furnishes the accommodation in the various wards of the hospital with classification as to type of patient :—

Division.	No.	Name of Block.	Accommodation.		Class of Patients.
			Authorised.	Actual Number of Patients Treated.	
Male ...	417	"A"	23	20	Trusted.
		B and C and Single Rooms ...	82*	79 (19 sleeping in Annexe).	Dangerous and refractory.
		D Lower	71	60	Chronic Creole.
		D Upper	74	66	Chronic East Indian.
		E Lower	38	33	Quiet East Indian.
		E Upper	41	37	Quiet East Indian.
		G Male Infirmary ...	55	43	Sick and infirm.
		Criminal Annexe ..	33*	30 368 and 1 boy in Female Infirmary.	Criminal.
Female ...	321	Victoria "A ...	67	67	Chronic Creole.
		Victoria "B" ...	66	60	Chronic East Indian.
		Single Rooms ...	28	28	Dangerous and dirty.
		Central Block ...	81	87	Doubtful and dirty.
		Female Infirmary ...	54	56	Sick and infirm.
		Dorcas (cottage) ...	25	23 321†	Convalescent and trusted.
			738	689	

* 19 patients from B. and C. sleeping in the Annexe.
† One small boy included here.

171. Structural improvements, alterations and additions were effected in the Victoria block, B and C blocks (male refractory wards), the north block, the medical superintendent's quarters, the Dorcas cottage and the criminal annexe, and in the bakery and laundry, while three septic tanks were installed and the concrete sluice and connections renovated.

172. Accommodation generally throughout the Mental Hospital is inadequate, more particularly is this the case in the female division, where the number of patients continues to encroach on the number of male cases. Both refractory blocks are overcrowded, and there is urgent need for more single rooms for patients of both sexes.

VI.—Prisons.

173. The general health of prisoners in the Georgetown, New Amsterdam and Mazaruni prisons continued to be sa tisfactory and no abnormal incidence of sickness occurred.

174. The daily average number of prisoners in the Georgetown prison, and the daily average number in the prison hospital was 226 and 4, respectively. 157 were admitted to the prison hospital during the year of whom 14 were transferred to the public hospital, Georgetown. 30 prisoners were under observation for mental diseases, of whom 3 were admitted to the Mental Hospital. There were 4 deaths: three were judicial executions and one was from osteomyelitis.

175. The following table shows the hospitalization, etc., of prisoners in the other prisons:—

Prison.	Average daily number of prisoners.	Average daily number in prison hospital.	Total number of admissions.	Number of Deaths.	Number transferred to Public Hospitals.	Number transferred to Mental Hospital.
New Amsterdam...	63	...	...	...	1	...
Mazaruni ...	40	...	...	...	16*	Nil

*One prisoner was admitted three times. Two prisoners were admitted twice.

176. The principal diseases treated were malaria, filariasis, diarrhœa and abscesses. The total number of out-patient attendances was 3,417 compared with 2,809 in 1933.

177. The sanitary condition of buildings, latrines and grounds was satisfactorily maintained.

VII.—Mining—Mazaruni Diamond Fields.

178. The resident staff consists of:—

1 Senior Dispenser.
2 Junior Dispensers.
1 Mechanic for motor engine.
2 Boathands.
1 Scavenger.

179. The hospital of eight beds, with a dispensary, is situated at the headquarters station, Kamakusa. An out-station dispensary under the charge of a dispenser is maintained at Enachu. The senior and junior dispensers continued to make routine inspections of their districts. In February, 1935, a tour of inspection of the area was carried out by Dr. Pollard, Government medical officer, with special reference to the general health of the community; malaria, venereal and other prevalent diseases, the sanitation of Government buildings and mining camps, food shops, and anti-malaria measures.

180. The average mining population of the district during the year was 2,493.

181. The general health throughout the area has been satisfactory. Dysentery cases have been much less as compared with past years; this is no doubt due to the improved sanitary conditions of camps and dwellings.

182. An increase in the incidence of venereal diseases is recorded: 62 cases were treated as against 31 in 1933.

183. The number of deaths registered during the year was 35 compared with 51 in 1933. The causes were malaria 5, bright's disease 2, pneumonia 2, apoplexy 2, drowning 4, jaundice 1, accidental shooting 1, murder 1, other cases 17.

184. The rainfall in the district was 141.83 inches compared with 138.79 inches in 1933.

185. Sanitation has been fairly well maintained and with persuasion nuisances were usually abated.

VIII.—Sugar Estates.

186. There are thirty-one sugar plantations, twenty-three of which provide and maintain hospitals and dispensaries for their labour forces, employing their own dispensers, nurses and midwives. The arrangement whereby the proprietors of seventeen estates engage their own medical officers to attend certain members of their staffs and families and the proprietors of three estates have their full-time medical officer in charge of all medical and sanitary work, continued throughout the year and operated satisfactorily. A valuable report by Dr. Giglioli on the work done during 1934 on the Blairmont, Bath and Providence sugar plantations appears as appendix II.

187. General health conditions were similar to those which prevailed throughout the colony as a whole, *i.e.*, while there was no specific outbreak of disease following the floods, the morbidity and mortality rates of the prevalent diseases already enumerated in this report were increased.

188. The number of births for the year 1934 was 1,631 while the number of deaths recorded was 1,114. Owing to the failure of three large sugar estates to supply statistics of their population during 1934 it has not been found possible to calculate the birth-rate and the general death-rate for the year under review.

189. The untoward effects of the sequelae of the flood are exhibited in an increased maternal mortality and infant mortality rate. There were 30 maternal deaths making 18.4 the number per thousand births compared with 15.8 in 1933.

190. Hospitals and dispensaries were on the whole satisfactorily maintained taking economic conditions into consideration. The hospital at Springlands was closed for in-patients at the end of January ; Skeldon hospital which is near, accommodates cases for both plantations. The Government medical officer, however, continues to conduct out-patient and child welfare clinics at Springlands, where there is still a resident midwife. Vryheid's Lust and De Kinderen hospitals had become unfit for the reception of patients and were well rebuilt along as modern lines as necessary and practicable for the purposes they serve. In several cases existing hospital buildings are in need of reconstruction and renovation and it is hoped that those in charge will follow this example. In the course of inspections stress has been laid on the importance of maintaining adequate equipment and of keeping proper records of cases treated.

191. The total number of cases treated in estate hospitals was 20,049 and the number of deaths 827. The corresponding figures for 1933 were 21,651 and 970 respectively. The principal diseases treated correspond to those met with in Government hospitals. The following table furnishes the number of malaria cases and deaths in hospitals during 1934 for the counties of Berbice and Demerara separately and for all the estates of the colony for the past four years.

County.	Cases Malaria.	Deaths Malaria.
Berbice ...	1,344 ...	39
Demerara ...	6,066 ...	82
British Guiana—		
1934 ...	7,410 ...	121
1933 ...	6,826 ...	128
1932 ...	7,029 ...	86
1931 ...	4,751 ...	61

192. A comparison of cases of, and deaths from enteric fever and "other intestinal diseases" (including dysentery and enteritis) in the counties of Berbice and

Demerara during 1934 is given below with corresponding figures for the colony estates as a whole for the past three years.

County.	Enteric Fever.		Other Intestinal Diseases.	
	Cases.	Deaths.	Cases.	Deaths.
Berbice	34	7	244	15
Demerara	122	21	1,007	72
British Guiana—				
1934	156	28	1,251	87
1933	126	30	1,007	70
1932	105	16	709	57

193. Maternity and Child Welfare work is proceeding satisfactorily. The great majority of estate hospitals are now in possession of maternity wards which are well patronized by mothers from the plantations.

194. In regard to sanitation in general, an endeavour to improve conditions can in most instances be recorded. Opportunity is frequently taken to remind the estate authorities concerning pure water supplies, proper systems of refuse, soil and sullage disposal, adequate drainage, anti-malaria measures, housing of the community, etc. Under the Local Government Ordinance of 1907 the sugar estates of the Colony became Rural Sanitary Districts for the purposes of the Ordinance. The position remains the same under the Public Health Ordinance of 1934.

195. The Central Board of Health established under this new Ordinance is the Local Sanitary Authority of all Rural Sanitary Districts in the Colony—unlike what obtains in village and country districts where a local sanitary authority is appointed by nomination and election. All sanitary matters on estates are thus dealt with directly by this Board, the staff of the Government Public Health Department serving as its executive body.

IX.—Alms House.

196. Accommodation is provided for 808 inmates—514 males and 294 females. The number of inmates on the 1st January, 1934, was 825—524 males and 301 females. The number admitted during the year was 564—367 males and 197 females while the daily average for the year was 836.

197. 1,338 cases were treated in the infirmary wards—874 males and 464 females. The daily average number in the infirmary wards was 350, 205 males and 145 females. The principal diseases treated were—chronic nephritis, general debility, hemiplegia, morbus cordis and ulcers.

198. 119 minor operations were performed during the year—81 males and 38 females.

199. The deaths numbered 269—151 males and 118 females, the death rate being 19.4 per cent. of the total number of inmates compared with 21.5 per cent. in 1933, and 18.2 per cent. in 1932.

200. The number of inmates remaining in the Institution on the 31st December, 1934, was 839—534 males and 305 females, the chief causes of detention being ulcers, senility, blindness, debility, arthritis, hemiplegia and asthma.

201. The following Table shows the admissions, deaths, etc., for the last ten years :—

(1) Year.	(2) Total Deaths.	(3) Total persons in Alms House during the year.	(4) Death-rate per cent.	(5) Number of cases of Diarrhœa.	(6) Number of cases of Dysentery.	(7) Number of deaths from Diarrhœa and Dysentery.
1925 ...	430	2,044	21·03	273	31	60
1926 ...	375	1,829	20·5	350	40	74
1927 ...	324	1,591	20·4	224	40	31
1928 ...	338	1,608	21·02	260	53	46
1929 ...	286	1,429	20·01	148	69	38
1930 ...	203	1,379	14·7	54	10	6
1931 ...	219	1,272	17·2	52	6	4
1932 ...	241	1,318	18·2	20	2	7
1933 ...	282	1,307	21·5	116	13	16
1934 ...	269	1,389	19.4	50	7	9

GENERAL REMARKS.

202. This institution continues to suffer from overcrowding, the daily average number of inmates exceeding the authorized accommodation by 28.

203. The wards, offices and grounds were kept in good condition throughout the year and the sanitary arrangements were satisfactory.

X.—Onderneeming Industrial School.

204. The following information is derived from the report of the medical officer which is published with that of the superintendent.

205. On the whole the general health of the boys was satisfactory.

206. The following Table shows the statistical figures for the years 1932, 1933 and 1934 :—

	1932.	1933.	1934.
Daily average number of boys in School ...	123	109	93
Daily average number of boys sick ...	1.05	1.6	1.96
Percentage of sick to daily average number of boys	.85	1.48	2.11
Percentage of ankylostome infection during the year	.8	Nil.	Nil.

207. There were 182 admissions to the infirmary during the year, with no deaths. 6 boys were treated at the public hospital, Suddie—1 for incised wound, 2 for cellulitis, 1 for adenitis, 1 for fracture and 1 for an abscess. 26 boys received prophylactic doses of anti-tetanus serum after minor injuries.

208. 19 boys were admitted to the school throughout the year. 6 contracted malaria seven months, six months, five months, one month, four days and five days after admission respectively.

209. 90 cases of malaria were recorded. Of these, 56 had one attack, 21 two attacks, 10 three attacks, and 3 four attacks.

210. The sanitary arrangements are satisfactory and sanitation was well maintained. The grounds and drains were kept in good order.

XI.—Maternity and Child Welfare.

211. The British Guiana Infant Welfare and Maternity League continued its beneficial work and extended its activities in the county of Berbice. The report of the League which was founded in 1914 is published separately and may be obtained from the secretary.

212. As in the previous year the subvention of $12,612 was granted by the Government. A donation of $272.53 was received from the Davson Centenary Fund Committee, while a further gift of $372.53 was presented by this Committee to the New Amsterdam and districts branch. From these funds seven health visitors were employed and forty-one nurse-midwives. The district government medical officer is in charge of the clinic which is a centre where expectant mothers are given advice and supervision, infants are examined and mothers are educated in the hygiene of infancy. Ante-natal treatment and the treatment of sick infants are carried out at these centres, some cases being referred to the nearest Government dispensary. There are now 61 clinics under the control of the League.

213. As already pointed out elsewhere in this report after effects of the flood led to an increased infant mortality—168 per thousand births. The average rate of this mortality for the previous ten years was 154.

214. The number of confinements attended by League nurses during the year was 2,215, and the number of live births 2,145. There were 68 still births.

215. Still births in the colony totalled 578 which is in proportion of 6 to every 100 children born alive.

216. The maternal mortality for the colony was 13.1. The figures for sugar plantations and the child welfare and maternity League were 18.4 and 7.0 respectively.

217. These statistics draw attention to the necessity for ante-natal treatment, the education of mothers, and obstetrical efficiency in the hospital and in the home.

218. Continued progress has been made in this branch of work on the part of managers of sugar plantations, assisted by their wives and other ladies on the estates. A further number of maternity wards were opened and the admissions thereto continued to increase. Infant and ante-natal clinics were conducted by Government medical officers, and estate medical officers, nurses and midwives.

219. There are maternity wards in each of the five principal hospitals of Georgetown, New Amsterdam, Suddie, Mabaruma and Bartica, as well as in the majority of sugar estate hospitals.

220. The accommodation in the public hospitals and maternity returns for 1934 are as follows :—

	Number of Beds.	Deliveries.	Deaths (Maternal).	No. of Births.	No. of Still-births.
Public Hospital, Georgetown ...	26	836	25	727	89
do. Berbice ...	8	193	7	167	26
do. Suddie ...	12	80	3	68	15
do. Mabaruma ...	1	28	...	27	1
do. Bartica ...	9	15	1	13	2

221. The total number of births registered in the Georgetown registration district and in the city of Georgetown was 1,902 and 1,680 respectively. Of this number 727 occurred in the public hospital, Georgetown.

222. Returns in respect of Maternity and Child Welfare League Clinics in 61 centres :—

Clinic Centre.	Government Medical Officer.	No. of Clinics.	No. Attendances of Infants.		No. Infants Treated.	Expectant Mothers.	
			Under 1 year.	Over 1 year.		No. Attendances.	No. Treated.
Kitty	Dr. J. E. R. Ramdeholl	25	926	230	274	163	86
Plaisance	do.	23	479	161	82	32	8
Beterverwagting	do.	25	665	247	141	40	24
Buxton	do.	24	601	169	130	36	9
Golden Grove	Dr. G. T. G. Boyce	11	172	61	62	5	2
Paradise	do.	11	115	42	46	7	2
Victoria	do.	11	146	30	50	12	1
Ann's Grove	do.	10	99	19	37	6	1
Unity	do.	10	72	7	27	5	1
Mahaica	do.	10	72	31	29	26	5
Supply	do.	11	78	14	27	12	1
De Kinderen	Dr. F. A. Viapree	11	53	0	21	6	2
Mahaicony	do.	11	179	20	62	3	...
Airy Hall	do.	11	93	0	24	12	...
Belladrum	Dr. J. A. Nicholson; Dr. E. W. Reece	22	264	45	90	7	2
No. 28 Village	do.	14	144	40	39	10	6
Hopetown	do.	14	84	14	10	12	...
No. 8 Village	do.	21	126	26	29	35	3
Rosignol	do.	24	130	15	42	42	3
Sheet Anchor	Dr. G. E. Carto	12	185	40	58	179	123
Adelphi	do.	23	172	62	60	86	55
Highbury	do.	22	134	47	54	23	11
Sandvoorte	do.	11	91	56	45	47	35
New Amsterdam	Dr. W. W. Besson	52	1,027	41	214	702	516
Mara	do.	12	59	10	11	17	3
Fyrish	Dr. W. D. Pollard; Dr. L. R. Sharples	12	412	8	21	45	10
Rose Hall	do.	12	299	16	41	106	14
Bloomfield	do.	12	334	5	49	60	14
Limlair	do.	12	364	6	43	41	8
Nos. 47 and 51 Villages	Dr. C. R. Subryan	24	360	95	36	71	19
Nos. 59, 64 & 71 Villages	do.	20	271	117	36	74	8
Nos. 76 and 79 Villages	do.	6	206	52	34	299	8
Kiltern Lodge	do.	12	93	17	15	7	...
La Penitence	Dr. Q. B. deFreitas; Dr. D. J. Taitt	26	1,067	254	366	150	32
Agricola	do.	25	360	117	154	50	10
Grove	do.	26	273	55	81	48	19
Pouderoyen	Dr. J. Nedd	10	154	43	43	63	21
Bagotville	do.	12	188	49	65	69	21
Good Intent	do.	18	87	15	21	50	4
No. 1 Canal	do.	20	89	2	50	33	2
Windsor Forest	Dr. R. N. Cozier	25	59	32	19	0	...
Den Amstel	do.	23	105	39	37	15	...
Hague	do.	18	129	59	33	2	...
Parika	do.	11	57	30	24	0	...
Leguan	do.	10	88	70	37	23	...
Marionville	Dispenser Mitchell	22	110	35	68	17	4
Zeelandia	do.	20	84	45	51	8	6
Bartica	Dr. C. Ramdeholl	20	651	309	143	29	14
Moruca	Dispenser Trotman	27	414	225	162	85	17
Pomeroon	Dr. C. R. Subryan; Dr. M. Luck	21	126	13	62	40	37
Danielstown	do.	18	137	25	59	34	5
Anna Regina	do.	30	290	37	116	70	42
Queenstown	do.	21	123	6	52	66	30
Suddie	Dr. G. M. Kerry	23	173	20	81	14	5
Riverstown	do.	24	140	11	76	10	7
Aurora	do.	24	60	2	31	14	1
Morawhanna	Dr. G. A. Grandsoult; Dr. Whitfield	34	94	132	130	5	4
		1,022	13,561	3,309	3,500	3,123	1,261

XII—Hygiene and Sanitation.

223. This report refers to the Colony in general and excludes the municipal areas of Georgetown and New Amsterdam.

1.—ADMINISTRATIVE.

Staff.

224. The authorised staff of the Department in 1934 was as follows :—

(i) *Headquarters Staff—*

Government Medical Officer of Health—B. N. V. Wase-Bailey, M.D. (Edin.), D.P.H., D.T.M. & H. (Eng.)

Assistant Government Medical Officers of Health—

J. H. Pottinger, M.B., Ch.B., D.P.H., D.T.M. & H. (Liv.)
E. Cochrane, M.B., Ch.B. (Glas.), D.P.H. (Lond.)

Head Clerk (Class III.)—C. H. Harewood.
Second Clerk (Class III.)—Miss E. Lewis.
Third Clerk (Probationer)—Miss I. Clarke.

In addition there are two disinfecting assistants who act also as photographers, draughtsmen, and messengers and carry out duties in connection with experimental and field work.

(ii) *Sanitary Staff*—

County Sanitary Inspectors.

Berbice—F. J. July, M.R. San. I.
Demerara—H. A. Moonsawmy, F.R.E.S., M.R. San. I.
Essequibo—Supervised by County Sanitary Inspector, Demerara.

In addition there are—

4 Class II. Sanitary Inspectors.
20 Class III. Sanitary Inspectors, and
6 Class IV. Assistant Sanitary Inspectors.

All hold the Local Certificate in Hygiene and Sanitation and four Class II., eleven Class III., and four Class IV. Sanitary Inspectors hold in addition the Certificate of the Royal Sanitary Institute.

Leave of Absence.

225. Dr. B. N. V. Wase-Bailey, Government Medical Officer of Health, went on leave in May and Dr. J. H. Pottinger, Assistant Government Medical Officer of Health, Berbice, was transferred to Georgetown to act as Government Medical Officer of Health. In October, Dr. Pottinger was seconded for duty with the Assyrian Settlement Commission in the Rupununi District and Dr. E. Cochrane acted as Government Medical Officer of Health until the end of the year.

2.—New Ordinance.

226. The Public Health Ordinance (No. 15 of 1934) was proclaimed law on 1st November.

3.—Notifiable Diseases.

227. The notifiable diseases are small-pox, alastrim, yellow fever, plague, typhus, cholera, typhoid fever, paratyphoid fevers, diphtheria, erysipelas, scarlet fever, chicken-pox, tuberculosis (all forms), anthrax, puerperal fever, puerperal septicæmia, infantile paralysis, cerebro-spinal fever and ophthalmia neonatorum.

228. Of the above diseases the following became notifiable on the passing into law in November of the Public Health Ordinance No. 15 of 1934:—typhus, erysipelas, scarlet fever, anthrax, puerperal fever, puerperal septicæmia and cerebro-spinal fever.

229. No cases of small-pox, alastrim, yellow fever, cholera or plague occurred during the year.

230. The total number of cases notified of the remaining diseases for the whole Colony was 804 as compared with 833 in 1933. The deaths registered as due to the same diseases were 365 as against 364 in the previous year.

(i) *Tuberculosis (all forms).*—

231. Below is a Table showing the cases notified and deaths registered in the City of Georgetown, the remainder of the Colony and the Colony as a whole, for the

past ten years. These are compared with the cases and deaths of in-patients of the Public Hospitals, the average ten-year case mortality also being given :—

TUBERCULOSIS (ALL FORMS).
CASES NOTIFIED AND DEATHS REGISTERED.

	City of Georgetown.		Remainder of Colony.		Whole Colony.		ublic Hospitals In-Patients.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1925	162	95	263	254	425	349	385	141
1926	124	100	195	226	319	326	371	133
1927	116	93	173	252	289	345	388	139
1928	102	76	190	225	292	301	357	122
1929	97	61	230	215	327	276	368	127
1930	122	85	209	217	331	302	383	143
1931	140	78	242	209	382	287	453	164
1932	147	96	276	224	423	320	550	170
1933	123	83	262	206	385	289	540	167
1934	130	85	187	168	317	253	456	135
Totals ...	1,263	852	2,227	2,196	3,490	3,048	4,251	1,441
Average (10-year) Case Mortality.	67.4%		98.6%		87.3%		33.9%	

232. The figures for 1934 of the numbers of deaths are the lowest recorded and the mortality rate fell to 0.78 per 1,000 of the total population.

233. The decrease was entirely confined to the rural areas, the figures for Georgetown remaining practically stationary.

234. Whether the increased mortality rate in the City of Georgetown can be ascribed purely to environmental factors or whether the racial factors must also be considered is a point that requires further investigation.

235. The mortality rate for the black and mixed races is considerably higher than for the East Indians and the former constitute the main bulk of the population of the City.

236. The table below furnishes a statement of the total number of cases treated, and deaths in Georgetown, New Amsterdam and Best Hospitals.

Hospital.	Cases (All forms).		Deaths (All forms).	
	1933.	1934.	1933.	1934.
Georgetown ...	363	306	124	109
Best ...	73	64	8	5
New Amsterdam ...	63	53	19	14

(ii) *Enteric Fever—*

237. Below is a Table showing the cases notified and deaths registered in the City of Georgetown, the remainder of the Colony and the Colony as a whole for the past ten years. These are compared with the cases and deaths of in-patients of the Public Hospitals, the average ten-year case mortality also being given :—

ENTERIC FEVER.

CASES NOTIFIED AND DEATHS REGISTERED.

	City of Georgetown.		Remainder of Colony.		Whole Colony.		Public Hospitals In-Patients.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths	Cases.	Deaths.
1925	80	16	234	63	314	79	148	40
1926	103	16	297	86	400	102	235	58
1927	67	16	196	74	263	90	143	49
1928	55	14	169	44	224	58	114	31
1929	43	11	157	33	200	44	91	24
1930	24	7	220	46	244	53	124	29
1931	18	5	232	47	250	52	94	23
1932	20	8	177	38	197	46	82	24
1933	30	11	216	57	246	68	96	30
1934	31	7	284	78	315	85	136	41
Totals ...	471	111	2,182	566	2,653	677	1,263	349
Average (10-year) Case Mortality.	23·6%		25·9%		25·5%		27·6%	

238. The higher incidence in and mortality from Enteric Fever in the country districts is probably associated with the flood conditions prevalent in the first quarter of the year.

(iii) *Diphtheria—*

239. Below is a Table showing the cases notified and deaths registered in the city of Georgetown, the remainder of the Colony, and the Colony as a whole for the past ten years. These are compared with the cases and deaths of in-patients of the Public Hospitals, the average ten-year case mortality also being given :—

DIPHTHERIA.

CASES NOTIFIED AND DEATHS REGISTERED.

	City of Georgetown.		Remainder of Colony.		Whole Colony.		Public Hospitals In-Patients.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1925	47	7	14	6	61	13	29	8
1926	28	8	7	...	35	8	22	3
1927	13	2	17	13	30	15	21	11
1928	21	9	14	11	35	20	16	9
1929	18	4	8	6	26	10	15	6
1930	18	4	20	7	38	11	21	7
1931	19	2	17	7	36	9	13	6
1932	32	5	11	5	43	10	30	5
1933	21	2	9	5	30	7	17	7
1934	31	3	15	3	46	6	34	4
Totals ...	248	46	132	63	380	109	218	66
Average (10-year) Case Mortality.	18·5%		40·1%		28·1%		30·3%	

(iv) *Chicken-pox*—

240. Below is a Table showing the cases notified and deaths registered in the City of Georgetown, the remainder of the Colony and the Colony as a whole for the past ten years. These are compared with the cases and deaths of in-patients of the Public Hospitals, the average ten-year case mortality also being given :—

CHICKEN POX.

CASES NOTIFIED AND DEATHS REGISTERED.

	City of Georgetown.		Remainder of Colony.		Whole Colony.		Public Hospitals In-Patients.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1925	72	...	24	...	96	...	31	...
1926	29	...	90	...	119	...	18	...
1927	14	...	17	...	31	...	5	...
1928	7	1	44	...	51	1	11	...
1929	9	...	41	...	50	...	14	...
1930	25	...	49	...	74	...	22	...
1931	52	...	18	...	70	...	55	...
1932	55	...	41	1	96	1	43	...
1933	30	...	90	...	120	...	34	...
1934	29	...	14	...	43	...	25	...
Totals ...	322	1	428	1	750	2	258	...
Average (10-year) Case Mortality.	0.3%		0.2%		0.3%		0.0%	

(v) *Ophthalmia neonatorum*—

241. Below is a Table showing the cases notified in the City of Georgetown, the remainder of the Colony and the Colony as a whole since this disease was made notifiable :—

OPHTHALMIA NEONATORUM.

CASES NOTIFIED.

(Notification commenced November, 1930).

	City of Georgetown.	Remainder of Colony.	Whole Colony.
	Cases.	Cases.	Cases.
1930 (Nov.-Dec.) ...	3	5	8
1931	36	12	48
1932	37	29	66
1933	32	18	50
1934	55	20	75
Totals ...	163	84	247

(vi) *Infantile Paralysis*—

242. Two cases of infantile paralysis were notified during the year. This disease was made notifiable on 26th August, 1933.

4.—GENERAL PREVENTIVE MEASURES.

243. The usual Tables showing in detail the work of the District Sanitary Inspectors are appended.

244. Of specified sanitary improvements served out there were 53,130 as compared with 45,097 in the previous year. Cases taken to court numbered 582 ; of these 99 were withdrawn, the number of convictions obtained being 483.

(i) *Latrine Erection*—

245. The policy of supervising the erection of dry pit latrines in village, country and rural sanitary districts was continued during the year. The total number of latrines of this type erected in 1934 was 2,451 in addition to the conversion of many old and less satisfactory structures. The recent improvement in the

construction of these latrines, namely, the raising of the superstructure on to a two-foot mound and its enclosure by a separate wooden revetment has more than justified its inauguration. Not only is the mound protected from ravages by pigs and fowls, resulting in greater protection from possible contamination and infection, but also the life of the structure is increased as was shown during the first quarter of the year where the structures largely withstood flood conditions.

246. The Department continues to advocate the adoption of the septic tank system of sewage disposal whenever the owner can afford one and not a few owners of better class houses have installed these tanks during the year. Where numbers of labourers are employed, such as on sugar estates, this system has been found particularly suitable and Estates' Authorities are more and more appreciating the advantages of this system over the old over-trench latrine system.

(ii) *Lot Inspection—*

247. Routine inspection of lots by district Sanitary Inspectors was continued throughout the year. The need for a reduction in the areas of the districts at present covered by individual Sanitary Inspectors is still great, and there remain several districts along the coast lands and up the rivers of the Colony without resident Sanitary Inspectors.

(iii) *Refuse Disposal—*

248. No special arrangements exist at present in village, country and rural sanitary districts for the proper disposal of refuse, and, until such time as Local Sanitary Authorities are able to provide or to contract for systematic collection and disposal of house refuse, the policy continued by the Department must remain that of encouraging burying or burning by individual occupiers.

(iv) *Food Inspection and Sampling—*

249. Shops are regularly visited and foodstuffs inspected. The Department has extended its activities to somewhat wider fields during the year under review and now includes the inspection of provision shops and roadside markets on sugar estates.

250. Milk samples were taken at intervals in the different districts and submitted to the Government Analyst for examination. Out of 1,700 samples taken, 107 were found to be adulterated. Whilst adulteration of milk in this Colony is still far too frequent, there is evidence nevertheless that in recent years offenders have been less in number and that adulteration on the whole has been less gross. Much depends upon the severity of the fine or penalty administered by the Magistrate.

251. Routine ante- and post-mortem examinations at slaughter houses were carried out by Sanitary Inspectors wherever such existed as also wherever slaughtering occurred. The chief causes for condemnation of carcases and portions of carcases were tuberculosis and parasitic infection of individual organs. The number of carcases inspected was 7,533 of which 123 were wholly condemned and 3,329 portions of one or another were found unsound and destroyed.

(v) *Buildings—*

252. The policy of tightening up conditions with respect to the preparation and laying out of land prior to the commencing of building operations and to strict enforcement of the building by-laws has been continued. The new Public Health Ordinance which was passed in November now provides for a measure of control not formerly possible. In particular, stress is laid much more to-day on the preparation of the ground and its proper laying out prior to the actual erection of the building. Experience has shown that the health of the inhabitants of settled areas depends less on the actual type and mode of construction of the building than upon its immediate environment, and this is particularly so as regards mosquito-breeding and malaria.

(vi) *Water Supply—*

253. Several artesian wells have been re-conditioned during the year and there has been marked introduction or extension of pipe-borne distribution of this water from the wells to several villages. Stand-pipes at intervals of 50 to 150 yards are set up for the convenience of the villagers along the more important village roads, although for a time there was disinclination on the part of villagers to use this artesian supply partly because of its taste—or rather its absence of taste—in preference to the "sweet" water of the fresh water trenches, and partly because of its content of iron and its effects on the washing of clothes. But this is short-lived and with the setting in of the dry season the supply in many instances provided practically the only source of drinking water.

(vii) *Disinfection—*

254. On the receipt of the notification form from the District Medical Officer of any of the notifiable diseases (with the exception of Ophthalmia Neonatorum) the Sanitary Inspector of the District concerned is immediately informed and measures for the disinfection of the premises are promptly carried out, advice being given to those connected with the case.

(viii) *Vaccination—*

255. Public vaccinators appointed in various parts of the Colony continued to vaccinate cases brought to them. Vaccination Officers under the control of the Surgeon-General are appointed for the purpose. The following Table shows the number of vaccinations performed :—

	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.
Total Vaccinations	5,150	6,862	4,241	6,668	6,500	4,864	5,179	6,200	4,880	6,045
Total verified successful ...	4,671	6,208	3,610	5,911	5,814	4,777	4,778	5,834	4,636	5,691
Per cent. verified successful ...	90.7	90.4	85.1	88.6	89.6	98.2	92 3	94.0	95.0	94.1

5.—SPECIAL PREVENTIVE MEASURES.

(i) *Anti-malarial Measures—*

256.—(*a*) Bonification of the Thomas Lands to the North and East of Georgetown was continued throughout the year. A grant of $10,000 allocated the previous year from Unemployment Relief Funds was continued to be utilised together with an additional grant of $500 towards this work of bonification. With the exception of one or two areas these lands may now be considered to be "reclaimed." Formerly under bush and in a more or less swampy condition the ground is now available for Sports Clubs and other recreational activities and was in fact taken over almost immediately on completion of the bonification.

(*b*) An area of about one mile in length by a quarter of a mile in width along the foreshore eastwards of the city which had been covered with courida trees was cleared of this growth during the year, together with the cutting out of the roots, by the Department. The removal of this belt of courida has had the effect of allowing the sea-breeze to blow uninterruptedly across to the adjacent villages.

(*c*) A portion of the available departmental vote was allocated to Approved Sanitary Works in New Amsterdam which included the concreting of a length of drain in the town and the rooting out of courida on the recently bonified portion of the foreshore.

257. During the first quarter of the year heavy flooding of portions of the coastlands occurred, the water rising in many instances to 3½ feet. The importance of this from a sanitary standpoint needs no comment, but where, as obtains in this Colony, the drainage trench borders one side of the road, and the fresh water trench

the other, the raising of the flood level of the water to a point higher than the road surface becomes of especial significance. The Department took early action by printing and distributing some 20,000 pamphlets in three languages, stressing the importance of the boiling of domestic and drinking water supplies. Food centres and temporary accommodation were provided in distressed areas and supervised by the Department, market places and schools chiefly being utilised for this purpose. Milk was freely distributed through the agency of the Infant Welfare and Maternity League, more especially for necessitous mothers and children.

(ii) *Model Dry Pit Latrines*—

258. Financial assistance was given in a few instances towards the erection of these latrines under the Department's supervision, more especially in connection with schools in country districts, and assistance was given in many instances to private individuals and Estates' Authorities in the direction of the preparation of plans for septic tanks, etc.

259. Consequent upon the floods not a few of the older type latrines were damaged or entirely washed away and aided financially by grants disbursed by the District Commissioners the Department re-erected model type latrines in their place more particularly in the case of those occupiers of dwelling houses who had suffered loss from the floods and were unable to rebuild their latrines.

(iii) *Water Receptacles*—

260. The Departmental type of mosquito-proof water receptacle, details of which were given in this report for 1933, continued to be distributed at a reduced price to poorer householders, and their value has again been manifested during the year. Particularly is this so because there is no necessity for continued inspection by the Sanitary Inspector as obtained with the old type, more particularly in connection with the maintenance of the mosquito gauze screen.

(iv) *Education and Propaganda*—

261.—*(a)* A course of lectures in connection with the local examination for Health Visitors Certificates was given in July, the examination being held later in the year.

(b) No course of lectures was delivered in connection with the Royal Sanitary Institute Examination, as the latter was held in the Colony of Barbados, Mr. H. A. Moonsawmy, F.R.E.S., being the representative from this Colony.

(c) The usual health tours in country districts were unavoidably held over throughout the year on account of the fact that for the greater part of the year the number of Medical Officers of Health was reduced from three to one.

6.—NEW PUBLIC HEALTH BILL.

262. The Public Health Ordinance No. 15 of 1934 was proclaimed law on 1st November.

263. Prior to this the Local Government Board had controlled health and sanitation in the Colony, and more especially in village, country and rural sanitary districts, under powers of the Local Government Ordinance (1907) Chapter 84. It had long been realised that with the gradual expansion of the Health Department and the enforcing of more and more of the sanitary provisions of that Ordinance in recent years, there was need for the establishment of a Central Board of Health to deal wholly with such matters, and thus relieve the Local Government Board which would be able to devote its attention to administration and finance in the villages. Part 1 of the New Ordinance deals with the establishment and powers of this Board.

264. Opportunity was taken to repeal several of the smaller ordinances dealing

directly or indirectly with health and sanitation, as well as the relevant sections in the Local Government Ordinance, and to collect and incorporate the necessary provisions in the new ordinance.

265. It will be observed in Part II of the Ordinance that Urban, Village, Country, Rural and Port Sanitary districts as constituted under the Local Government Ordinance remain as such under the new Ordinance, the Local Authorities of those districts becoming Local Sanitary Authorities for the purposes of the Public Health Ordinance, the Central Board of Health being the Local Sanitary Authority of Rural and Port Sanitary districts.

266. Although much of the previously existing laws as contained in particular in the Local Government Ordinance has been re-incorporated, every subject has thoroughly been revised and brought up to date with modern sanitary requirements, and not a few entirely new provisions have been included such as those for venereal diseases, maternity and child welfare and school hygiene. The drafting of the Regulations provided for under the Ordinance is steadily being proceeded with.

7.—LABORATORY WORK.

Summary of work done for 1934.

267. 117 specimens were examined, 70 being sputa submitted for the examination for acid-fast organisms; in 8 cases they were found to be present.

268. 39 blood films were stained and examined for malarial parasites.

269. 4 specimens of urine were submitted for complete examination.

270. 4 samples of trench water were examined for the presence of coliform organisms, in one case the Bacillus coli was found to be present in .01 of the water and in three cases Bacilli coli were found present in .001. These tests were done immediately after the floods in January, 1934.

271. Only routine work was able to be attempted during the year owing to the fact that the laboratory assistant was only able to devote a portion of his time to the laboratory, the remainder being occupied in undertaking the duties of a Sanitary Inspector in a district adjacent to the City.

Appendix A.

TABLE I.

Inspections of lots.	Notices served.	Prosecutions.	Convictions.	Withdrawn.	Dismissed.	Struck out.	Amount of fines.
128,411	15,892	582	483	99	...	...	$300.34

TABLE II.

Lots weeded.	Drains weeded.	Drains dug.	Trenches cleaned.	Ponds cleaned	Water Receptacles screened.
9,967	6,054	1,394	747	581	1,361

TABLE III.

Latrines erected.	Latrines removed and re-erected.	Latrines repaired.	Latrines limewashed.	Cesspits emptied.	Cesspits oiled.
2,421	1,731	2,225	2,544	79	21,682

TABLE IV.

	1933.	1934.
Inspection of provision shops	7,165	7,825
Provision shops cleaned by order	882	751
Provision shops certified	9	120
Inspection of bakeries	900	1,847
Bakeries cleaned by order	272	310
Bakeries certified	...	46
Samples of foodstuffs examined	184,525	189,350
Samples of foodstuffs condemned	647	696
Inspection of butcheries	4,685	4,164
Carcases inspected	8,337	7,533

TABLE V.

Milk Sampling, Inspection of Cowpens, etc.	1933.	1934.
Cattle-pens certified as sources of milk supply... ...	173	472
Licences issued for the sale of milk	900	952
Persons medically examined as to fitness for handling milk or milk vessels.	8	1
Persons prosecuted for selling milk unlawfully ...	27	60
Persons prosecuted for selling adulterated milk ...	78	107
Inspection of cattle-pens	4,599	4,376
Cattle-pens cleaned by order	796	892

TABLE VI.

Results of Milk Sampling—		
Samples taken	1,975	1,700
Samples genuine	1,889	1,590
Samples adulterated	78	107
Amount of fines	$ 890.78	$ 810.40

TABLE VII.

Percentage of Adulterated Milk Samples—		
East Coast, Demerara	5.0%	4.7%
West Coast, Demerara	1.0%	8.6%
East Bank, Demerara	5.0%	10.9%
West Bank, Demerara	2.2%	7.8%
Demerara River	0.0%	6.2%
Essequebo	4.0%	7.4%

XIII.—Port Health Work and Administration.

PORT OF GEORGETOWN.

272. The Surgeon-General is the Quarantine Authority for the Colony.

The Staff is as follows:—

Health Officer ...	...	B. N. V. Wase-Bailey, M.D., (Edin.), D.P.H., D.T.M. & H. (Eng.).
Deputy Health Officers	...	J. H. Pottinger, M.B., Ch.B., D.P.H., D.T.M. & H. (Liv).
		E. Cochrane, M.B., Ch.B., (Glas.), D P.H. (Lond.).
Port Sanitary Inspector	...	J. H. Matthews (Local Certificate in Hygiene & Sanitation).
Mechanic ...	...	W. Spooner.

273. During the year the duties of the Port Health Officer were performed by Dr. E. Cochrane and, in his absence, by Dr. L. S. Jaikaran of the Public Hospital, Georgetown.

274. Quarantine was maintained during the year as follows:—

(*a*) Permanently against all South and Central American Ports (except British, French and Dutch) for Yellow Fever, Plague, Small-pox and Cholera.

(*b*) At different times and for varying periods against Colon, Hayti, Cuba, Tampa, Florida (U.S.A.) and Guatemala for Small-pox, St. Bart's for Alastrim and the Azores for Plague.

(*c*) In the case of ships coming from St. Thomas, St. Croix, Porto Rico and San Domingo arrangements are in force to ensure the notification of any occurrence of Quarantine Diseases in these ports.

275. *Vessels visited by the Port Health Officer.*—During the year 63 vessels were visited by the Port Health Officer under the Quarantine Ordinance tabulated as under with Fees chargeable in each case:—

Month.	Gratis.	$4.00.	$6.50.	$9.00.	$2.00 (Re-visit).
January ...	...	4	...	...	...
February ...	...	6	1	...	...
March ...	...	7	...	...	...
April ...	...	5	...	...	...
May ...	...	4	...	...	...
June ...	...	5	1	...	...
July ...	...	5	1	...	...
August ...	2	3	...	...	...
September ...	...	4	...	1	...
October ...	...	6	...	...	...
November ...	...	5	...	...	...
December ...	...	3	...	...	...
Total ...	2	57	3	1	...

276. Passengers were placed under surveillance by the Port Health Officer as follows:—

For Small-pox	...	...	6
For Cholera ...	...	...	Nil.
For Yellow Fever	...	...	Nil.
For Plague ...	...	...	Nil.

277. Vessels consigned to the Demerara Bauxite Company, McKenzie, Demerara River, with crews placed under surveillance by the Port Health Officer were allowed to proceed to their destination. In each case the Medical Officer of

the Bauxite Company was instructed to keep all members of the crew of each vessel under surveillance until the quarantine period had expired and to report at the expiration of the period.

VESSELS VISITED BY THE PORT SANITARY INSPECTOR.

278. The total number of Vessels visited was as under :—

Steamers.			*Sailing Vessels.*		
Ocean Steamers	...	123	Schooners	...	115
Coasting Steamers	...	33	Other Craft	...	50
		156			165

279. The total nnmber of visits paid to Vessels was as follows :—

Steamers.			*Sailing Vessels.*		
Ocean Steamers	...	367	Schooners	...	574
Coasting Steamers	...	592	Other Craft	...	174
		959			748

280. The above visits include routine inspection of Government steamers.

NOTICES SERVED ON MASTERS OF VESSELS LYING IN PORT.

281. During the year no written notices were served on masters of vessels by the Port Sanitary Inspector. Nuisances occurring on board vessels were abated according to verbal instructions issued.

VESSELS FUMIGATED AND DISINFECTED BY THE PORT HEALTH AUTHORITIES.

282. No fumigation was carried out during the year.

283. Plague precautions were enforced on vessels lying alongside the quay at Georgetown or at McKenzie, Demerara River.

CARE OF MERCHANT SEAMEN.

284. Thirty-eight (38) sick seamen were sent to the Public Hospital, Georgetown, for treatment during the year from ocean going vessels.

285. *Clayton Fumigator at the Public Hospital, Georgetown.*—This machine was not employed for fumigation purposes during the year but was subjected to a quarterly test and gave satisfaction on each occasion.

286. *Washington-Lyon Steam Disinfector at Quarantine Station, Best, W. C. Demerara.*—This machine was subjected to a quarterly test during the year and worked satisfactorily on each occasion. Several charges of bedding were sterilized for the Tuberculosis Hospital.

287. *Clayton Rat Gassing Machine.*—This machine was not used during the year.

288. *Trapping and Examination of Rats.*—At varying periods during the year the trapping of rats was carried out in the Port by the Port Health Officer assisted by the Port Sanitary Inspector with a subsequent examination in the Laboratory attached to the Department. No signs of Plague were found in any of those examined. The number of rats trapped was 120.

289. *Quarantine Station, Best, W.C. Demerara.*—Regular attention has been directed to the keeping of this Station Compound in a sanitary condition including the weeding of grass, bushing, and the maintenance of proper drainage.

290. The condition of water receptacles on the whole is satisfactory. The necessity never arose during the year to utilize the Quarantine Station for the accommodation of persons arriving in the Colony under surveillance from infected Ports nor was there any case of a quarantinable disease in the Port of Georgetown and its vicinity during 1934.

291. *Remarks.*—Cablegrams were interchanged as heretofore between the Health Officer of this Port and other Convention Ports giving notice of passengers under surveillance on board vessels about to sail.

292. The total revenue accruing to Government from sanitary services in the Port of Georgetown in 1934 amounted to $256.50.

XIV.—Meteorological.

293. The rainfall during the year, as registered at the Botanic Gardens, (Georgetown), was 81.04 inches as against 116.55 in 1933, and the mean percentage of humidity was 80.9 as compared with 81.8 in the previous year.

294. The mean of the four recor ding stations in Georgetown was 77.62 inches as against 109.60 in 1933.

295. The following is the meteorological return for the year which was kindly supplied by the Director of Agriculture :—

Month.	Temperature.						Rainfall.		Winds.	
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force. Velocity
January	144·1	71·9	81·7	73·8	14·9	77·7	28·00	86·8	N.E.	8·00
February	149·8	70·5	82·6	73·3	14·0	78·4	2·39	79·2	N.E.	8·73
March	150·5	70·8	82·9	74·8	11·5	78·8	3·51	76·6	N.E.	8·79
April	149·0	72·9	84·5	76·2	11·5	80·3	2·31	76·3	E.	8·80
May	145·3	72·8	85·1	75·9	14·0	80·5	3·31	78·7	S.E.	8·35
June	144·6	72·6	84·6	75·5	13·0	80·0	9·21	82·2	S.E.	8·35
July	144·6	73·0	85·0	75·5	14·5	80·2	9·81	83·6	S.E.	4·97
August	149·2	73·5	86·6	76·1	17·0	81·3	4·9	81·3	S.E.	5·29
September	150·7	73·2	87·7	76·8	16·0	82·2	1·31	78·4	S.E.	5·79
October	150·8	72·6	86·4	76·6	16·0	81·2	5·80	82·1	S.E.	5·00
November	148·4	73·3	86·1	76·4	13·0	81·2	5·57	82·9	N.E.	6·58
December	148·9	72·2	84·8	75·4	14·0	80·1	5·63	82·3	S.E.	7·41
Mean	147·9	72·4	84·8	75·6	...	80·2	81·04	80·9	...	6·99

Georgetown—RegisteredMean Rainfall for the year 1934=77.62 inches.

XV.—Recommendations.

296. *The erection of a new Bacteriology Laboratory, Georgetown.*—The present premises are very unsatisfactory.

297. *The proper maintenance of all Governmant hospital buildings.*—The Leprosy and Georgetown hospitals in particular stand in great need of repair and renovation. The following improvements are necessary at the Leprosy hospital :—provision of a new hospital of 40 beds, converting the present female hospital and infirmary into a large ward with dressing rooms, toilets and bathrooms, adapting the present male hospital to large wards with dressing rooms on the first floor with toilets and bathrooms ; provision of one new kitchen for female compound, and of adequate toilet and bathing accommodation throughout ; bonification in the southern area and correction of drainage.

298. *The provision of adequate quarters for the medical staff of the Georgetown hospital and for the nursing staff at the Georgetown, New Amterdam and Suddie hospitals.*

299. *Georgetown Hospital.*—Re-organisation and increase of the establishment of medical officers are necessary to meet the present and future needs of this institution.

300. *New Amsterdam Hospital, Berbice.*—Re-arrangement of the out-patient department, ophthalmic and venereal diseases clinics and enlargement of the dispensary should be carried out as soon as possible.

301. *At the Bartica and Mabaruma hospitals* small electric lighting plants are required.

302. *The Mental Hospital, Berbice.*—The construction of additional blocks to permit of proper grouping of cases and of separate buildings for the accommodation of private patients are old standing requirements.

303. *The Quarantine Station, Best.*—It is important that this station should be in readiness to accommodate cases in accordance with the International Sanitary Convention and cases of dangerous infectious diseases in Georgetown and its vicinity. Detailed recommendations were submitted to the Government in May, 1935.

304. *The erection of a building to be used as a Health Centre and Bureau, Georgetown.*—The need for such an establishment to co-ordinate and extend the various branches of public health work has been manifest for some time.

XVI.—Scientific.

305. The annual report of the Government Bacteriologist for 1934 appears as Appendix I.

306. A report by Dr. G. Giglioli on the medical re-organisation and work during the year 1934 on the sugar estates of Blairmont, Bath and Providence, Berbice, appears as Appendix II. A further report on megalocytic anæmia by Dr. Giglioli is also included in the same Appendix.

J. A. HENDERSON,
Surgeon-General.

APPENDIX I.

GOVERNMENT BACTERIOLOGICAL LABORATORY.

ANNUAL REPORT FOR THE YEAR 1934.

1.—Staff.

Bacteriologist and Pathologist	...G. H. Steven, M.B., Ch.B. (Edin).
Laboratory Assistants	...Messrs. I. and E. A. Singh.
Volunteer Assistant	...Mr. J O. Morgan.
Clerk	...Mr. R. L. Morgan.

One Laboratory Attendant.

Mr. J. O. Morgan, Volunteer Assistant, was added to the staff on 12th March, 1934.

2.—Leave.

The following officers were on leave :—

Dr. Geo. H. Steven, from 9th April to 16th October, 1934.

Mr. R. L. Morgan, from 15th October, 1934, to 14th January, 1935.

During the absence of Dr. Steven, his duties were performed by Dr. E. Cochrane, Assistant Government Medical Officer of Health.

3.—Bacteriological and Serological Work.

The number of specimens examined during the year was 8,254 general and 6,022 Wasserman Reactions, a total of 14,276.

In 1933 the figures were 7,082 genernl, 6,759 Wasserman Reactions, total 13,841.

This is the largest number of examinations made in any year, and the total would have been greater but for a shortage in the guinea-pig supply which made it necessary to abandon entirely the Wasserman Test on three weeks and curtail it on several other days.

The following is a classified list of the examinations made :—

(a) Microscopic and Chemical—				
Throat Swabs for Corynebacteria Diphtheriae			246	
Sputa for Tuberculosis			881	
Nasal Smears for Mycobacteria Leprae			72	
Faeces for Helminths and Amoebae			770	
Blood Films for Malaria Parasites			1,364	
Blood Smears for Microfilariae			92	
Blood for Total and Differential Counts			705	
Smears for Gonococci and Spirochaetes			1,744	
Pus for Organisms			50	
Urine for Microscopic and Chemical Examinations			382	
Tissues for Section			126	
Cerebro-Spinal Fluids for Globulin and Cell Count			20	
Varia			116	6,568
(b) Cultural—				
Urine Cultures			52	
Blood Cultures			293	
Pus Cultures			272	
Water Examinations			7	
Faeces Cultures			354	
Cerebro-Spinal Fluid Cultures			3	
Autogenous Vaccines			26	1,007
(c) Pathological and Biochemical—				
Widal Reactions			350	
Blood Urea Estimations			197	
Blood Sugar Estimations			81	
Urea Concentration Tests			37	
Vandenbergh Reactions			14	
Wasserman Reactions—				
Cerebro-Spinal Fluids	25		...	
Blood	5,997		6,022	6,701
		Total		14,276

There were also several medico-legal examinations of suspected blood stains.

The anti-serum is prepared in the Laboratory and during the year sera for the detection of human, horse, and ox blood were prepared and successfully used.

4.—Source of Specimens.

About 84% of the specimens examined was received from the Public Hospital, Georgetown, and the various clinics and out-patient departments attached.

The following is a summary of the source of specimens:—

Public Hospital, Georgetown and Clinics	12,087
Public Hospital, New Amsterdam, Berbice	303
Best Hospital	165
Other Government Institutions	240
Districts run by Government Medical Officers	301
Municipal Infant Welfare Clinics	597
Private Practitioners	583
Total ...	14,276

5.—Remarks on Various Diseases Investigated.

(i) *Helminths.*—770 specimens of fæces were examined and 156 (20%) contained ova:—

Anchylostomum Duodenalis in 121 *i.e.*, 15.5%.
Ascaris Lumbricoides in 21 *i.e.*, 2.7%.
Trichuris Trichiura in 13 *i.e.*, 1.6%.
Oxyuris Vermicularis in 1

In 1933, the number of specimens examined was 603 of which 144 (24%) contained Ova—19.5%, 3% and 1% respectively. No ova of Oxyuris Vermicularis were found in 1933.

Since 1931 there has been a steady decline in the percentage of ova found. In 1931 ova were present in 33% and each year there has been a reduction. This probably is due to improved sanitation in Georgetown, but so long as sanitation is crude in the country districts, there will always be a heavy hookworm infection.

(ii) *Dysentery.*—Of the foregoing number of fæces examined, 5 (0.6%) were found to contain Entamœba Histolytica.

In 1933 the percentage was 3.3.

Cultures were also made for Bacillary Dysentery, and the Bacterium Flexneri was isolated in one.

The total number of cases of clinical dysentery confirmed in the Laboratory was therefore 6—amœbic 5 and bacillary 1, as compared with 28—amœbic 20 and bacillary 8, in 1933.

(iii) *Enteric Group.*—350 Widal Reactions were made of which 126 (36%) were positive as follows:—

112 (88.8%) to Bacillus Typhosum.
10 (7.9%) to Bacillus Paratyphosum B.
4 (3.3%) to Bacillus Paratyphosum C.

In the previous year 251 similar tests were made, 78 (31%) were positive—84.6% to B. Typhosum and 2.5% each to B. Paratyphosum "A," "B," & "C."

The bacillus was also isolated in 8 cases from cultures of fæces. The number of fæces examined continues to be quite out of proportion to the number of cases of enteric. I have drawn attention to this in previous reports.

(iv) *Nephritis.*—382 specimens of urine were completely examined. 95 (24.8%) contained more than 0.05% albumen.

Blood urea was estimated in 197 cases; of these, 53 (26.9%) contained more than 50 milligrams per 100 c.c. blood, and 37 (18.8%) over 100 milligrams.

The percentages in 1933 were 29.2% and 22%, and in 1932, 37% and 22% respectively.

Both types of nephritis still continue to be common especially in the rural districts and especially amongst the rice cultivators.

(v) *Tuberculosis.*—881 sputa were examined. The Mycobacterium Tuberculosis was found in 146 (16.6%).

In the previous year, the number of sputa examined was 925. The Mycobacterium was found in 180 (14%).

Specimens were received monthly from the Best Hospital.

(vi) *Venereal Diseases.*—6,022 Wasserman Reactions were done during the year. 5,997 on blood sera and 25 on cerebro-spinal fluids.

The results for the last two years are :—

		1934	Percentage.		1933.	Percentage.
Positives ...	...	1,884	31%	...	2,350	35%
Weak Positives	...	507	8%	...	332	5%
Negatives ...	...	3,631	61%	...	4,077	60%
Total	...	6,022			6,759	

The number of positive cases still remains very high and has not varied much in the past five years.

1,744 smears were examined for Gonococci and Spirochaetes, as compared with 2,330 in 1933.

Many of these examinations are made on cases under treatment for clearing purposes.

(vii) *Diphtheria.*—246 pharyngeal swabs were examined and the Corynebacterium Diphtheria was found in 47 (15%).

(viii) *Leprosy.*—In 8 of the 72 nasal swabs examined, the Mycobacterium Lepra was proved.

(ix) *Malaria.*—1,364 blood films were examined, as against 698 in the previous year.

The Plasmodia were found in 245 (17.9%), viz :—

Plasmodium Vivax present in 228 (93% of the positives).

Plasmodium Falciparum in 17 (7% of the positives).

(x) *Vaccines.*—795 c.c. of autogenous vaccines were prepared for 26 patients. These comprised 250 c.c. B. Coli (Communior, Neopolitanum, and Mutabile), 520 c.c. Staphylococcus (Aureus and Albus) and 25 c.c. Gonococcus.

10,000 c.c. of antityphoid (T.A.B.) vaccine were prepared and 9,754 c.c. issued to medical officers.

As a prophylactic against possible outbreak of enteric after the severe floods in January, 1934, the people of the flooded districts were urged to get vaccinated. Probably, six or seven thousand received two doses each of T.A.B. vaccine.

3,400 c.c. of Haemolytic Streptococcus (mixed strains) vaccine for filaria prophylaxis were prepared. This was supplied to medical officers, but was injected chiefly in the Laboratory. A large number of patients avail themselves of these injections, and the number of patients on record at present is 358, as compared with 113 in 1933.

The injection of streptococcal vaccine is very popular and according to the recipients' statements, it results in a lessening of fever attacks, both in number and severity.

The strains used are Streptococcus Haemolyticus. The attendance at the weekly clinic averages 50.

1,000 c.c. of gonococcus vaccine and 1,500 c.c. staphylococcus (mixed) vaccine were prepared also, and distributed to Government medical officers.

6.—Post Mortem Examinations.

Four hundred and thirty-three post mortem examinations were made during the year, as against three hundred and thirty-three in 1933.

1. *General Diseases*—

Anchylostomiasis	...	...	2	
Blackwater Fever	...	...	1	
Diphtheria	...	...	1	
Diabetes	...	...	1	
Filariasis (Abdominal)		...	2	
Leprosy	...	...	1	
Malaria	...	...	36	
Malnutrition / Maldevelopment	}	...	11	
Septicaemia	...	...	8	
Syphilis (Congenital)	...	...	4	
Syphilis (Tertiary)	...	...	6	
Acute Rheumatism	...	...	1	
Tetanus	...	...	1	
Typhoid Fever	...	...	3	78

2. *Injuries*—					
Poisoning	...	...	...	5	
Burns ...	...	...	...	3	
Fractures	...	...	...	10	
Laceration of Spleen	...	...	..	2	
Laceration of Kidney	...	...	...	2	
Laceration of Liver	...	...	...	1	
Laceration of Bowel	...	...	...	1	
Cutlass Wounds	...	...	...	2	26
3. *Diseases of Brain and Membranes*—					
Meningitis (Septic)	...	...	...	10	
Cerebral Haemorrhage	...	...	...	10	20
4. *Diseases of the Respiratory System*—					
Bronchitis (Acute)	...	...	...	2	
Bronchopneumonia	...	...	...	22	
Bronchiectasis	...	...	...	4	
Empyema	...	...	...	4	
Infarct (Septic of Lung)	...	...	...	6	
Pneumonia (Lobar)	...	...	...	29	
Tuberculosis of Lung	...	...	...	34	
Tuberculosis of Pleura	...	...	...	1	102
5. *Diseases of the Circulatory System*—					
Chronic Heart Failure with Myocardial Degeneration			...	21	
Chronic Heart Failure with Bronchitis and Emphysema			...	14	
Chronic Heart Failure with Valve Incompetence			...	6	
Aneurysm of Aorta	...	...	...	6	
Anaemia of Pregnancy	...	...	...	3	
Anaemia (Pernicious)	...	..	...	4	
Arterio Sclerosis	..	...	...	10	
Endocarditis (Ulcerative)	...	...	...	8	
Pericarditis (Septic)	...	...	...	1	
Rupture of Auricle	...	...	...	1	
Thrombosis of Auricle	...	...	...	1	75
6. *Diseases of the Digestive System*—					
Abscess of Liver (Multiple)	..	...	...	2	
Ascaridiasis	...	...	...	1	
Appendicitis	...	...	...	4	
Cirrhosis of Liver	...	...	...	10	
Enteritis	...	...	...	5	
Gastric Haemorrhage	...	...	...	2	
Hepatitis	...	...	...	1	
Gall Stones	...	...	...	1	
Hernia (Strangulated)	...	...	...	2	
Obstruction (Chronic)	...	...	...	4	
Peritonitis (Acute)	...	...	...	5	
Peritonitis (Tubercular)	...	...	...	2	
Perforation of Bowel	...	...	...	2	
Tuberculosis of Bowel	...	...	...	2	
Tuberculosis of Mesentery	...	...	...	2	
Ulceration (Caecal)	...	...	...	10	
Ulceration (Duodenal)	...	...	...	1	56
7. *Renal Diseases*—					
Cystitis ...	...	...	...	3	
Hydronephrosis	...	...	...	1	
Nephritis (Acute)	...	...	...	1	
Nephritis (Chronic Interstitial)		...	...	20	
Nephritis (Chronic Parenchymatous)		...	...	16	
Pyelitis ...	...	...	...	4	45

8. *Generative System*—					
Eclampsia ...	...	...	...	1	
Ectopic Gestation	...	...	...	1	
Postpartum Haemorrhage	...	...	...	1	
Puerperal Jaundice	...	...	...	1	
Pyosalpinx	...	...	...	3	7
9. *Bones and Joints*—					
Osteomyelitis	...	...	...	2	
Tuberculosis of Spine	...	...	...	1	3
10. *Tumours*—					
Cancer of Oesophagus	...	...	...	4	
Cancer of Stomach	...	...	...	5	
Cancer of Pancreas	...	..	...	3	
Cancer of Liver	...	...	...	2	
Cancer of Ovary	...	.	...	1	
Cancer of Prostate	...	...	...	1	
Cancer of Colon	...	...	...	2	
Cancer of Uterus	...	...	...	1	
Cystic Fibroma of Thyroid	...	...	...	2	21
			Total ...		433

7. The work in the Laboratory has perforce been reduced to routine examinations of specimens sent in for examination.

Owing to smallness of the staff, and the inadequacy of the buildings and the increasing number of specimens sent in, no organised work is possible.

It is now essential that a new up-to-date Laboratory be constructed. The present building, housed as it is in the basement floor of residential quarters in the hospital compound, is quite inadequate, even for the routine work performed.

The building and staff are the same as existed in 1921 when the total number of specimens examined was about 4,000 or less than one-third of the present number.

GEO. H. STEVEN,
Government Bacteriologist and Pathologist.

8th May, 1935.

APPENDIX II.

REPORT ON THE MEDICAL RE-ORGANISATION AND WORK DURING THE YEAR 1934 ON THE SUGAR ESTATES OF BLAIRMONT, BATH AND PROVIDENCE.

Work was started at Blairmont on the 3rd, at Bath on the 10th and at Providence on the 18th of November, 1933.

General Organisation.

Staff.—The hospital staff at Blairmont up to November 1933 was composed as follows:—

1 Sick-nurse dispenser.
2 Non-qualified assistant dispensers.
1 Nurse midwife.
2 Wardmaids.
1 Washer.
1 Cook.

No provision was made for night nursing which was left entirely to the relations of the patients when available.

The following is the present composition of the staff as it was re-organised in November, 1933:—

1 Sick-nurse dispenser.
2 Non-qualified assistant dispensers.
2 Nurse midwives.
2 Probationers.
1 Wardmaid.
1 Washer.
1 Scrubber.
1 Cook.

The dispenser has the general supervision of the hospital staff and administration, of the keeping of files and records, of the out-patient department, and of the drug store-room. One of the assistants is permanently stationed at Rampoor.

Each ward is under the direct supervision of a qualified nurse, and night duty is assured by the probationers.

No change has been made as regards staff in the hospitals at Bath and Providence.

Diet.—In the past only two grades of diet were issued to hospital patients, the composition of the rations being the following:—

Milk diet:	Milk two pints.
Spoon diet:	Sago 3 ounces.
	Rice 3 ounces.
	Sugar 3 ounces.
	Bread 2 ounces.
	Milk 2 pints.

Such rations are evidently inadequate, especially if one considers that with the East Indian labourers, we are dealing with a population suffering, almost universally, from quantitative and qualitative undernourishment. This fact was particularly patent at Blairmont with the exceptionally high incidence of ulcers and anæmias.

Three grades of diet have been instituted as follows:

No. 1.	Milk	2 pints.
	(extras: milk, eggs, bread).	
No. 2.	Rice	3 oz.
	Sago	3 oz.
	Sugar	3 oz.
	Milk	2 pints
	(extras: bread, eggs, mutton soup).	
No. 3.	Rice	4 oz.
	Peas	2 oz.
	Bread	8 oz.
	Butter	1 oz.
	Sugar	1 oz.
	Milk	1 pint.
	Salt	¼ oz.
	Currie Powder	¼ oz.
	(extras: eggs, mutton soup).	
Fresh meat:	Twice a week fresh mutton soup is issued.	

During 1934, 12,691 rations were issued as follows:—

Infant diets	...	... 171
No. 1	...	... 2,550
No. 2	...	... 4,915
No. 3	...	... 5,055

1,112 pints of milk were issued to infants outside the hospital.

During 1934 the average cost of one diet amounted to 11.3 cents; the average expenses for food for each patient admitted amounted to $1.01.

In the hospitals at Bath and Providence the same diet scale has been adopted, but fresh meat has not been added to the diet.

At Bath 5,007 rations were issued:—

Infant diet	...	... 93
No. 1	...	... 1,020
No, 2	...	... 2,959
No. 3	...	... 935

3,634 pints of milk were issued to infants.

The average cost of one ration was 12.2 cents. The average expense for food per patient admitted was $1.09.

At Providence 3,593 rations were issued:—

Infant diet	...	... 68
No. 1	...	... 651
No. 2	...	... 1,765
No. 3	...	... 1,109

326 pints of milk were issued to infants outside the hospital.

The average cost of one ration was 12.6 cents. The average expense for food per patient admitted was $1.19.

Medical Supplies.

In the past each estate purchased its own drugs and medical supplies from Davson's Pharmacy apparently no control being exercised on the prices charged; such prices were found to be exorbitant the estates being put to an unjustified expense, and thus handicapped for any serious attempt to deal with their many and difficult medical problems.

During 1934, the Pharmacy still having on hand a considerable stock of drugs ordered for the estates, the greater part of our supplies were bought from this source.

Requisitions are now being placed directly in England, nominally through Davson's Pharmacy, which receives a commission of 15% on landed costs. The first requisition on this basis was received in August and has proved very satisfactory.

During 1935 the greater part of our supplies will be obtained in this way, and while hoping to increase and extend our therapeutic means, I anticipate a very marked reduction in the drug bill for the future.

Requisitions for drugs and medical supplies are placed by Blairmont hospital, where the drugs are stored. From this store room issues are being made to the three estates, an extra charge of 5% being imposed on issues to Bath and Providence.

A well defined pharmacopeia, suited to local conditions, has been evolved for the use of the three hospitals; the compounding of these various mixtures is carried out at Blairmont; the issue of pure drugs is thus almost entirely avoided, and a very exact check can be kept on the amount of drugs consumed in relation to the patients treated, as all mixtures are standardised and issues are made by the number of doses. Leakage of drugs, which I suspect must have been considerable in the past, is now nearly impossible.

This system evidently throws considerable extra work on the Blairmont dispenser.

During 1934 expenditure for drugs at Blairmont amounted to $1,911.00. It should be noted that at the end of the financial year our unissued store-room stock represented a value of $182.77.

For the reason already stated expense under this heading has certainly been excessively high, and a marked reduction may be anticipated for the future.

A considerable amount of hospital equipment, beds, bedding, etc. was purchased. No surgical instruments have been requisitioned except the very simplest needed for ordinary dressings and incisions. It is not proposed to enlarge to any extent in this direction, except for what may be needed for diagnostic purposes and current minor operations.

The occasional surgical cases we get can be transferred without detriment to the public hospital in New Amsterdam.

At present patients have to be repeatedly shifted when conveyed to hospital; bed to car, car to steamer, steamer to car, car to bed; most of this would be avoided if a wheel stretcher were available.

Records.

Great attention has been given to the keeping and filing of all clinical, laboratory and field records. Exact data on the various diseases seen and treated are therefore always easily available, new data being added every day. None of the material handled is wasted or lost.

By the systematic collection of all such data over an adequate period of time, we may hope to obtain definite information on the *local* natural history of the principal diseases with which we have to deal. It is only on such exact knowledge that effective and economic preventive measures can be based; under the difficult conditions prevailing on sugar estates, sanitation needs to be eminently "to the point."

Patient Movement.

Blairmont.—During the year under review, 1,392 patients were admitted to hospital; of these 520 were adult males, 420 adult females, 281 children between the ages of 2 and 12 years, and 171 infants below 2 years of age. These patients accounted for an aggregate of 13,388 hospital days. The average number of patients in hospital per day was 36.5 and the average number of days spent in hospital per patient was 9.5.

994 patients continued to receive out-door treatment after leaving hospital, for variable periods. 1,185 cases were examined by the M.O. and treated as out-patients; for these cases the usual duration of treatment varies from 6 to 10 days.

With few exceptions such patients have to come to hospital daily to take their medicine so as to insure that the treatment is properly carried out, and to avoid wastage of drugs.

40,656 cases received casual treatment for minor ailments and injuries at the dispensaries at Blairmont and Rampoor. Relatively to figures given in previous years we have approximately double the number of admissions, increased by many times the number of out-patients and substantially reduced the number of casual treatment.

Wherever possible a serious attempt to bring about a definite cure has been made; the results so far achieved in improving the health of the community are due entirely to treatment and not to any change in the surroundings, which have in no way been altered.

On 1,392 admissions 35 deaths were registered, giving a case mortality of 2.5%. Only a small number of patients were transferred or advised to the public hospitals, for surgical treatment, X-ray examination or ophthalmic diseases; of these only one case is known to have died following an operation. 3 patients found to be suffering from leprosy were referred to the Mahaica hospital.

Bath.—During 1934, 564 cases were admitted to hospital; of these 211 were adult males, 189 adult females, 87 children between the ages of 2 and 12, and 82 infants below the age of two.

These patients accounted for an aggregate of 5,136 hospital days. The average number of patients in hospital per day was 14, the average hospitalisation period per patient admitted was 9 days. Seventeen deaths were registered, *i.e.*, a case mortality of 3%.

318 cases continued to receive out-patient treatment after being discharged from hospital; 480 cases were placed on regular out-patient treatment. and 32,575 calls were made at the dispensary for minor ailments and dressings. A small number of cases were transferred or advised to the public hospitals for special treatment or operations; of these two were reported to have died.

Providence.—380 cases were admitted to hospital; of these 162 were adult males, 123 adult females, 55 children between the ages of 2 and 12, and 40 infants below 2 years of age.

These cases accounted for an aggregate of 3,840 hospital days. The average number of patients in hospital per day was 10.3, and the average hospitalisation period per patient admitted 10.1 days. Eighteen deaths were registered, *i.e.*, the case mortality amounted to 4.1%.

279 cases continued to receive out-patient treatment after being discharged from hospital; 273 were placed on regular out-patient treatment, and 5,651 calls were made at the dispensary for minor ailments and dressings. No deaths were reported from the small number of cases transferred to the public hospitals. One case was referred to the leprosy hospital.

Infant Welfare and Ante-Natal Clinics.

This work represents a very important phase of medical activity on the estates, and is yielding excellent results.

Clinics are held every two weeks at Blairmont, Bath and Providence, and once a month at Rampoor.

The following Table analyses the general movement of these clinics:—

INFANT WELFARE CLINICS.

	Blairmont.	Bath.	Providence.	Total.
No. of Clinics ...	36	24	25	85
No. of children attending ...	149	124	40	313
No. of attendances ...	1,063	1,038	546	2,647
No. admitted to hospital ...	12	16	14	42
No. treated as O.P.'s ...	148	131	81	360
No. of pints of milk issued...	1,112	3,634	326	5,072

ANTE-NATAL CLINICS.

	Blairmont.	Bath.	Providence.	Total.
No. of Clinics ...	36	24	25	85
No. of Women attending ...	78	62	25	165
No. of Attendances ...	430	197	137	764
No. admitted to hospital ...	7	2	11	20
No. treated as O.P.'s ...	55	46	26	127
No. of Deliveries in hospital	48	41	12	101
No. of births on Estates ...	63	57	14	134
No. of Stillbirths ...	5	...	2	7
Infantile Mortality ‰ Births	206‰	105‰	214‰	171‰

Our infantile mortality during the year certainly remains abnormally high, this being mainly due to the large number of deaths among premature and congenitally weak infants, born in the early months of the year from mothers whose ailments had been neglected whilst pregnant. Exactly 50% of the infants we lost died in the first quarter of the year; at Blairmont this quota was even higher as out of 13 infant deaths 8 occurred in the March quarter. A very marked improvement is expected for the future at Blairmont; at Providence the problem is more complex as the population is small and particularly deficient as regards elements of the activity reproductive age. During 1933 the infant mortality for the Colony was 154 per mille births.

When mothers are unable to nurse their infants *modified* cow's milk, specially prepared in the hospital, is issued; when possible the milk is supplied by the parents, but in indigent cases a regular ration is given out free of charge.

General health among the infants has greatly improved and it has become exceptional, at Blairmont and Bath, in routine examination, to find cases who are not putting on weight satisfactorily.

Among expectant mothers the value of ante-natal treatment has been quickly appreciated, as is evidenced by their regular attendance to clinics.

The following table eloquently demonstrates the really remarkable change in the general standard of newly born infants at Blairmont.

BLAIRMONT HOSPITAL.

Comparative weights of Infants at Birth during the November-February period, 1933-34 & 1934-35.

No.	1933-34.	1934-35.
1	3½ lbs.	5 lbs.
2	3 ,,	6 ,,
3	3 ,,	6½ ,,
4	7 ,,	7 ,,
5	6½ ,,	6½ ,,
6	3½ ,,	6¾ ,,
7	3¼ ,,	6½ ,,
8	7½ ,,	6 ,,
9	6½ ,,	5½ ,,
10	4½ ,,	5¾ ,,
11	6 ,,	6½ ,,
12	6½ ,,	8 ,,
13	5¾ ,,	5 ,,
14	5¾ ,,	6 ,,
15	4¾ ,,	6¾ ,,
16	4½ ,,	5 ,,
17	5¾ ,,	6¾ ,,
18	6 ,,	5½ ,,
19	5¼ ,,	5 ,,
20	3 ,,	7½ ,,
21	4 ,,	6 ,,
22	5½ ,,	6¾ ,,
23	6 ,,	6 ,,
24	4¾ ,,	5 ,,
25	8 ,,	7¾ ,,
26	3 ,,	7¾ ,,
27	6 ,,	7¾ ,,
28	6 ,,	7¾ ,,
29	5 ,,	
30	3½ ,,	
31	4¼ ,,	
Average	5.1 ,,	Average: 6.3 ,,

45% of Infants below 5lbs. 100% of Infants 5lbs. or over

Notes on Diseases:

Blairmont.—On a total resident population of 1,926 (1935) 1075 persons required admission to hospital on one or more occasions; 55.6% of the inhabitants were therefore treated in hospital during the year.

The following Tables give a synthetic idea on the relative incidence of the principal groups of diseases and on their importance as causes of death, disability and financial loss.

TABLE.

Disease.	Admissions.	Hospital Days.	Hospital days per case	Death.
Malaria ...	562	2,693	4.4	3 (1)
Megalocytic Anaemia (2)	29	960	33.1	8
Respiratory Diseases ...	101	804	7.9	5
Intestinal Diseases ...	104	563	5.4	3
Syphilis ...	39	404	10.3	1
Infectious Diseases ...	3	162	54	...
Ulcers	106	2,738	25.8	...
Surgical Diseases ...	262	2,797	10.6	4
Maternity ...	48	512	10.6	1
Miscellaneous (3) ...	113	1,556	13.8	10

NOTE (1).—In 6 other fatal cases malaria co-existed with varied conditions but was not the chief cause of death.

NOTE (2).—During the months of November-December 1933, 6 cases of megalocytic anaemia were treated as in-patients with a total of 155 hospital days and 3 deaths in mothers, 3 in infants and 1 still-birth.

NOTE (3).—Under this heading are included many fatal cases which came to death as the result of varied and combined chronic and acute diseases, the classification of which is difficult under any particular group of diseases.

The disability caused by each group of diseases in relation to the aggregate hospital disability for the year can be expressed as follows:—

	per cent.
Surgical diseases (including cutaneous and ophthalmic complaints)	20.8
Ulcers	20.4
Malaria	20.1
Megalocytic Anæmia	7.1
Respiratory Diseases	6.
Intestinal Diseases	4.2
Maternity	3.8
Syphilis	3.
Venereal Diseases	1.4
Infectious Diseases	1.2
Miscellaneous	11.6

The relative importance of the various groups of diseases as causes of death can be expressed as follows:—

Megalocytic Anæmia	23.
Respiratory Diseases	14.2
Surgical Diseases	11.4
Malaria	8.3
Intestinal Diseases	8.3
Syphilis	2.8
Miscellaneous and Complicated Diseases	28.2

Malaria figures as an important cause of disability and death, yet the figures in our tables give only a small idea of the ravages caused by this disease as they refer exclusively to cases in which malaria was, if not the only, at least the principal cause of disease and death. In a very large proportion of our patients malaria co-exists with other conditions; it is the background on which most acute diseases evolve, assuming particular gravity; it undermines the constitution, causes widespread secondary anæmia and, undoubtedly, prepares the ground on which ulcers thrive and grave anæmias, of the pernicious type, develop.

Apart from surgical diseases, which include a large variety of conditions, mainly traumatic or septic, secondary to minor injuries, ulcers, malaria and megalocytic anæmia are the principal causes of hospital disability, the latter also heading the list of fatal diseases.

It is particularly gratifying to be able to state already at the end of the first year of work that the treatment and, to a great extent, the prevention of megalocytic anæmia is now practically assured and that the incidence of ulcers has been reduced to quite low and I should say very nearly normal proportions.

Bath.—Resident population: 1658 (1935 census).

Number of persons admitted to hospital on one or more occasions 440. Percentage of population receiving treatment in hospital 26.6.

The following Table shows the relative incidence of the various groups of diseases with the disability and number of deaths which they caused:—

Disease.	Admissions.	Hospital Days.	Hospital days per case.	Death.
Malaria	128	806	6 3	4
Megalocytic Anaemia	5	131	26	3
Intestinal Diseases	91	506	5.5	3
Respiratory Diseases	72	635	8.8	2
Venereal Diseases	16	133	8.3	...
Syphilis	5	82	16.4	...
Infectious Diseases	7	231	33	1
Ulcers	2	26	13	...
Surgical Diseases	123	1,193	9.7	...
Maternity	42	420	10	...
Miscellaneous	74	553	7.4	3

The relative disability caused by the various diseases was the following :—

	Per cent.
Surgical Diseases (including cutaneous and ophthalmic complaints)	23.2
Malaria	15.5
Respiratory Diseases	12.3
Intestinal Diseases	9.8
Maternity	8.1
Infectious Diseases	4.4
Venereal Diseases	2.5
Megalocytic Anaemia	2.5
Syphilis	1.5
Ulcers	0.5
Miscellaneous	10.7

The total disability at Bath was little more than one third of that registered at Blairmont. Apart from surgical conditions of minor importance, malaria heads the list ; yet the number of cases admitted to hospital was less than one quarter of admissions to Blairmont hospital for the same disease. The corresponding low incidence of megalocytic anæmia and ulcers should be noted.

Intestinal diseases, on the contrary, are very frequent ; with enteric they accounted for just over 15% of the total disability. Apart from cases admitted to hospital, diarrhoea was very prevalent during and after the floods, and always tends to be frequent throughout the heavy rainy weather when the level of the drainage trenches is high. Most of such cases were treated as out-patients, so they do not show in our tables.

The incidence of enteric was somewhat higher than is shown by our tables, as some of the cases admitted, during December, were still in hospital on the first of January, 1935. A mild epidemic of this disease occurred, throughout November and December, among young children exclusively ; 19 cases and 1 death were recorded.

On the whole these returns from Bath are exceptionally good, especially if one considers the adverse conditions brought about by the floods in the early months and the unusually high malarial incidence in the latter part of the year.

Providence.—Resident population : 530

Number of persons admitted to hospital on one or more occasions : 277.

Percentage of population receiving treatment in hospital : 51.2%.

The following Table gives a relative incidence of the various groups of diseases, with the disability and the number of deaths which they caused :—

Disease.	Admissions.	Hospital Days.	Hospital days per case.	Death.
Malaria ...	136	688	5	3
Megalocytic Anaemia (1)	6	75	12.5%	...
Respiratory Diseases ...	59	485	8.2%	9
Intestinal Diseases ...	31	244	7.8%	3
Venereal Diseases ...	15	277	18.4%	...
Syphilis ...	5	36	7	2
Infectious Diseases ...	1	5	5	1
Ulcers ...	29	431	15	...
Surgical Diseases ...	81	1,427	17.6%	...
Maternity ...	12	120	10	...
Miscellaneous ...	7	62	9	2

The relative disability by the various groups of diseases was the following :—

	Per cent.
Surgical Diseases (including cutaneous and ophthalmic complaints)	37.1
Malaria	18.8
Respiratory Diseases	12.6
Ulcers	11.2
Venereal Diseases	7.9
Intestinal Diseases	6.3
Maternity	3.1
Megalocytic Anæmia	1.9
Syphilis	0.9
Infectious Diseases	0.1
Miscellaneous	1.6

NOTE.—(1) Most of these cases were transferred to Blairmont hospital, for treatment under laboratory control.

Providence offers a difficult problem, conditions being quite different from those prevailing on the other two estates, for the following principal reasons :—

1. Proximity to town and quasi continuity of the estate yard with the neighbouring village.
2. Abnormal constitution of the population which is deficient in young adults of reproductive age, and prevalently formed by old elements. On 500 residents examined the following age distribution was found :—

	Per cent.
Below 10 years of age	17.2
From 11 to 20 years	19.2
From 21 to 30 years	13
From 31 to 40 years	16.8
From 41 to 50 years	17.4
From 51 to 60 years	13.2
From 61 to 70 years	2.8
Over 70 years	0.2

Excluding the children below 10 years, 40.6% of the working population of the estate is above 40 years of age. At 40 the average East Indian labourer can be called old. The number of residents between 50 and 70 exceeds the number of residents between the ages of 20 and 30.

Such a demographic condition naturally and unavoidably entails a low birth and a high death rate.

3. Housing conditions are extremely bad. Malaria is by perendemic and the water supply is poor.

4. Not very much can be expected from therapeutic measures which have given such excellent results on the other estates as a large proportion of the morbid conditions seen are irreducibly chronic and usually complicated. Moreover, treatment is not so regularly carried out, owing to the somewhat less strict discipline brought about mainly by the special situation of the yard.

5. The population, on the whole, appears poorer than on the other estates and denutrition or even sub-starvation is at the back of many conditions, particularly in infants and growing children.

Birth Rate and Mortality.

Blairmont.—An accurate census of the population in February, 1935, showed the number of residents on the estate as 1,926. This figure is considerably lower than the estimated population throughout recent years; in 1933, the population was given as 2,128. In reality, it does not seem likely that there actually has been a reduction in the number of residents; it would appear that in the returns of the 1931 census, which was taken during the crop season, a considerable number of temporary residents, belonging to the task gang, were also included. This error makes it difficult to give accurately comparative figures for the birth and death rates on the estate in relation to the past years; our lower population figure tends to increase our death and birth rates.

During the past 20 years the average number of births per annum was 64; in 1934, 63 births were registered.

During the past 20 years, with an average eatimated population of 2,013, the average number of deaths per annum was 59 (excluding the deaths caused by the influenza pandemic of 1919). The average death rate was therefore 29.3 per mille residents. During 1934, only 38 deaths were registered in the resident population and 2 among temporary residents. The death rate for the year was therefore 19.7 per mille residents; this is, by a good margin, the lowest figure on record.

It is interesting to note that 48% of the deaths recorded occurred in the first quarter of the year. Undoubtedly, many of these cases would have been saved had they received proper treatment in time. During the second half of the year, in spite of an abnormally high malarial incidence only 10 deaths occurred among residents.

Barring unusual epidemics, such as influenza, we can confidently look forward to a further marked reduction in the death rate in the near future.

The average death rate for the Colony, in 1933, was 24.4 per mille inhabitants.

During the 20 year period, 1914-1933, 1,275 births and 1,472 deaths were registered at Blairmont, there being an excess of deaths over births of 197, *i.e.*, an average of very nearly 10 per annum. In 1934 we registered an excess of births over deaths of 24.

Bath.—With an estimated population of 1,749, (1933) the average number of deaths registered per annum, in the past 20 years, was 38.6, *i.e.*, the average death rate was 22.1 per mille residents.

A census taken in March, 1935, showed the actual resident population of the estate to be 1,649.

During 1934, only 19 deaths were registered in residents, 2 in temporary residents and 2 deaths were reported in residents transferred to the public hospital. The death rate for 1934 was 12.7 per mille residents, this figure being only slightly above one half of the average death rate for the Colony throughout 1933.

The number of births during 1934 was low, only 57 births being registered against an average of 74.6 births per annum throughout the past 20 years.

An excess of 36 births over deaths was nevertheless recorded.

Providence.—During the past twenty years, 494 deaths and 274 births were registered with an average of 24.7 and 13.7 respectively per annum. As an average, there has been an excess of deaths over births of 11 per annum.

During 1934, 20 deaths occurred on the estate; of these 16 were residents and 4 non-residents. No case is known to have died in the public hospital. There were only 14 births. If only the resident population is considered we find an excess of deaths over births of 2.

Ankylostomiasis Survey and Campaign.

A hookworm survey was carried out on the 3 estates during the second quarter of the year.

At Blairmont, 1,179 persons were examined and 335, *i.e.* 28 per cent. found infected. The majority of these infections were slight or of medium intensity. 301 infected persons were treated with Carbon Tetrachloride.

At Rampoor, 337 persons were examined and 135, *i.e.* 40 per cent. found infected; many heavy infections were found in this village, obviously in consequence of the complete absence of latrines. 128 persons were treated.

Following the first treatment, 344 persons were again examined but only 27, *i.e.*, 7.8 per cent. found positive. Treatment was again administered where required and over 60 latrines of the pit and mound type erected; these appear to be the most suitable for the locality, given the sandy nature and high level of the reef on which the village stands.

At Bath, 1,462 persons were examined and 228, *i.e.*, 15.5 per cent. found infected; with very few exceptions all cases were mild. 210 persons were treated.

At Providence, the incidence of hookworm was found to be both high and severe. 527 persons were examined and 387, *i.e.*, 73.4 per cent found infected. 357 persons were treated. One month later 563 residents were again examined and only 80 found to be still slightly infected; the infection rate had thus fallen from 73.4 per cent. to 14.2 per cent. Out of the 80 persons found infected, 76 received a second course of treatment.

This hookworm survey has required the microscope examination of 5,490 stool samples. At Blairmont, most of the examinations were done by the Laboratory assistant, but on the other two estates samples were collected and preparod by the dispensers and all the examinations were made by myself during my routine visits. 2,552 samples were thus examined. This is mentioned in order to show what a relatively simple matter the eradication of ankylostomiasis is on sugar estates. The cost of this campaign was very nearly negligible.

In order to maintain the results obtained it is evidently necessary to prevent as far as possible the importation of new infection. This can be accomplished by the systematic examination and treatment of all new residents.

Malaria Survey.

Malaria is, by far, the most important disease with which we have to deal; few are the cases which come up to treatment for medical, surgical, or even traumatic conditions in which malaria has not to be considered either as the principal, or a predisposing or an accessory and complicating factor. The general morbidity of the 3 estates is directly proportionate to the severity of malarial endemicity.

The following table is based on the results of two surveys carried out in the months of February and September respectively, and gives a good idea concerning the relative severity of the disease.

Spleen Rate, Parasite Rate and Average Haemoglobin Percentage in Children below 12 Years of Age.

Estate.	Month.	Spleen rate. No. Exam.	Spleen rate. % enlarged.	Parasite rate. No. Ex.	Parasite rate. % Positive.	Average Haemoglobin.
Blairmont and Rampoor	II.	398	60.1	251	32.2	72%
	IX.	229	46.7	232	16.8	
Bath	II.	393	30.2	252	17	84%
Bath	IX.	320	14	161	12.4	
Providence	II.	123	65	122	45	73.8%
Providence	IX.	61	62.2	61	31.3	

Systematic observations have been and are being carried out with the object of ascertaining the biology of the local anophelin species in relation to the epidemiology of malaria. From the 1st of November a meteorological observatory has been instituted with recording thermograph and hygrometer; katathermometric readings are also taken three times a day.

Meteorological variations have an important bearing on the epidemiology of malaria; in this Colony the meteorological regime is extremely variable so that it is only after some years of careful observation that conclusive data can be obtained.

General Considerations and Recommendations.

The year under review was certainly not an unusually healthy one; heavy rains and floods in the early months, with a high incidence of intestinal and respiratory diseases, and an unusual prevalence of malaria in the second half of the year related to the abnormal distribution of the rainfall during the warmer months, were the principal factors of the high morbidity.

Early in the year, the number of admissions to hospital, particularly at Blairmont, was greatly influenced by the very high incidence of chronic conditions due to long neglected diseases; asthma, bronchitis, anæmia, rheumatism, ulcers, syphilis, etc. Most of these cases were successfully taken in hand and are now more or less useful workers, capable of earning their living. Chronic invalidism by the end of the year was reduced to fairly normal proportions.

At Providence, as has already been noted, this problem persists and is of a more difficult solution.

In the earlier stages it was also considered advisable to give hospital treatment in a high proportion of cases in order to insure full and prompt therapeutic results, an important point so as to gain the confidence of the population. In this respect too, I think, we can claim success as we now have little trouble in carrying out treatment also in out-patients.

For the future I expect to have fewer patients, and fewer chronic complaints; we should also be able to select more strictly the cases which require hospital treatment. All this should contribute to reduce expenditure.

Undoubtedly we have obtained some very satisfactory results, but our statistics, for this first year, tend to show a somewhat formidable medical effort, as shown by the very high percentage of the resident population which required hospital treatment on one or more occasions; Blairmont 55.6%, Bath 26.6%, Providence 51.2%.

The identification of megalocytic anaemia, as a very prevalent and fatal disease among East Indians, and especially in pregnant women and newly born infants, represents an advance of first class importance, not only for the estates but for the whole Colony. We have, at our disposal, highly effective therapeutic means; mortality for this condition should be negligible, in future, on our estates and a marked increase in the birth rate can be anticipated. A preliminary report on the investigation of this disease will appear as an appendix to the Surgeon-General's Report for the Year 1934.

I submit, along with this report, some diagrams and graphs which show, at a glance, the improvement achieved in the death rate at Blairmont and Bath.

All that has been obtained so far is entirely due to treatment, as next to nothing has been done or changed as regards general sanitation. I will conclude this report with a few recommendations in this direction; in so doing I have singled out for each estate the problems which appear the most urgent, as demonstrated by the different incidence of the various diseases and general conditions.

Blairmont.—Malaria constitutes the basal medical and sanitary problem. Malaria control on the classical lines, oiling, Paris greening, etc., is not practicable; careful and prolonged study of the biology of the local anopheles may, in future, supply the key to some practical means of control. At present, two measures are recommended:

(*a*) The bush, between the main navigation canal and the pasture should be cleared and the ground properly drained. The area, between the two navigation canals, if possible, should be regularly cultivated (provision gardens). The area, at present, occupied by cow pens should be cleared of bushes and made into an open pasture, the cow pens being removed further to the west. In the old yard the scrubby bush existing, between the houses and the canefields, should be cleared.

(*b*) Trenches and canals should be kept clear of floating grass and vegetation over a radius of approximately half a mile, around the compound.

Water-borne intestinal diseases were rather conspicuous for their absence during last year at Blairmont, yet the water supply, constituted partly by rain and partly by trench water, is open to wholesale contamination and is liable at any time to become the source of serious epidemics. A scheme for a water purification plant has been entertained for some time; I urge that it should be carried out as soon as conditions will warrant.

Bath.—The principal problem on this estate is the drinking water supply. The introduction of pure water would substantially reduce the morbidity and mortality.

It is also urged that strict measures should be applied to prevent residents from taking clay in order to dab their houses from the main drainage canal which is also the main latrine trench. This custom was, in all probability, the cause of the recent typhoid epidemic and may be related to the large number of septic skin conditions seen in young children.

Providence.—The peculiar population conditions of this estate have been noted; housing conditions are extremely bad and there appears to be little chance of attracting or keeping desirable residents if some improvement is not made in this direction.

Malaria is hyperendemic: the clearing of bush around the yard and the clearing of trenches are recommended.

The water supply is obviously poor, but constitutes a less urgent problem than either of the former.

G. GIGLIOLI.

30th March, 1935.

MEDICAL LABORATORY REPORT 1934.

The following figures refer to the main routine examinations carried out in the laboratory during the year:

Haematological Examinations—	
Blood Films for Malaria parasites	2,505
Red cell counts	193
Haemoglobin estimation	2,147
Granulo cyte counts	149
Halometric measurements	250
Sputum Examinations	34
Stool Examinations	2,938
Serological Examinations—	
Meinicke C reactions for syphilis	617
Bacteriological Examinations—	
Blood cultures for enteric	47
Cultures from pus, stools, etc.	208
Vaccines Prepared—	
Autogenous Vaccines	190
Tetravalent anti-typhoid vaccine (T.A.B.C.)	cc 150

Most of these examinations were carried out for diagnostic purposes; a great many relate to the ankylostomiasis and malaria surveys.

A large number of autogenous vaccines have been prepared for the treatment of ulcers and septic conditions; they have proved themselves to be a very active means of treatment of these widespread, relapsing and disabling conditions.

Routine capture and identification of anopheles, adults and larvae, examination of water and soil in relation to mosquito biology represent another important aspect of the laboratory's activities.

From the beginning of November, 1934, a meteorological observatory has been instituted where atmospheric temperature and relative humidity are registered by recording instruments. Three times a day (6.30 A.M.; 12 N.; 5 P.M.) dry and wet bulb temperature and dry and wet bulb katathermometric readings are also taken and the air velocity calculated.

The laboratory finally provides for the routine sterilisation of dressings, solutions, etc. for the use of the 3 hospitals.

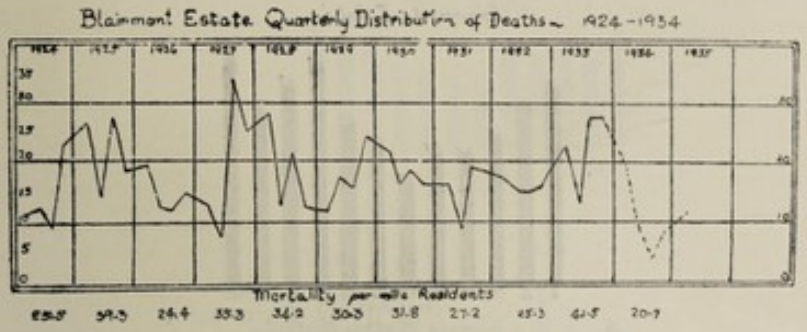

DIAGRAM No. 1.

Chart illustrating the quarterly returns of deaths at Blairmont 1924–1935, including residents and non-residents. The dotted portion of the curve corresponds to the period covered by this report.

Mortality per *mille* has been calculated on all deaths including non-residents. Up to 1933 it has been calculated in relation to the estimated population which between 1924 and 1933 varied from a minimum of 2,079 to a maximum of 2,293. These estimates were probably excessive.

For the year 1934 the death rate has been calculated on the actual enumerated population, a census having been taken in February, 1935. The present population of the estate is 1926 souls.

If the death rate for 1934 had been based on the estimated population, as in previous years, it should have been only 16.7 per mille residents.

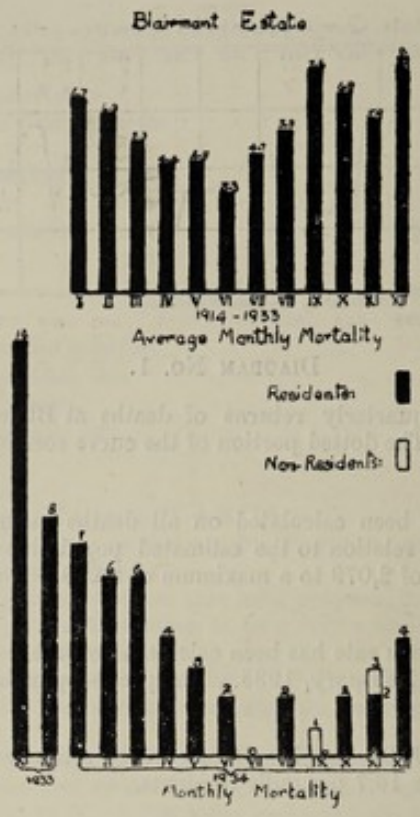

DIAGRAM NO. 2.

Shows the average monthly number of deaths registered on Blairmont Estate during the 20 year period, 1914–1933. Ninety-four deaths caused by the 1919 influenza pandemic have not been included in the calculation.

The monthly incidence of deaths from November, 1933, to December, 1934, is given for comparison, distinction being shown for deaths in non-residents.

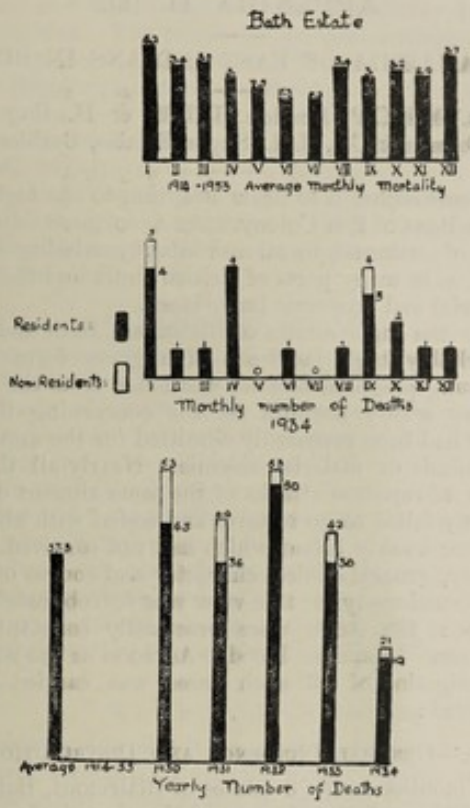

DIAGRAM NO. 3.

Illustrates the average monthly number of deaths registered on Bath Estate during the 20-year period, 1914-1933; deaths caused by the influenza pandemic of 1919 have not been included in the calculation.

The monthly incidence of deaths throughout 1934 is given for comparison.

The average yearly number of deaths registered is also shown for the period, 1914-1933, along with the corresponding figures for the past five years, distinction being made between deaths in residents or non-residents.

APPENDIX II. (B).

MEGALOCYTIC ANAEMIA OF EAST INDIANS IN BRITISH GUIANA.

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The object of the present report is to draw attention to the high incidence of Megalocytic Anæmia among the East Indians of this Colony. As a common, disabling and fatal disease, and as a fruitful source of maternal, foetal and infant morbidity and mortality, Megalocytic Anæmia in British Guiana, as in many parts of British India and the East, must be regarded as a disease of first class social and economic importance.

On starting work on the sugar estates of Blairmont, Bath and Providence in Berbice, in November 1933, the remarkably high incidence of a grave form of anæmia affecting East Indians and prevalently young pregnant females was noted from the very first.

Reference to the very scanty hospital records concerning the past histories of these patients showed that many had been repeatedly admitted for the same complaint, usually under the diagnosis of ankylostomiasis or malarial anæmia. Nearly all the women, who were not primipare, gave a history of repeated attacks of the same ailment during their previous pregnancies which had frequently failed to go to term and ended with abortion or miscarriage, or the delivery of a still-born or weakly infant which had not survived.

Prima facie the history, general clinical character and course of these cases were suggestive of an anæmia of the pernicious type; this view was corroborated by the preliminary blood findings and by the fact that the stools were practically constantly negative for ova, and malaria parasites were absent from the blood. As soon as the necessary equipment became available a systematic investigation of all such cases was carried out. The result of this research is herewith submitted:

(I).—GENERAL INCIDENCE AND DISTRIBUTION.

During the past 20 months on the 3 estates of Blairmont, Bath and Providence, with an aggregate population of 4,127 residents, 51 cases of Megalocytic Anaemia have been recorded.

(*a*) *Sex.*—Both sexes are susceptible, but females are prevalently affected. On 45 adult cases 7 were males and 38 females; a ratio of 5.5 females to 1 male. This prevalence in the female sex is real, as these cases originated from a well-balanced population as far as sex distribution is concerned. In the small number of cases seen in children the two sexes were equally represented, 3 males and 3 females.

(*b*) *Age.*—The age ranged from 11 months to 44 years. The great majority were adults, between 17 and 30 years of age. Only six cases were seen in children below 12 years of age.

(*c*) *Locality.*—The incidence of the disease on the different estates varies, as is shown by the following Table:—

TABLE I.

Estate.	Population.	Megal. Anaemia.		Deliveries.	Megal. Anaemia in Pregnancy.	
		Cases.	Incidence % Residents.		Cases.	Incidence % Deliveries.
Blairmont	1,926	35	1·8	151	25	16·5
Providence	544	7	1·2	31	5	16·1
Bath	1,657	6	0·3	142	4	2·8
All Estates	4,127	51	1·2	324	34	10·4

At Blairmont and Providence, both estates with a reputation for unhealthiness, situated on the Berbice estuary, the disease is very common and fairly uniform in incidence. At Bath, a healthy sea-coast estate, the incidence, on the contrary, is very low; it should, moreover, be noted that 2 out of the 4 cases recorded in pregnant women in this locality had resided on the estate for less than a year and originated from Rosignol, a village situated at the mouth of the Berbice River.

(*d*) *Season.*—The period over which the present investigation ranges is too short to enable one to form an adequate opinion as to the seasonal incidence of the disease; but, during the past two years, there has undoubtedly been a marked increase in the number of cases seen in the first and last quarters of the year. Few cases occurred in the June and September quarters. This may only be an effect of the habitual rise in the number of births which

occurs between November and March; this increase is probably due to the East Indian custom of celebrating marriages in May. The relatively greater number of women in advanced pregnancy during the late autumn and early winter months may thus be one of the causes of this rise in the incidence of Megalocytic Anaemia throughout this same season.

(e) *Relation to Pregnancy.*—It has been noted that the disease prevails in females between the ages of 17 and 36, *i.e.* during the years of maximum of reproductive activity. This high incidence is mainly related, in fact, to the state of pregnancy. On 38 adult women affected, 35 were expectant mothers or had recently delivered; of these 8 were primipare; the remainder had borne from 2 to 6 children. In 19 cases there was a history of similar disturbances during previous pregnancies. The disease may become apparent at any period of pregnancy, usually between the 4th. and 8th. months.

(2.)—History and Onset.

Malaria figures in the remote history of all cases; recent attacks are not frequently complained of. The most characteristic feature of the histories of these patients is the frequent occurrence of previous attacks of anaemia. In pluripare previous pregnancies should be investigated, particular attention being given to the causes which determined eventual abortions, miscarriages, premature deliveries and stillbirths or deaths in newly born infants. The occurrence of glossitis and stomatitis, (locally known as "Nenawa") is also important.

In male patients it has not been possible to ascertain the exact mode of onset, as nearly all our cases had been semi-invalids, for many months, and some for years. In pregnant females the onset is usually gradual, the anaemia progressing as the pregnancy advances; the disease may suddenly take on an acuter character, and one may note a shocking change in the appearance and blood picture of a patient in the course of only a few days. Finally, in some instances, the disease acquires the character of an acute illness and evolves with high fever, vomiting, etc.

(3.)—Clinical Characters.

(a) Subjective Symptoms.—Lassitude, progressive weakness, palpitation, effort dyspnoea and vertigo are particularly constant. Anorexia with dyspepsia and epigastric and, sometimes, precordial oppression, especially after meals, is frequent. Soreness of the tongue and mouth is another complaint.

(b) Facies.—Except in the rarer cases, running an acute course, with high temperature, the patients are not wasted and often appear fairly well nourished. The complexion is muddy and has a yellowish tinge; the skin loses its normal sheen and has a matt, opaque tone. The visible mucous membranes are pale, in advanced cases grey or nearly white. The sclera are subicteric or frankly jaundiced.

(c) Temperature.—In 17 of our cases there was no fever; in the remaining some rise in temperature was noted, ranging from an occasional spike-like elevation lasting only a few hours, to low, irregular, intermittent or continuous fever; sometimes the temperature was higher, continuous and irregular, reaching to 102° or 103° F. Such temperatures frequently follow delivery; they resist quinine and are therefore distinct from the occasional attacks of malaria fever which may occur in these same patients. On the contrary, they rapidly subside with the treatment which is specific for this form of anaemia.

(d) Digestive Disturbances.—The tongue, if not inflamed, is flabby and of a pale grey colour. Glossitis and stomatitis are very frequent: on 44 patients in which this sign was investigated, glossitis occurred, either *in acto* or in the recent history, in 20 cases, *i.e.*, in 45.5%. The stomatitis may be of the aphtous or erythematous type. Fissuring of the labial commissures is frequent, but by no means characteristic. The tongue condition may vary: there may be aphtous ulceration of the tip and margins; in other cases the organ has a "beefy" appearance with fissures and hypertrophied fungiform papillae; in most instances there is extensive papillary atrophy as in sprue and pellagra, the tongue being smooth and red, as if varnished. Anorexia and flatulent anacid dyspepsia occur in nearly all cases, gastric distension after meals may produce a sensation of epigastric weight and, sometimes, precordial oppression, both of which are relieved by anacid eructations.

Up to the present, we have not been able to carry out analytical examination of the gastric juice, therefore we cannot say whether or not there is real achlorydria; but the gastric symptoms which have been described, and the fact that they are invariably and immediately relieved by the administration of dilute hydrochloric acid, seem to indicate that there is a deficiency of this substance in the gastric secretion; the entity of this deficiency remains to be determined.

In acute, febrile cases bilious vomiting is frequent: The stools are bilious, yellow or dark green. Diarrhoea occurred in only 3 instances. In 4 very grave cases, 3 of which proved fatal, dysenteric symptoms were noted.

(*e*) *Cardiac and Circulatory Disturbances.*—Effort dyspnoea, palpitation and vertigo have been mentioned as early and constant symptoms. In the more severe cases hæmic murmurs are nearly always present, usually most evident at the base, particularly over the pulmonary focus. Some dilatation of the right heart, jugular engorgement and pulsation, and hepatic congestion are constant in severe cases. The wobbly pulsation at the base of the neck is often very conspicuous; slight oedema of the ankles, and sometimes of the face, is frequent; in pregnant females oedema of the legs may be very marked and persistent.

(*f*) *The Spleen* was enlarged in 47 out of 50 cases. As a rule, the size of the organ was considerably above the average malarial spleen seen on the Estates. It usually reaches the transverse umbilical line, but not rarely the pubis passing to the right of the midline; its consistency is hard and is rarely tender.

(*g*) *Respiratory Disturbances.*—The respiratory organs are only indirectly affected; effort dyspnoea has been mentioned as an early symptom, and is an effect of the blood and cardiac condition; a dry cough may be very persistent and distressing in some grave cases with marked cardiac involvement.

(*h*) *Renal Symptoms.*—The urine is diminished in quantity and rather highly coloured. In acute cases it may present a dark brown colour. Albuminuria occurred in 12 cases out of 51; it is frequently transitory and clears up with rest. Nothing of note in the urinary sediment. The oedemas which have been described appear to be the result of circulatory rather than renal failure. The symptom complex of pregnancy-albuminuria and oedema may easily lead to a mistaken diagnosis.

(*i*) *Nervous System.*—It is very doubtful whether the nervous system is involved in this form of anaemia. Headache is very frequent, and pains in the thighs and legs were very marked and persistent in a grave case in a pregnant woman. In two instances the patients complained of a burning sensation strictly circumscribed to the plantar regions and toes. This condition is a common complaint independently from Megalocytic Anæmia; it has been described in India, Malaya and Burma, and locally by Sharples. I concur in the opinion that it is a deficiency disease; we have found that in most instances this affection yields to Marmite: *i.e.* to the same treatment which is specific for Megalocytic Anæmia. The two conditions may therefore co-exist as both appear to derive from a dietetic deficiency which may be compensated by the administration of Marmite.

(4.)—Haematological Findings.

(*a*) *Red Cells.*—The red cell count in the present series of cases ranged from 800,000 to 3,700,000 per cubic mm. In the majority of cases it was between 1,800,000 and 2,500,000; in three cases it was below one million per cubic mm.

In stained films the most characteristic feature is the marked variability in the size of the erythrocytes, with prevalence of the larger forms and presence of macrocytes. Poikilocytosis is usually absent and, if present, very slight.

Nucleated red cells are frequently present but were never numerous in our cases; 2 or 3 per 100 leukocytes usually. They are prevalently normoblasts, but megaloblasts may also be present.

Degenerative change, such as polychromasia and basophilia were never marked.

The Fragility test was performed in only 4 cases and gave normal readings.

Reticulocytes.—In films stained with Leishman, after preliminary vital coloration with brilliant cresyl blau, reticulocytes frequently appear abnormally numerous: on 34 cases investigated the reticulocyte count was negative in 5; it was normal, not exceeding 1 per cent. in 15; in the remaining 14 cases the count was above normal ranging from 2 to 8 per hundred red cells. Such abnormally high counts are not characteristic of the disease we are investigating as they are frequently observed in patients suffering from other conditions; they are probably an effect of the widespread malarial infection and of the resulting secondary anaemia.

Red Cell Diameter.—Actual red cells measurements for the plotting of the Price-Jones curve were not carried out. For the estimation of the red cell diameter we relied entirely on Eve's Halometer. With this instrument it is only possible to determine the *average* red cell diameter, but no information is obtained as regards the *range of variability* in the size of the red cells, which, according to Price-Jones, is the more important datum.

Eve's Halometer has proved itself a valuable instrument as an aid to diagnosis: the results we have obtained were nearly always consistent with other clinical and laboratory findings. On 45 of our cases in which halometric readings were taken 40 showed an increase in the average red cell diameter ranging from 7.81 to 8.39 microns. The remaining 5 cases were all very mild; they were females giving a history of grave anaemia during previous pregnancies in which treatment was instituted as soon as the first signs of anaemia appeared. In the early stages the Halometer not rarely gives a normal reading; in suspected cases therefore the test should be repeated at intervals.

In a series of 310 control cases, of all ages, suffering from various conditions, admitted to Blairmont hospital, the Halometer gave normal readings in 303; of the 7 cases presenting an average red cell diameter over normal, 6 were infants below 2 years of age.

(b) Hæmoglobin Percentage and Colour Index.—For the estimation of the hæmoglobin percentage the Hellige hæmometer has been used. In this instrument the figure 100 on the scale corresponds to 17 grams of oxy-hæmoglobin per 100 cc. of blood. It is important here to remember that the standard adopted in the various hæmoglobinometers is far from uniform: on the Haldane scale the normal standard corresponds to the figure 105 equal to 14.5 gram. of hæmoglobin per 100 cc. of blood. In the Dare hæmoglobinometer the figure 100 corresponds to 13.8 gram. of haemoglobin per 100 cc; in the Tallquist scale to 15.8 gram; in the Newcomer to 16.92 and in the Sahli to 17.2 gram. Therefore a reading of 80 per cent. obtained on the Hellige or Sahli scale would roughly correspond to a reading of 100 according to the Haldane or Dare scale. Such a difference, evidently, has a very marked bearing on the calculation of the colour index.

The hæmoglobin percentage, in our series of cases, ranged from below 25 per cent. to 40 per cent. In 30 out of 51 cases it did not exceed 30 per cent.

The study of the colour index is necessarily an important point as on this datum is founded the distinction between hypo and hyperchromic anæmias. According to Price-Jones (1931), estimating the haemoglobin percentage by Haldane's method, the normal colour index is 0.97 for males and 0.98 for females.

The colour index was investigated in 38 of our patients, basing its calculation on haemoglobin percentages obtained by the Hellige haemometer. In 7 cases it ranged from 1 to 1.6; in 11 from 0.8 to 1; in the remaining 20 cases the colour index was below 0.8, the lowest figure recorded being 0.55.

The colour index value appears to vary in direct proportion to the severity of the case; in mild or early cases it is usually low; in grave cases, on the contrary, it is practically always high and usually above the unit. When the progress of an untreated case is followed, the value of the colour index increases as the anæmia progresses; when the red cell count falls below 2 millions, the colour index is nearly always 1 or over. Conversely when a grave case is appropriately treated the colour index becomes progressively lower as the patient improves. This is well seen in the following Table:—

TABLE II.

Case.	Age.	Sex.	Before Treatment.			After Treatment.		
			Red Cell Count.	Hb. %	Col. Index.	Red Cell Count	Hb. %	Col. Index.
Prone	19	M.	900,000	25%	1·39	4,500,000	70%	0·66
Pertab	17	M.	1,250,000	25%	1·04	4,430,000	76%	0·79
Latchman	19	M.	900,000	25%	1·30	4,400,000	70%	0·66
Rajpati	34	M.	1,900,000	35%	0·92	5,700,000	80%	0·80
Sumintra	21	F.	1,800,000	35%	0·99	4,700,000	70%	0·71
Ramkalia	20	F.	1,300,000	25%	0·96	4,200,000	70%	0·85
Parvatan	24	F.	2,400,000	50%	1·04	4,000,000	70%	0·87

The haemoglobin percentage in the average "healthy" East Indian labourer, on the estates of Blairmont and Providence, is 65 per cent. (Hellige). We find that cases of Megalocytic Anaemia, however readily they may have responded to the specific liver or Marmite treatment, fail to progress further, on this treatment alone, when approximately the haemoglobin value has been reached.

A colour index of 0.80 is deemed compatible with a diagnosis of Addisonian Pernicious Anaemia; practically 50 per cent. of our cases therefore fulfil this condition. We do not think that the low colour index found in the remaining 50 per cent. stands against a diagnosis of Megalocytic Anaemia, or that it is even a sufficient argument to exclude its hyperchromic character of this Anaemia.

As has already been noted the Hellige haemometer, which is the instrument we have used, gives haemoglobin values which are considerably lower than those obtained by the Haldane method, which has been used in the most recent investigations in England. It is evident that if this Patter scale had been adopted a larger proportion of our cases would have shown a colour index well above 0.80. It is, moreover, necessary to consider that one and all of our patients were, in the first place, subject to an ordinary, secondary or hyperchromic anaemia,

mainly as a result of chronic or repeated malaria infection and malnutrition. It is in this terrene that Megalocytic Anaemia usually develops; the hyperchromic character of the new disease is, at first, masked, one might say neutralised, by the pre-existing hypochromic condition. The specific liver or Marmite treatment will relieve the hyperchromic anaemic; it will bring the patient back to *status quo ante* and his blood picture will again acquire the character of an ordinary, secondary, hypochromic anaemia, unless the treatment is appropriately modified and supplemented in order to meet this condition. (Iron, Arsenic).

(c) *White cells.*—These show no characteristic changes: a certain degree of leukopenia, with counts ranging from 3,000 to 5,000 leukocytes per cmm., is usually present. In the differential count one finds a relative lymphocytosis of varying intensity. One or two myelocytes and mast cells per 100 leukocytes may also be found.

(d) Serum bilirubin.—On 31 cases tested Fouchet's reaction was positive in 23; the direct Van den Bergh reaction was negative in 28; only in 3 cases a very faint *delayed* positive reacton was noted; the indirect Van den Bergh, on the contrary, was positive in 29 cases, readiings ranging from 2 to 16 units. This reaction was negative only in two cases, both very mild ones. In 2 cases of high ankylostome infection, with grave anaemia of megalocytic type, this reaction was also negative.

The quantitative indirect Van den Bergh estimations were carried out by means of the Hellige comparator.

The Fouchet and indirect Vau den Bergh reaction gave concordant results in 23 cases; in 6 the Fouchet was negative and the Van den Bergh positive; in 2 only both reactions proved negative. In no instance was the Fouchet test positive and the indirect Van den Bergh negative; the latter, therefore, appears to be the more sensitive and reliable test.

The fact that the indirect Van den Bergh reaction is nearly constantly positive in this form of Megalocytic Anaemia is a point of considerable nosological importance as in this respect our disease appears to differ from the Megalocytic Anaemia described in the Eastern tropics, resembling, instead, the Megalocytic Anaemia of Pregnancy of temperate climates.

(5).—Relations of Megalocytic Anaemia to other Diseases.

(a) *Ankylostomiasis.*—In the past, ankylostomiasis has usually been regarded as the cause of the syndrome we are studying, either as the result of actual ankylostome infection, or, as a manifestation of a somewhat hypothetical "ankylostome cachexia," resulting from and surviving to a past hookworm infection.

It is, therefore, of special interest to examine the incidence of ankylostome infection in our series of cases, and to review briefly the hookworm situation on the 3 estates from which they originated. In all stool examinations the *flotation* method was used.

On 51 cases of Megalocytic Anaemia A.D. ova were found in the stools in only 7, *i.e.* in 14 per cent. The following, briefly, are the particulars of the cases found infected.

Case No. 5: In February 1934 was treated with cabon-tetrachloride and passed 162 hookworms. Though he showed no further evidence of infection, he suffered a grave relapse of his anaemia in October of the same year which responded readily and well to liver treatment.

Case No. 46: Was a female of 9 years, with very grave anaemia, and a large number of A.D. ova in her stools. Owing to her precarious condition anthelmintics were withheld till after liver treatment had been instituted. Response was slow, till carbon-tetrachloride was given and 189 worms passed. Progress was subsequently rapid. This patient gave a negative indirect Van den Bergh reaction, in this respect, differing from our other cases.

Case No. 19: Was a 20 year old female, with a history of severe anaemia in 3 previous pregnancies, none of which went to term. She was first seen when in the 6th month of her 4th pregnancy and found infected with A.D. Treatment caused 22 worms to be passed. Subsequent stool examinations proved negative, her anaemia, however, continued to progress as her pregnancy advanced, causing, much anxiety; she eventually delivered a full term stillborn child and made a good recovery.

In other 3 patients one or two ova were found in the stools; washing of the stools voided for 48 hours after treatment yielded only 2 worms in 2 cases and none in the third; re-examination showed all to be free from infection.

The general incidence of infection in our anaemia cases was actually lower than the average incidence in the population of the estates, according to surveys carried out in 1934. (Table III).

All cases found positive were treated, and, whenever possible, the stools were subsequently washed for worms. Infections of medium intensity and, sometimes, high ones were fairly frequent at Providence, but scarce at Blairmont and very scarce at Bath.

TABLE III.

Relative incidence of A.D. infection and Megalocytic Anaemia on the Estates of Blairmont, Bath and Providence.

Estate.	Population.	Ankylostomiasis.		Megalocytic Anaemia.	
		No. Examined	% Infected.	% Resident.	% Deliveries.
Blairmont ...	1,926	1,516	31·0%	1·8%	16·5%
Providence ...	544	527	73·4%	1·2%	16·1%
Bath ...	1,657	1,462	11·5%	0·3%	2·8%

It is difficult to see any relation of etiological significance between Megalocytic Anæmia and hookworm infection; on the other hand it is evident that their co-existence in the same individual aggravates the anæmia and renders treatment more difficult. A heavy A.D. infection may cause a severe anæmia of megalocytic character, but in those cases the indirect V.D.B. reaction remains negative. We have seen two such cases.

(*b*) *Malaria.*—It has been noted that the spleen was enlarged in 94% of our cases; that the organ was usually of exceptional size and that it presented the general characteristics of the fibrous spleen of chronic malaria. Addisonian pernicious anæmia and other megalocytic anæmias do not, of themselves, produce conspicuous enlargement of the spleen, though the organ is frequently palpable at the costal margin. The splenomegaly presented by our cases is undoubtedly of malarial origin. It remains to be determined whether this pre-existing chronic malarial infection plays a primary, accessory or contingent part in the etiology of Megalocytic Anæmia.

Grave anæmias have frequently been observed in chronic malarial subjects. These were named "post-malarial anæmias" by Marchiafava and Bignami; they were well studied by Bignami and Dionisi who classified them according to their hæmatological and anatomopathological features into 3 main forms:

(1) Anæmia with the general characteristics of secondary anæmias with leukopenia and *normoblastic reaction in the bone marrow.*

(2) Anaemia, of progressive pernicious type, mainly affecting debilitated or aged subjects and pregnant women with normoblasts and megalocytes in the blood and *megaloblastic degeneration* of the bone marrow.

(3) Grave anaemia also of rapidly progressive pernicious type, characterized by the absence of nucleated red cells in the blood and by *aplastic degeneration* of the bone marrow.

As regards the pathogenesis of these anaemias and their relation to malarial infection, Marchiafava and Bignami come to the following conclusion: "Though these anaemias appear in the wake of malaria, we can not for this reason alone regard them as the result of this infection; in these cases, in fact, the anaemia tends to evolve as an independent process which continues to progress even after the infection, its apparent cause, has ceased to be operative. This leads us to believe that there are other factors to be considered, besides malaria, in the pathogenesis of these anaemias; some of these probably are as yet unknown. Among such factors can be listed: *old age, defective nutrition, strain, pregnancy,* and *lactation.* It is not rare to see in our wards cases of grave progressive anaemia in women who have become pregnant whilst in an anaemic condition caused by a previous malarial infection."

When practically the whole population of an area is more or less subject to malaria, and, in the majority, shows patent signs of chronic infection, as is usual in many parts of this Colony, it becomes a problem of extreme difficulty to determine the relation of this infection to any particular morbid process. In this connection, therefore, it is only proposed to point out the peculiar local distribution of Megalocytic Anaemia and its relation to the intensity of malaria on our 3 estates, as demonstrated by the spleen and parasite index.

TABLE IV.

Relative incidence of Malaria and Megalocytic Anaemia on the Estates of Blairmont, Bath and Providence.

Estate.	Population.	Spleen Rate.	Parasite Rate.	Megalocytic Anaemia.	
				% Residents.	% Deliveries.
Blairmont ...	1,926	60·1	32·2	1·8	16·5
Providence ...	544	65·0	45·0	1·2	16·1
Bath ...	1,657	32·2	17·0	0·3	2·8

Large spleens at Blairmont and Providence are the rule; chronic relapsing infections and re-infections are prevalent. At Bath such conditions are the exception and malaria is, on the whole, of a very mild type. As has been mentioned the actual incidence of Megalocytic Anæmia on this estate was considerably lower than our figure would indicate, as 2 out of 7 cases recorded had recently arrived from Rosignol, *i.e.* a much more malarial district.

Apart from this different incidence of malaria on the 3 estates, which has a very evident bearing on their respective general morbidity, we have been unable to trace any other outstanding difference either in the local topographical characters or the constitution of the population or in its dietetic habits which should account for this remarkably different incidence of Megalocytic Anæmia.

This distributional character of the disease, along with the exceptionally high splenic index found in our cases, and the unusual size of their spleens all seem to point to chronic malarial infection as a factor of very considerable importance in the etiology of this form of Megalocytic Anæmia.

(*b*) *Syphilis.*—For the serological detection of syphilis, the Meinicke clarification reaction has been used. On 44 cases tested a full positive reading was obtained in 6; *i.e.* 14.3 per cent.; 2 more cases gave a faintly positive reading. On 518 patients admitted to Blairmont hospital for varied medical, surgical and traumatic conditions, 9.4 per cent. gave a full positive Meinicke reaction and a further 3.5 per cent. gave a faintly positive reading. Syphilis would not appear, in conclusion, to have an important role in the etiology of Megalocytic Anæmia; it may have an accessory influence but the disease did not seem to run a graver course or to be more resistent to treatment in cases showing serological evidence of syphilitic infection.

(6)—RELAPSES AND REMISSIONS.

The disease affects males more rarely, as has been recorded, but in them it is usually a severe and chronic condition, evolving by remissions, relapses, and exacerbation over a period of years, if not appropriately treated. Even when successfully treated and apparently cured relapses are frequent if maintenance treatment is not carried out for long periods.

In females, under the strain of pregnancy, the disease is by far more common than in men, and may assume a very grave and acute character. But as soon as the uterus is emptied, be it by abortion or miscarriage, or by delivery of a full term stillborn or living child, if the mother survives the shock of labour, in the great majority of cases recovery is surprisingly rapid. Under treatment most cases are well on the way to recovery 3 or 4 weeks after delivery. These women return to their normal occupations and enjoy good health till a new pregnancy intervenes. Only in 2 of our female cases we observed a definite relapse at a distance of several months from delivery without there being a new pregnancy to account for it.

(7.)—TERMINATION.

In cases evolving to an unfavourable termination death usually occurs in a state of extreme exhaustion or by syncope. In pregnant women the shock following delivery may cause death; 2 very sudden cases were suggestive of pulmonary embolism. The infants, if living, are usually very much under weight, (around 3 lbs.) and lack vitality, often living only a few minutes or hours. Melena, on the third day, was the cause of death in two instances.

(8.)—MORTALITY.

On 7 cases in adult males, all treated, no deaths were registered. On 38 adult women, of which 35 pregnant, we had 6 deaths in mothers, of which 2 undelivered, 2 stillbirths and 8 deaths in premature or congenitally weak infants. Most of these deaths occurred during the first five months of our work before our organization was completed and before the estate residents had realized the value of early treatment.

During the past 15 months, on 181 deliveries, we have registered only 1 abortion, 1 stillbirth and 2 deaths in newly born infants caused by Megalocytic Anaemia. It is evident that treatment has had a profound influence on the death rate; it is, therefore, difficult to form an adequate idea of the natural mortality of this disease from the present series of cases.

If we take into account the previous histories of our pregnant female patients, we find that 35 women, of which 8 primipare, had in the aggregate 94 pregnancies: in 5 of these there was abortion; in 16 the infant was stillborn; in 17 the child died within a few days after delivery. Two mothers died undelivered. In conclusion, there was failure in 40 out of 94 pregnancies, and 6 maternal deaths. If appropriate and adequate treatment had not been applied this list would undoubtedly be very much longer.

It is practically impossible from registration records to form an adequate opinion as to the actual number of deaths caused by Megalocytic Anaemia in the past, when the disease was not recognized and deaths registered under other diagnoses. Moreover, the highest mortality occurs in infants and all such deaths are registered under the vague terms of *prematurity* and *congenital debility*.

At Blairmont, during the 20 year period, 1914-1933, 49 deaths were registered under the diagnosis of anaemia or ankylostomiasis. Of these 10 were males and 39 females, *i.e.* a proportion of 1 male to 4 females. In 11 instances death followed parturition.

With 1,283 births registered during this period there were 297 deaths in infants within the first year of life, *i.e.* an infant mortality of 233 per thousand live births. 117 of these deaths or 39.3 per cent. were caused by prematurity and congenital debility. 156 stillbirths were registered (121 per thousand live births).

At Bath, during the same period, 19 deaths were certified as due to anaemia or ankylostomiasis; 4 of these were males and 15 females, the proportion being slightly below 1 male to 4 females. In 3 cases death followed parturition.

With 1,493 births there were 194 deaths in infants below 1 year; 61 of these deaths or 31.4 per cent. were caused by prematurity and congenital debility. 78 stillbirths were registered. The infantile mortality amounted to 130 and the incidence of stillbirths to 52.2 per thousand live births.

At Providence, during the same period, 8 deaths were certified as anaemia or ankylostomiasis; 5 females and 3 males. On 268 births there were 63 deaths in infants below 1 year; 25 of these were due to prematurity and congenital debility. 37 stillbirths were registered. The infantile mortality amounted to 235 and the stillbirth rate to 138 per thousand live births; 40 per cent. of the infant mortality was caused by prematurity and congenital debility.

These figures indicate that in the past deaths from anaemia in adults have been frequent and that females have suffered far in excess of males, such deaths often being connected with pregnancy and parturition. They show, moreover, that over *one third of our infant mortality is due to prematurity and congenital debility, i.e., to maternal disease.* A similar origin must be ascribed to the large number of stillbirths occurring on the estates.

Syphilis is responsible for only a very small fraction of these deaths; it is more frequently a cause of abortion in the early months of pregnancy. Acute maternal illness or toxaemia may occasionally play a part, but according to our experience of the past 20 months there can be little doubt that Megalocytic Anaemia in the expectant mother is and has been the main cause of maternal, foetal and neo-natal deaths on our estates. The recognition and appropriate treatment of this disease has already resulted in a remarkable fall in the neo-natal and infant mortality.

(9.)—Diagnosis.

The diagnosing of Megalocytic Anaemia can only be established by taking into account all the data furnished by the history and clinical examination of the patient and by a careful and detailed study of his blood picture. The diagnosis is confirmed *ab juvantibus*, by checking the results of the specific liver and Marmite treatment. The following conditions have to be considered in every case.

Ankylostome Anaemia: Both sexes and all ages are affected; the anaemia is in most cases of hypochromic, microcytic type; the indirect Van den Bergh reaction is negative; A.D. ova are present in the stool. The number of A.D. passed after treatment and control re-examinations of the stool should be carried out. Occasionally the anaemia may acquire a megalocytic character but the indirect Van den Bergh reaction remains negative. In one of our cases, a child of 11, with very grave anaemia and a heavy A.D. infection, the average R.C. diameter was above normal (8 microns), but the indirect Van den Bergh and Fouchet reactions were quite negative. Response to liver treatment was doubtful until after the A.D. infection was eliminated, (189 worms). The correct diagnosis, in this case, is Ankylostome Anaemia of megalocytic type.

Malarial Anaemia: The anaemia, usually associated with acute or chronic malaria, presents a haemolytic, hypochromic, microcytic character; anisocytosis, poikilocytosis and polychromasia are usually all marked. The indirect Van den Bergh reaction is positive and a high reticulocyte count is frequent. In this Colony, the finding of malaria parasites in the blood or the presence of a large spleen are, by no means, conclusive signs. In East Indians such anaemias, especially under the strain of pregnancy, may suddenly acquire a megalocytic character, evolving to typical Megalocytic Anaemia. The relation of this disease to malaria has already been discussed.

(10.)—Previous studies on Anaemia in British Guiana.

As far back as 1904, Kennard described under the name of "acute anaemia" a grave disease affecting East Indians of both sexes, but definitely more prevalent in pregnant women. In two further papers appearing in 1904 and 1906, he gave a very accurate clinical description of this condition.

As far as possible we will make use of Kennard's own words in reviewing these important and unfortunately much forgotten contributions to the medical literature of this Colony.

"The chief signs are, a marked degree of anaemia with very pale tongue and mucous membranes, coming on rapidly, usually with fever which is often marked; the spleen is usually enlarged, often markedly so; there is frequently some little albuminuria; and some oedema of the feet and face and, in severe cases, some general oedema. With the general symptoms of anaemia, there is history of vomiting, particularly so if there is any fever and then it is usually of a bilious nature, or if not there is indigestion and gastro-intestinal disturbance; the stools are of a distinctly yellow colour and show undigested food and may show ankylostoma ova, but regarding the presence of ankylostoma ova I do not lay stress of a ny kind on as I explain later. The condition of the blood is watery and characterised by the presence of megaloblasts and megalocytes which is so marked, especially in cases accompanied with fever, that I have taken them along with the general signs of anaemia as the diagnostic point which can be made out by anyone without the necessity of a prolon ged search or elaborate counting as is usual in blood examinations; as far as I can make out, the changes in white blood corpuscles are slight—sometimes a little increase of small lymphocytes, sometimes of the larger ones." . . . . .

"The duration of the disease varies very much, some cases even the most severe being over in two or three months whilst some go on for 18 months or 2 years, and some, after an apparent perfect recovery, get a recurrence." . . . . .

"Of these 21 cases (10 men, 11 women), six have had distinct recurrences, that is, they have become apparently perfectly recovered and after have had a return of the same disease."

In practically all his cases, Kennard noted evident heart symptoms with dyspnoea, palpitations, haemic murmurs, oedema of the feet, sometimes ascites; in only one case he mentioned glossitis and stomatitis. There appear to have been no signs pointing to involvment of the central nervous system. In the last of his papers he recorded having seen the disease in a Negro woman.

In the haematological picture he insisted on the characteristic anisocytosis with general increase in the size of the red cells, on the prevalence of macrocytes and on the relative frequence of nucleated cells, which he termed megaloblasts. . . . . .

As regards the actual cause of the disease Kennard attributed importance to "general unhealthiness," noting the disease appeared to prevail in years in which general morbidity was high. Concerning malaria he pointed out that "the malara parasite or pigment was rarely seen; secondly, the fever was not of a malarial type; thirdly, quinine did more harm than good; fourthly, it was not noted to occur in cases that frequently suffered from attacks of malaria fever, although some of them became distinctly anaemic; fifthly, the blood changes are not like those that occur in malarial fever. At the same time, as a markedly enlarged spleen is usual in these cases a malarialised constitution may have something to do with it."

He excluded ankylostomiasis as the cause of the disease, pointing out that the finding of ova in the stool was no argument one way or the other, the infection being widespread. Moreover, even in severe cases of hookworm the blood and clinical picture were distinct. He described an interesting case of severe ankylostomiasis which made a complete recovery, but which developed typical "acute anaemia" one year later when pregnant and free from hookworm disease.

Recognizing this anaemia to be similar but not identical to idiopathic pernicious anaemia he concluded: "I can get no further in the diagnosis than acute anaemia of a pernicious character possibly arising from gastro-intestinal absorption."

As regards treatment, Kennard was averse to quinine and anthelmintics; he advised careful dieting; soda and pepsin for dyspeptic symptoms; calomel and salts for bilious vomiting and arsenic in progressive doses; sometimes iron at a later stage. Kennard performed one post mortem examination but his report does not throw much light on the pathology of the condition.

There can be no doubt that Kennard's "acute anaemia" is identical with acuter forms of Megalocytic Anaemia which we have described.

In 1905 Douglas, under the title of "Ankylostomiasis in Pregnancy" described 3 fatal cases which are very suggestive of Megalocytic Anaemia.

In 1906, Wise published some observations on 11 cases of grave anaemia, 10 of which were fatal, which he studied in the Georgetown hospital. Nearly all these cases were admitted *in extremis* and were under observation for only short periods. Six were males (5 East Indians and 1 Negro) and 5 were females (2 Negroes and 3 East Indians); of these 4 were pregnant. Only very summary clinical descriptions are given; attention is drawn to the very acute character of some cases. The red cell count ranged from 660,000 to a maximum of 2,300,000 per c.mm; as an average it was below 2,000,000. The colour index given in 8 cases, ranged from 0.54 to 0.90; no information is given as to the hæmoglobin scale used for its determination. The white cell counts showed slight reduction, around 5,000 per c.mm. with a relative increase of lymphocytes. Nucleated red cells were present in all cases, except one, varying in number from 1 to 17 per 100 leukocytes. Wise differs from Kennard by regarding these cells as normoblasts mainly; megaloblasts were noted in 5 cases all of which gave high normoblastic counts (6 to 14 per 100 leukocytes).

On blood films obtained from 2 of Kennard's cases Wise found the average red cell diameter to be 8.1 and 8.2 microns respectively. As regards the qualitative changes Wise noted "irregularity" in size of the corpuscles varying from 0.0032 to 0.0093 mm; in general prevalence of the larger kinds, microcytes not being common; pallor of the corpuscles, poikylocytes, polychromatophilia and basophilic reaction.

Reviewing the general characters of the blood, Wise concludes "there is little question but that it represents a severe type of secondary anaemia."

Post-mortem examinations were made in 10 cases. Very marked pallor of all the organs and oedema ranging to general anasarca was present in all; icterus in two; typical fatty degeneration of the heart, described as "thrush breast," was noted in 8; in one it was slight and in only one absent; the spleen weight ranged from 12 to 52 oz.; only in 2 cases, both Negroes, the spleen was normal, or only slightly enlarged (4 and 7 oz. respectively). The kidney and liver are described as "dusky chrome" in colour, the latter being usually somewhat enlarged. Haemorrhages in the liver were noted in some cases; ankylostomes, in varying numbers, usually few, were found in the intestine; the spleen, liver, kidney and heart gave a positive Prussian blue reaction in many but not all cases.

Histological examination was carried out in 5 cases, but not pursued, owing to the similarity of the lesions observed in all. The following were the main tissue changes: fatty interstitial infiltration of the myocardium; advanced fatty degeneration of the hepatic cells with haemosiderosis, diffuse small cell infiltration and increase, in the fibrous tissue in the portal spaces; grave fatty degeneration of the renal epithelium with haemosiderosis. Unfortunately no information is given on the macroscopic and microscopic changes in the bone, marrow and spleen.

Wise regards these findings and particularly the "dusky chrome" colour of the kidneys, as typical of ankylostomiasis, and concludes "I therefore feel sure that the cases described above are merely cases of chronic ankylostomiasis dying in the last stages of anaemic progression. The fact that in many of the intestines ankylostomes were absent does not in any way invalidate this point of view. The share of the work of the *Ankylostoma duodenale* in producing this chronic condition has been performed many months before the patient arrives in hospital. . . . The A.D. may have totally left the body, yet the chronic ankylostomiasis cachexia will remain and cripple the individual to death."

It is probable that the series of cases studied by Wise, included anæmias of varied nature; in this connection the high percentage of males and Negroes should be noted. Unfortunately there are not sufficient data in the clinical, hæmatological or anatomical descriptions, from which to form a definite opinion. Wise concludes for a secondary anæmia; in most of his cases the colour index is in fact below 1, but no information is given as to the hæmoglobin scale adopted for its determination. The importance of this point has already been dsiscssed. The lesions described *post-mortem* are by no means pathognomic of ankylostomiasis, as they are found in equally typical form in pernicious and megalocytic anæmia.

Wise, with this paper, set the study of anæmia back to starting point; it is evident that Kennard's brilliant and early effort to discriminate among the various local anæmias did not receive the attention it deserved and his work was soon forgotten.

(11.)—Tropical Megalocytic Anaemia in the East.

Tropical Megalocytic Anæmia has been the object of much attention, of late years in the East, in India, Malaya and China, and on the West Coast of Africa. It is classed with other serious anæmias due to lack of the Pernicious Anæmia factor and is a disease of young adults and, prevalently, affects pregnant females. This condition, though closely related, is distinct from Addisonian pernicious anæmia: according to the descriptions furnished by Indian authors, the following are the main diagnostic points:

	PERNIC. ANAEMIA.	TROP. MEGAL. ANAEMIA.
Age Incidence:	Over 35 years:	Below 35 years:
Glossitis	...Nearly constant.	Occasional.
Achlorydria	...Constant.	Rare
Nervous Symptoms	...Very frequent.	Absent.
Poikilocytosis	...Marked.	Absent or slight.
Ind. V.D.B. Reaction	...Positive.	Negative.
Curability by Marmite	...Doubtful.	Nearly constant.

Wills considers this disease to be distinct from the Megalocytic Anæmia of pregnancy described in temperate climates, as in the latter condition there is *increase in the serum bilirubin* and *the indirect Van den Bergh reaction is positive.* It has already been noted that in the Megalocytic Anaemia we have observed in this Colony, the indirect Van den Bergh reaction is practically always positive.

In India the high incidence of Megalocytic Anaemia and the high mortality it brings about in young mothers have caused this disease to be regarded as a grave social problem of that country.

According to Margaret Balfour (1927) it accounted for 87 or 35.65 per cent. of 244 maternal deaths registered in a series of 11,343 labours, from different parts of India. This same author, (1933), found even a higher incidence of the disease during an investigation in Assam tea gardens, among coolies imported mainly from the United and Central Provinces, Bihar and the Madras Presidency. We have not been able to obtain figures concerning the neo-natal mortality and stillbirth rate caused by this disease in India.

Megalocytic Anaemia responds well to liver therapy, but Wills has shown that it constantly reacts and can practically always be cured by the autolized yeast extract "Marmite." She has shown (1933) that the effective haemapoietic factor of Marmite does not identify itself with vitamine B. or any of its known fractions, B1, B2, or B4. It is present both in watery and alcoholic extracts and in autoclaved Marmite; she failed to find it in any other of the yeast extracts with which experiments were carried out.

The fact that Megalocytic Anaemia prevails in races whose diets are notoriously deficient, that the disease is commonly occasioned by the pregnant state when an extra strain is thrown on the nutritional requirements of the mother, and finally, Wills' researches on the curative value of Marmite, all tend to suggest that Megalocytic Anaemia is essentially a nutritional or *deficiency disease.*

This deficiency can be filled either by the administration of the ready formed pernicious anaemia factor contained in liver or by Marmite; it remains to be elucidated if the haemopoietic fraction of Marmite corresponds to what Castle has called the "Extrinsic anti-anaemic factor" of pernicious anaemia. It has been suggested that tropical Megalocytic Anaemia is simply a deficiency disease caused by lack of this extrinsic factor in the dietary; this deficiency can be rectified by the administration of Marmite. In pernicious anaemia, on the contrary, in which Marmite is far less effective, the organism has lost the power of forming the P.A. factor from the extrinsic factor, and relief from symptoms can only be obtained by the administration of liver which contains ready formed P.A. factor.

(12.)—Treatment.

(*a*) *General.*—With very few exceptions all our cases are malarial subjects. A ten day course of quinine, gr. 10 b.i.d. for an adult, is given as a routine, both in males and females, in pregnant and non-pregnant cases. When A.D. ova are found in the stools anthelmintics are withheld till the patient is convalescing. Subjects giving a positive Meinicke reaction are placed on mercurial treatment in the form of 1 per mille solution of *hydrarg lactas*; 1 drach. b.i.d. is the usual dose. This salt is well tolerated by the stomach, a point of importance, in these patients who always give evidence of defective gastric digestion. In grave cases this treatment is started only after the anaemia has been got under control and the patient has entered convalescence. In pregnant females treatment is continued till after delivery.

Dilute hydrochloric acid M. 10 to 15 is given at meals with water and orange juice; it rapidly relieves flatulent dyspepsia, assists digestion and stimulates appetite. Septic conditions, if present, receive due attention.

(*b*) *Liver.*—Every one of our cases which has been placed on liver treatment has reacted; in the majority of cases this response has been remarkable and in some dramatic.

Liver can be given fresh, raw or cooked, or in the form of extract; the latter can be for oral, intramuscular or intravenous administration. We have found all these forms of liver therapy active.

Fresh liver on the Estates, is difficult to procure in sufficient and regular quantity; beef liver is refused by many Hindu patients out of religious principle so that sheep's liver must be procured; preservation is difficult where proper refrigerators are not available; this form of treatment, in conclusion, presents various difficulties, it is fairly expensive and distasteful to the patients, who try and evade it.

The cost of peroral liver extracts is prohibitive; this places them beyond the means of the average East Indian labourer and the vote of estate hospitals.

We now make exclusively use of liver extracts administered by intramuscular injection. We have experimented with two preparations, "Campolon" (Bayer) and "Hepatex" (Evans), with equally good results. "Campolon," being considerably less expensive in spite of the high import duty to which it is liable, evidently represents the preparation of choice.

Liver extract can be injected either daily in small doses (2cc), or by the depot method, in larger doses spaced at intervals of several days according to the requirements of individual cases. The latter method, as the most rapidly effective, the cheapest and the most acceptable to the patient, is the one we have adopted.

Injections are given deep in the upper and outer portion of the gluteal muscle as is practised for the administration of quinine. The average dose, for an active case, is 5 cc. per injection at intervals of 4 days. In mild or convalescent cases this interval may be increased to 6, 8 or 10 days; in grave or urgent cases daily doses of 8 or 10 cc. may be required for the first injections. The dose and spacing of the injections should be determined, not only by the degree of the anæmia, but more particularly by the reticulocyte reaction which is obtained; this reaction should be followed by daily reticulocyte counts.

Two of our cases, a male and a female, after having responded satisfactorily to intramuscular injections (Hepatex I.M. in the first, Campolon in the second case), suddenly suffered very grave relapses whilst still under this treatment. Both these cases appeared desperate: the male had reached an extreme degree of exhaustion; he was unconscious, feebly restless and apparently blind. In the female, who was in the 8th month of pregnancy, there was heart failure with dilatation and recurring fainting attacks. In both cases the red cell count was below a million. There can be no doubt that the lives of these patients were saved by *intravenous* administration of liver extract in the form of "Hepatex" P.A.F. (Evans). The effect of this treatment in the first case was most impressive as, hour by hour, one could assist to the gradual return of life and consciousness in a patient who had already reached the pre-agonic stage; 6 intravenous quotidian injections were given, followed by a long series of intransmuscular injections and later, Marmite. In the second patient response was equally evident and improvement was sufficient to enable her to support the strain and shock of labour which took place at term 29 days later; the child, though well nourished, was still-born. In the interval 12 intravenous 5 cc. injections of "Hepatex" P.A.F. had been given. Both these cases have made a good recovery and are working in the fields.

No ill-effects have been noted following intransmuscular injections as long as these are given deep in the muscle. Intravenous injections of "Hepatex" must be given very slowly; faintness and vertigo are frequently experienced by the patient during the injection, and the pulse may be affected; it is therefore advisable to administer a preliminary injection of strychnine or caffein.

"Campolon" is issued by its makers as an extract for intramuscular use, but I have recently been advised by Messrs. Bayer-Meisterlucius that it has been successfully used by the intravenous route by Gansslen in cases of pernicious anaemia; they do not generally recommend this method of treatment which should be reserved for special cases and administered only by an expert.

Marmite: It is important that Marmite, when used, should be given in adequate doses. The average dose we now use is 2 drach. (by weight) twice daily. This amount may have to be increased in some cases; it may be reduced by half when only maintenance treatment is required. It is given in water, milk or in the food.

Excellent results have been obtained with this preparation though its action may not be quite as prompt as that of liver extract injections. With the latter, in fact, by the depot method, it is possible to administer *ab initio* a maximal dose.

For the treatment of individual cases the question of choice between liver extract and Marmite is evidently a point of importance: liver extract, as has been noted, is more rapidly effective; its administration by the depot method causes very little inconvenience to the

patient and it does not interfere with the already deranged gastric function. On the other hand it is expensive and can only be given by the physician or by a skilled attendant.

Marmite has the advantage of being a vegetable extract and as such is well accepted by the Hindus ; it is taken *per os* so that its administration may be entrusted to the patient or to non-skilled assistants or relatives, but, above all, Marmite is cheap. On the other hand, when Marmite has to be exhibited in large doses its high contents in salt requires much fluid to be given as diluent ; this may be a source of difficulty in grave cases with impaired gastric function, vomiting and heart failure.

Taking into account these various points, liver or Marmite is chosen according to the special conditions of individual cases ; usually a combined treatment is the most satisfactory : liver, in fact, rapidly relieves symptoms and in pregnant cases removes the very serious danger of premature labour ; Marmite, on the contrary, finds its ideal indication in maintenance treatment which can be prolonged for months or even years at a very reasonable cost.

In mild or initial cases, in males, in non-pregnant females and in pregnant females who who have not yet completed 6 months of gestation, the treatment of choice is Marmite, continued at least for 1 month after clinical and haematological cure, and in case of pregnant females for 1 month after delivery. We use liver extract by intramuscular injection in advanced and acute febrile forms, in pregnant females who come up for treatment when already beyond the 6th month and finally in cases which have not reacted satisfactorily on Marmite treatment alone. When these patients enter convalescence Marmite treatment may be associated or substituted for liver. Intravenous liver extract treatment should be strictly reserved to cases in which intramuscular injections and Marmite have failed.

Other Treatments.—It has already been noted that most of our patients suffer in the first place from variable degrees of secondary anaemia which is widespread among the East Indian labourers, its intensity being mainly related to the local incidence of malaria. At Blairmont, for instance, the average haemoglobin percentage of residents is 65 per cent. (Hellige scale) ; at Bath, with a much lower malarial endemicity, the average figure is 75 per cent. However actively a patient may react to liver or Marmite, it is practically impossible with these treatments alone to bring his haemoglobin value above such figures ; but a certain amount of further improvement can be obtained, in most cases, if iron and arsenic are added to the treatment at this stage.

Diet.—In acute forms the diet should be light and nutritious ; as soon as possible eggs and meat should be given. Bulky carbohydrates are best avoided till convalescence is well on the way ; subsequently most cases appear to do quite well on the ordinary East Indian diet.

Reticulocyte Reaction.—The earliest evidence of response to liver or Marmite is given by the reticulocyte crisis or reaction which usually becomes apparent around the 5th. day from the beginning of treatment. The occurrence of such a reaction clinches the diagnosis of Megalocytic Anaemia. It can be detected by the carrying out of daily reticulocyte counts.

In pernicious anaemia it has been found that the entity of this reaction depends on the initial level of the red cell count ; when this value is known it is possible to estimate with an approximation of 2 per cent. the maximal reticulocyte reaction which may be expected in a given case if an adequate amount of liver is administered. Conversely, if the reaction obtained is below the estimated reaction, this is evidence that the amount of liver administered is insufficient and the dose should be increased.

We quote the following Table from Vaughan :

TABLE V.

Approximate relation of reticulocyte production at peak of rise to initial red cell count in response to daily administration of liver extract derived from.

Oral : 300-400 grams.
Intramuscular : 10-15 grams.

Initial Value R.B.C. in millions.	Approximate Reticulocyte count % R.B.C.
0.5	55
1.0	35
1.5	22
2.0	14
2.5	8
3.0	4

It appears probable that parenteral therapy gives rise to a readier and higher reaction than does oral treatment.

In our anaemia cases treated with liver or Marmite we have noted typical reactions, which in their mode and entity closely followed the proportions shown in the above table. In one case the reaction was much above estimate. The following are some examples :

Case. Parmie. 18 years. Female. Pregnant.

18.12.34. Initial R.C. count 1,650,000 ; Reticulocytes : 0.84%.

Treatment : " Campolon " 6 cc. at 5 days' interval.

19.12.34	Reticulocytes :	3 %
20.12.34	,,	8 %
22.12.34	,,	9 %
26.12.34	,,	20 %
28.12.34	,,	15 %
30.12.34	,,	5 %
2. 1.35	,,	2 %

Case. Somaria. 24 years. Female. Not pregnant.

18.12.34 Initial R.C. count 2,550,000 ; Reticulocytes : 3%

Treatment : " Campolon " 6 cc. at 4 days' interval.

20.12.34	Reticulocytes :	5 %
22.12.34	,,	12 %
26.12.34	,,	10 %
30.12.34	,,	5 %
2. 1.35	,,	1 %

Case. Pertab. 17 years. Male.

3.1.35. Initial R.C. count 1,650,000 ; Reticulocytes : 7%.

Treatment : Marmite drach. 2 b.i.d.

5.1.35	Reticulocytes :	10 %
7.1.35	,,	24 %
9.1.35	,,	52 %
10.1.35	,,	54 %
11.1.35	,,	30 %
17.1.35	,,	8 %
31.1.35	,,	10 %

This case showed a high initial reticulocyte count ; the reticulocyte reaction was far in excess of the expected value (20 per cent). The reticulocyte count was still abnormally high 1 month after the beginning of the treatment.

Case. Alfred. 24 years. Male.

15.4.35 Initial R.C. count 2,100,000 ; Reticulocytes : 3%.

Treatment : Marmite drach. 2 b.i.d.

17.4.35	Reticulocytes :	5.1 %
22.4.35	,,	8 %
26.4.35	,,	20 %
30.4.35	,,	18.7 %
2.5.35	,,	4.7 %
5.5.35	,,	3.8 %

Case. Rasulan. 22 years. Female. Pregnant.

11.1.35 Initial R.C. count 1,650,000 ; Reticulocytes : Nil.

Treatment : Marmite drach. 2 b.i.d.

15.1.35 R.C. count 1,250,000 ; Reticulocytes : 4%.

Treatment : " Campolon " 6 cc. at 4 days' interval.

18.1.35	Reticulocytes :	30 %
20.1.35	,,	15 %
21.1.35	,,	10 %
3.2.35	,,	0.5 %

Intercurrent diseases, such as malaria, influenza, bronchitis, etc., may retard the reticulocyte reaction: this is well shown in the following case which developed a severe influenzal bronchitis on the 3rd day after admission; some reaction was present on the 6th day, but the peak was only noted on the 18th day.

Case. Somaria No. 2: 20 years. Female. Specific. Pregnant.

12.5.35 Initial R. C. count 1,900,000; Reticulocytes: 4%.

Treatment: "Campolon" 5 cc. every 4 days.

15.5.35	Reticulocytes:	5 %
17.5.35	,,	1.8 %
19.5.35	,,	4.6 %
21.5.35	,,	8 %
23.5.35	,,	9.8 %
25.5.35	,,	10.5 %
27.5.35	,,	11.7 %
30.6.35	,,	44.5 %
2.7.35	,,	46 %
4.7.35	,,	43.6 %
6.7.35	,,	39 %
8.7.35	,,	11.5 %
10.7.35	,,	7.5 %
15.7.35	,,	2.5 %

It should be noted that the initial reticulocyte count is frequently above normal in our cases (4 to 8 per cent.) and that similarly high counts are common in ordinary malarial anæmia. (We have seen cases with a count of 14 per cent). It is, therefore, important to carry out a preliminary reticulocyte count before beginning treatment.

The reticulocyte reaction and clinical improvement which follow liver treatment have conclusive diagnostic importance as they prove the anaemia to be due to deficiency of the P. A. factor.

We wish to express our indebtedness to Messrs. Bayer-Meister Lucius, and their local agents, Booker Bros. McConnell & Co. Ltd., for kindly placing at our disposal a generous amount of "Campolon" liver extract for experimental purposes, and to the Marmite Food Extract Co., Ltd. from whom we received ample supplies of Marmite for the carrying out of our preliminary investigations.

(13.)—Designation.

A certain amount of confusion exists in the nomemclature adopted to designate the various types of Megalocytic Anaemias which have been described in temperate and tropical climates. These can be classified as follows:

(*a*) Megalocytic Anaemia of Pregnancy, of temperate climates. A form apparently restricted to pregant women, characterized by a positive indirect Van den Bergh reaction.

(*b*) Tropical Megalocytic Anaemia (including Tropical Anaemia of Pregnancy) a common disease in the East, affecting both sexes but prevailing in pregnant females, characterized by a negative indirect Van den Bergh reaction.

(*c*) The Megalocytic Anaemia which we have described, which affects both sexes, though prevailing in pregnant females, giving a positive indirect Van den Bergh reaction.

As regards the second and third of these forms, even if the pregnant state is by far the most frequent *occasional factor* in their etiology, the designation "Anaemia of Pregnancy" can not be used appropriately once it is recognized that the disease may arise apart from the pregnant state and in males. Both in the Eastern type and in the condition we have found in this Colony males are affected as well as females.

At the present stage of our knowledge it would appear simpler to indicate these closely related anaemias under the generic denomination of Tropical Megalocytic Anaemia comprising two sub-forms based on the findings of the indirect Van den Bergh reaction.

The exact nosological position of Megalocytic Anaemia of pregnancy recorded in temperate climates remains to be decided; from the descriptions given it would appear to be identical with the anaemia we have described in this Colony when it occurs during pregnancy.

(14.)—Curability.

In Addisonian pernicious anaemia, as is well known, liver treatment must be continued for very long periods and probably throughout life, owing to the danger of relapses and of serious central nervous degeneration. Tropical Megolocytic Anaemia, on the contrary, is

regarded as definitely curable if an adequate course of liver or Marmite treatment is carried out. Megalocytic Anaemia of pregnancy of temperate climates tends to spontaneous cure after delivery and is reported not to relapse.

We have not, so far, been able to follow our patients over a sufficiently long period to ascertain the relapse rate and the permanence of the cures as yet obtained. Two of our pregnant patients who had apparently made a complete recovery suffered typical relapses when their next pregnancy supervened. The histories of nearly all our pluriparous patients illustrate this feature of the disease to recur, frequently, in successive pregnancies. In such cases, evidently, Marmite treatment should be instituted as soon as pregnancy has been diagnosed. All the cases of this type we have handled have done very well, enjoying good health during pregnancy and delivering large, healthy and well nourished babies.

In the interval, between pregnancies, nothing abnormal can be detected in these women; we have recently carried out a re-examination, both physical and haematological, of 20 women whom we treated for Megalocytic Anaemia during their last pregnancy: nothing of note was found; the Fouchet and indirect Van den Bergh reactions were constantly negative.

In males, the disease is more tenacious and longer periods of treatment are necessary while relapses are more frequent. On 4 cases we have re-examined, whilst apparently in good health, 3 gave a positive indirect Van den Bergh reaction (6,2, and 0.5 units respectively), 1 only being negative.

(15.)—Cost of Treatment.

Megalocytic Anaemia affects mainly the poorer classes of the rural East Indian community: such patients, in most cases, are unable to pay for their treatment; the question of cost, therefore, is one of particular importance.

For an average mild case in a pregnant woman treated with Marmite only, for a period of 6 months, 5½ lbs. of Marmite would be required at the cost of $4.50. (Marmite can be obtained in this Colony by hospitals at the price of 82 cents per lb.).

In severer cases requiring additional liver extract treatment, the expense is very considerably higher: the local wholesale price of "Campolon" in 5 cc. ampoules, is 53 cents per tube; as an average 6 to 12 such injections may be required. Hepatex P.A.F., for intravenous treatment, when directly imported costs $1.60 per 5 cc. ampoule. Local retail prices are very much higher than those we have quoted.

These figures show that if Megalocytic Anaemia is to be treated, and mothers and infants saved, considerable expense must be incurred; the brunt of this expense will have to fall on estate hospitals, maternity welfare centres and public hospitals.

As remarked in the first paragraph of this report, in Megalocytic Anaemia we have identified a disease of first class social and economic importance as one, and probably the main cause of failure in the increase of the population of some estates and rural districts of this Colony. We should like to conclude this report by recommending that Marmite and, eventually, other approved, similar preparations, and liver extracts for the specific treatment of Megalocytic Anaemia should be exempted from importation duty in the same way as is practised for anti-syphilitic, anti-malarial and anthelmintic preparations.

Conclusions:

(1) The results of an investigation carried out during the past 21 months on the Estates of Blairmont, Bath and Providence in the county of Berbice, are submitted.

(2) Attention is drawn to the very high incidence of a form of Megalocytic Anaemia among East Indians in this Colony.

(3) During nearly ten years' previous experience in the interior among Negroes, Aboriginals and people of mixed races, the disease was not observed.

(4) The disease affects both sexes, but is very much more frequent in women (6 : 1), being usually brought on by the pregnant state.

(5) As a grave complication of pregnancy it is a frequent cause of maternal death; much more frequently it caused the death of the foetus (miscarriage, stillbirth) or of the newly born child through prematurity or congenital debility.

(6) In the past, this disease has undoubtedly been the main cause of maternal and neonatal mortality and stillbirths on the Estates, over one-third of the infant mortality during the past 20 years being due to prematurity and congenital debility *i.e.* to maternal diseases.

(7) In males the disaase tends to run a chronic course with relapses and exacerbations, causing more or less complete disability and invalidism.

(8) This form of Megalocytic Anaemia, though generally similar, can not be identified with Tropical Megalocytic Anaemia of India, other Eastern countries and the West Coast of Africa; practically all our cases, in fact, gave a positive indirect Van den Bergh reaction. In

this respect our anaemia resembles the Megalocytic Anaemia of pregnancy described in temperate climates.

(9) A heavy ankylostome infection may give rise to an anaemia of megalocytic type, but the indirect Van den Bergh reaction remains negative. We have found no connection between ankylostome infection and the anaemia we are describing, its local distribution appears to be related to that of malaria.

(10) In the past the disease has been confused mainly with ankylostomiasis and malarial anaemia, in spite of the fact that, as far back as 1904, Kennard gave a very good description of its acuter forms, pointing out its pernicious character and ably differentiating it from ankylostomiasis.

(11) The disease, if taken in time, can always be cured either by the administration of liver or liver extracts; or by *Marmite*, an extract of autolysed yeast; or by a combination of these two treatments, as individual cases may require.

(12) Pregnant women suffering from this grave disease, if appropriately treated, with very few exceptions, rapidly recover and go to term normally, delivering strong and healthy infants frequently well above the average in weight. Lactation is satisfactory. All male cases treated, though showing a greater tendency to relapse, have made good recoveries, and from a condition of chronic invalidism, are now useful labourers in the field.

(13). Given the grave social importance of this disease, which mainly affects expectant mothers and newly born infants of the poorer classes of the East Indian agricultural community; given the considerable expense required for its treatment, which, by necessity, will fall mainly on Estate and Public Hospitals and on Maternity Welfare centres, a plea is entered for the exemption from importation duty of liver extracts, Marmite and, eventually, other similar preparations of recognized specific utility for the treatment of Megalocytic Anaemia.

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