

# **Report of the Principal Civil Medical Officer and Inspector-General of Hospitals / [Ceylon].**

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# ADMINISTRATION REPORTS, 1907.

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PART IV.—EDUCATION, SCIENCE, AND ART.

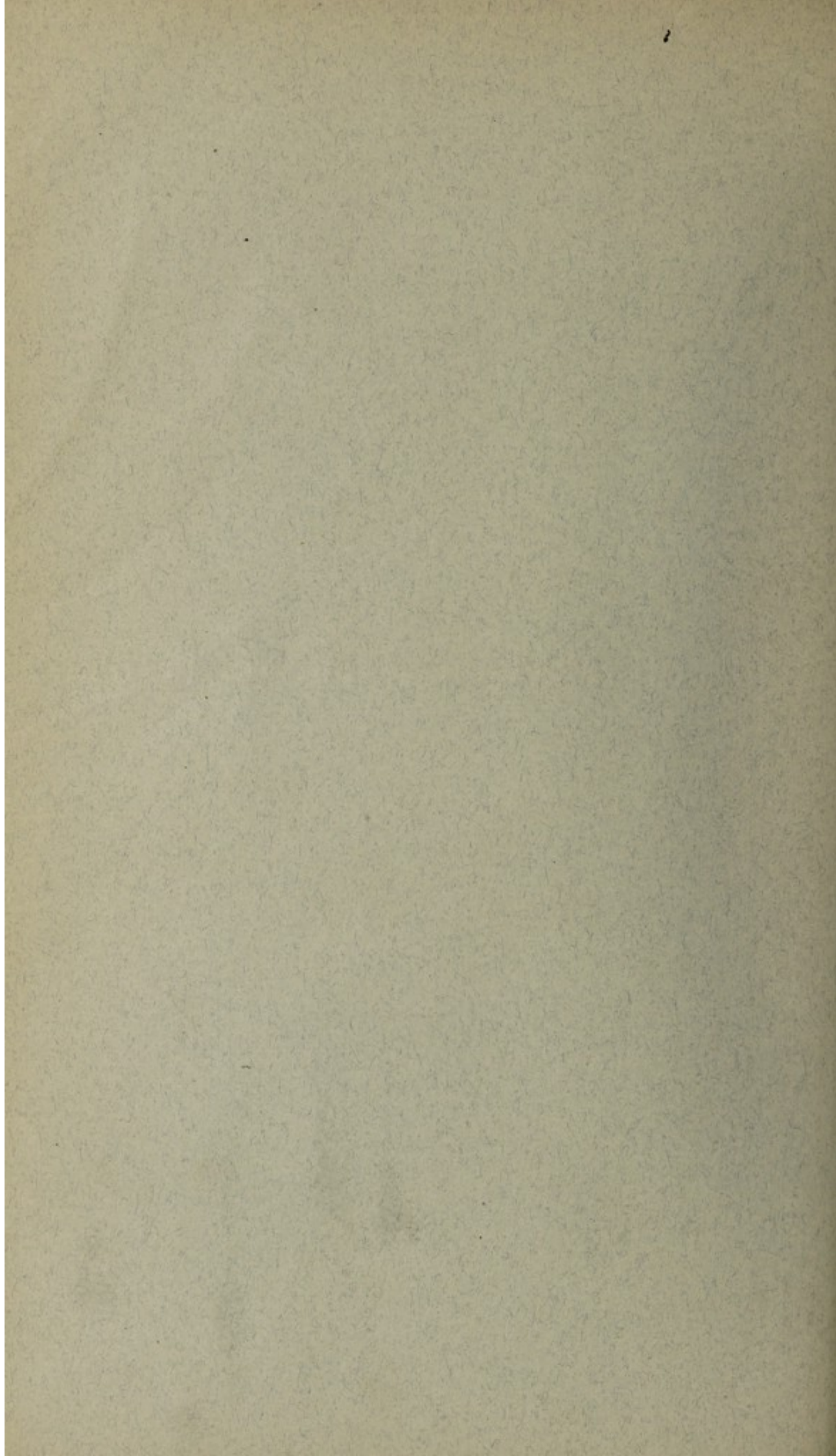
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## MEDICAL.

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REPORT OF SIR ALLAN PERRY, M.D.,

*Principal Civil Medical Officer and  
Inspector-General of Hospitals.*







# MEDICAL.

## REPORT OF THE PRINCIPAL CIVIL MEDICAL OFFICER AND INSPECTOR-GENERAL OF HOSPITALS FOR 1907.

I HAVE the honour to submit for the information of Government the Administration Report of the Medical Department for the year 1907. I was on leave during February, March, and April, when Dr. C. T. Griffin, Assistant Principal Civil Medical Officer, performed my duties.

### SECTION I.—POPULATION ; BIRTH- AND DEATH-RATES.

2. The estimated population of the Island on December 31, 1907, was 3,988,064, exclusive of the military and shipping population. 130,403 births were registered and 119,377 deaths. The birth-rate was 32·8 per mille calculated on the estimated population at the middle of the year and the death-rate 30·1 per mille, as against 35·7 and 34·3 respectively in the previous year.

### SECTION II.—PUBLIC HEALTH.

#### *Vital Statistics.*

3. The public health during 1907 showed a marked improvement on the previous year, which was one of the worst on record. There was an absence of widespread malaria, and the outbreaks of cholera and smallpox did not attain large proportions. The greatest number of deaths occurred under diseases of the gastro-intestinal canal. Deaths from fevers came next. There were 72 registered deaths from cholera and 24 from smallpox. There were 105 cases of cholera and 126 cases of smallpox in 1907, as against 756 and 287 respectively in 1906.

4. The Western Province was the healthiest throughout the year, having an average crude death-rate of 24·3 per 1,000. The North-Central Province was the worst during the last three quarters of the year. The Province of Uva was the worst in the first quarter.

5. *The Infant Mortality* was highest in the first quarter, with an average of 225 deaths under one year to 1,000 registered births; Mullaitivu had the highest recorded infantile death-rate. In the second quarter the deaths were 174 to 1,000 registered births, with Puttalam the highest recorded. In the third quarter the numbers were 163 to 1,000, Mannar being the worst. In the fourth quarter the numbers were 177 to 1,000, Mannar being the worst.

#### 6. *The Health on Estates :—*

			Births. Per 1,000.		Deaths. Per 1,000.
First Quarter	..	..	25·0	..	39·6
Second Quarter	..	..	26·8	..	34·1
Third Quarter	..	..	26·6	..	32·7
Fourth Quarter	..	..	30·6	..	30·1

The chief causes of the number of registered deaths on estates were from debility and bowel diseases. The number of deaths registered from fevers was 663. From anchylostomiasis 556, from malarial cachexia 548. I am of the opinion the last two figures do not show a correct record as to the prevalence of those diseases; they should be taken together and be considered as deaths from anchylostomiasis (*dochmius duodenalis*). This disease is very general among the Tamil estate population, and is the indirect cause of many deaths that are attributed to other diseases.

7. The total number of deaths in Ceylon for 1907 was 119,377, as against 136,271 in 1906. The first quarter heads the list with 39,217, the second quarter follows with 29,103, then the fourth quarter with 26,090; the third quarter had the least number of deaths, viz., 24,966.

8. Under the heading Specific, Febrile, or Zymotic Diseases 54,964 deaths were registered. This group includes smallpox, chickenpox, measles, whooping cough, mumps, diphtheria, cerebro-spinal fever, simple and ill-defined fever, enteric fever, influenza, cholera, diarrhoea, dysentery, remittent fever, ague, malarial cachexia, zoogenous, venereal, and septic diseases.

9. Parasitic Diseases claimed 4,515 deaths, and are represented by thrush, intestinal worms (including *dochmius duodenalis*, &c.). There were 11,578 deaths returned under Constitutional Diseases, which includes deaths from rheumatism, cancer, tabes mesenterica, phthisis and other tubercular diseases, anæmia, leprosy, elephantiasis, and parangi.



10. 31,555 deaths were registered under the heading Local Diseases, and included deaths from nervous, circulatory, respiratory, digestive, urinary, integumentary, and parturition diseases. 10,664 deaths were registered under the heading Ill-defined Causes, and include deaths from such vague causes as dropsy, debility, tumour, hæmorrhage, &c.

11. *Phthisis*.—The number of deaths from phthisis, according to the Registrar-General's returns, was 4,096, as against 4,153 in 1906.

*Cancer*.—There were 148 deaths registered from cancer. There were 182 deaths from this cause in 1906.

12. *Parturition and Tetanus*.—Among "diseases of parturition" were 1,951 deaths, and 424 deaths from tetanus. The returns do not specify deaths from tetanus in the newborn, so it may be taken for granted that a large proportion of the total deaths from tetanus was due to so-called "accidents of childbirth." The word "accident" is a misnomer when applied to a disease which is preventible, such as tetanus is in the newborn.

13. *Snake-bite*.—There were 174 deaths registered from snake-bite, as against 168 deaths from the same cause in 1906. The proportion of deaths from snake-bite in 1907 was 1 in 22,919 of population, as against 1 in 23,720 in 1906. During the year all Government hospitals and dispensaries were supplied with Lander-Brunton's pocket cases of permanganate of potash for the treatment of snake-bite.

14. *Hydrophobia*.—There were 17 deaths registered from this disease. During the year a Pasteur Institute was established at Coonoor in the Nilgiris, to which a few persons went who had been bitten by dogs.

15. *Appendicitis*.—There were only 3 deaths registered as such from this disease, and they occurred during the third and fourth quarters of the year.

16. There were no deaths registered as following from the effects of vaccination, nor from plague, nor from beri-beri (as such).

#### *Principal Diseases.*

17. *Malaria*.—The total number of persons treated for this disease in the various hospitals and dispensaries during the year was 484,898, as against 700,541 in 1906. In some Provinces the reduction was as much as half. In the Northern Province, on the other hand, the numbers treated were greater than in 1906. It may be said that, generally speaking, the health of the public as regards malaria was good; the smaller number attacked was greatly marked in some parts of the Central and Uva Provinces, where last year epidemics of malarial fever assumed alarming proportions, and were responsible for much sickness and a heavy death-rate.

There can be no doubt that the meteorological conditions this year were more favourable than last year, and the amount of new land felled and opened up was less. These two factors had much to do with the less widespread of this disease.

In the jails, particularly the Colombo jails, cases of malarial fever were fewer than I ever remember. In these institutions the prophylactic administration of quinine was rigidly carried out.

18. The following prophylactic measures were taken against malaria:—Improvement in the sanitary surroundings of dwellings, the filling up of hollows, and better drainage. The effect of the wet seasons on malaria was anticipated by the free distribution of quinine before and during each monsoon. The Provinces mostly affected by the south-west monsoon rains were selected in May for the employment of quinine, viz., the Western, Sabaragamuwa, the Central, North-Western, and Southern; and in October the Northern, Eastern, North-Central, and Uva Provinces were selected for the north-east monsoon.

Last year distributors of quinine were employed on a daily wage. It was suspected that in many cases these men stayed at home and filled up false lists of people who had been given quinine. In 1907 paid distributors were discontinued, and quinine is now issued free at police stations, Government hospitals and dispensaries, &c., and to headmen and others whom the Government Agents consider trustworthy.

The arrangements described in my report for 1906 for the distribution of quinine among the school children were continued this year, with gratifying results.

19. The total amount of quinine issued from the Civil Medical Stores was 76,206 ounces, which cost Rs. 50,295-96.

20. *Cholera*.—There were 105 cases of cholera reported in 1907 with 62 deaths, one-seventh less than the numbers for 1906. The largest number of cases (33) occurred in the Western Province with 24 deaths, the Eastern Province came next with 31 cases and 21 deaths. Cases occurred also in the Northern Province, Southern Province, Province of Uva, and Province of Sabaragamuwa. The infection in most of these outbreaks was traced to India. Most of the patients were coolies recruited in Southern India, where cholera and smallpox are endemic. The disease broke out in the Western, Southern, and Eastern Provinces early in the year, and in the Northern Province in June.

21. *Smallpox*.—There were outbreaks of this disease in the Western, Central, Northern, Southern, North-Western, and Eastern Provinces. The total number reported was 126, with 24 deaths. The Western Province had 70 cases, with 13 deaths; the remaining cases were fairly equally distributed between the Northern, Southern, North-Western, and Eastern Provinces. The Central Province had only one case. The three remaining Provinces were free. Of the 70 cases in the Western Province, no less than 63 were treated in the Infectious Diseases Hospital, Colombo, and the infection in all these could be traced to Calcutta, Singapore, and Shanghai. The greatest number came from Calcutta.

22. The smallpox returns show the cases as smallpox and modified smallpox, also those with marks of vaccination and those without. There were 99 cases of smallpox and 27 cases of modified smallpox, with 22 and 2 deaths respectively. There were 13 unvaccinated persons among those attacked with smallpox and one unvaccinated person among the modified cases. The death-rates per cent. were for vaccinated persons 15.1, unvaccinated 50.

23. *Enteric Fever*.—The compulsory notification of cases of enteric fever is not possible throughout the Colony. It exists as a law in the Municipal towns, but in the smaller towns it is not enforced; therefore, the incidence of this disease can only be gauged by the number of cases returned from the various



hospitals, and I know that these figures are understated. The official figures for the year 1907 are 696 cases, with 157 deaths. These numbers do not include cases that occurred among convicts, nor those who sought relief at the outdoor dispensaries, nor those treated out of hospital. To show the fallacy of these figures, I have gathered from various sources that there were over 800 cases of this disease in the various parts of Ceylon over and above the 696 quoted, and these added together do not represent anything like the total number attacked. But for practical purposes the official figures are sufficient to show that this disease is on the increase, and they ought to stimulate the carrying out of improved water and milk supplies and sanitation throughout the Island. The death-rate is given as 22.55 per 100 cases treated. The Registrar-General shows 7,729 deaths from enteric fever for 1907.

24. As Colombo is the largest place in Ceylon and notification is very fairly well carried out there, it follows that this city returned the largest number of cases. 688 cases were treated in the Colombo hospitals (including jail hospitals), with a death-rate of 18.45 per cent.

There was a small outbreak of this disease at Kurunegala in the second quarter of the year which attracted some attention; eventually it may be a blessing in disguise, if a new water supply for the town is the result.

There were 29 cases in Nuwara Eliya hospital, 58 cases in the Kandy hospital, 6 cases in the Matale hospital, 17 cases in the Panadure hospital, and 35 cases in the Kalutara hospital. Enteric fever was prevalent in villages round the outskirts of Colombo and in towns along the coast to Galle, where the inhabitants are dependent on shallow wells for their water supply.

25. *Dysentery*.—At the various Government hospitals 3,474 cases of dysentery were treated, with 1,264 deaths. The largest number of cases occurred in the Central Province, then came the Western, Sabaragamuwa, and Uva Provinces; the smallest number was reported from the Eastern Province. The total number treated and the deaths were less than in 1906. In the jails for the whole Island there were 328 cases admitted for this disease with 20 deaths, a death-rate of 6.09 per cent. In the Colombo District the jails contributed 48 cases, as against 87 cases last year. Cholera belts or flannel shirts were issued to prisoners exposed to rain and wind.

Dr. Castellani has had good results following the administration of dysentery vaccine in chronic cases of bacterial dysentery. In the more acute forms of bacterial dysentery he has had success with the anti-dysenteric serum prepared at the Lister Institute.

26. *Chickenpox*.—This disease is always present in various localities of Ceylon, but owing to its very low mortality it is more an inconvenience than a danger to the public health. Every precaution, as far as possible, is taken to prevent the spread of this disease, but owing to its prevalence and to the large numbers who are constantly suffering from it effective isolation is impossible.

27. *Measles*.—The number of persons attacked by this disease was very small.

28. *Leprosy*.—There was a total of 317 cases of leprosy remaining at the Hendala Asylum on December 31, 1906, and 148 cases were admitted during the year, giving a total of 465 treated during the year. Of these, 79 were discharged and 66 died. At Kalmunai 30 cases were treated, 8 of whom were discharged, 4 died. It is impossible to give an accurate estimate as to the total number of lepers in the Island, for there are many who are never reported at all, and others who are re-admitted into the Hendala Asylum after temporary discharge, and who are counted twice as admissions. It is sufficient here to state that I am convinced the accommodation in the Island is totally inadequate, and that if the Leper Ordinance is to be properly worked, a very considerable increase in the amount of accommodation is necessary.

29. I am strongly in favour of having a leper colony established in the Eastern Province, where the patients could live the home-village-life and cultivate the land. This afflicted class is never happy in an "institution" like a hospital or asylum. The main things required are a large area of ground and a fair water supply. The buildings should be made of cadjans on wooden frames; there should not be more than four patients in a hut, and everybody who is able should work on the soil. The only permanent buildings would be a small hospital, kitchens, and latrines. The Director of the Bacteriological Institute has made experiments during the year to obtaining a leprosy vaccine. He prepared such a vaccine, but its practical utility was not demonstrated. A new form of treatment for this disease, which has been introduced by Professor Deycke, M.D., late Director of the Military School of Practical Medicine, Constantinople, is about to be tried here, and I hope to be able to report favourably on this in my next Administration Report.

30. *Anchylostomiasis*.—The number of cases of this disease treated at the Government hospitals has increased during the year under review by 625, the total being 3,831. Originally this disease was confined to Malabar coolies on estates, who bring the disease from India. It is therefore being constantly introduced with the batches of coolies who arrive daily. It is reported by most of the medical officers doing duty among the natives of the Island (who live on the confines of estates) that the disease is spreading among them. It is a matter of impossibility to check the spread so long as the conservancy arrangements regarding the disposal of sewage, and in many cases the water supply of the estates, remain as they are. The death-rate from this disease in 1907 to cases of the disease treated was 23.17 per cent. I do not think that this death-rate accurately represents the mortality from this disease, for many cases are returned as being due to malarial cachexia, which really are due to anchylostomiasis. The seriousness of the disease known as anchylostomiasis, or *dochmius duodenalis*, has been recognized in this Colony for many years. In 1894 special attention was called to it by the publication of a pamphlet by the Government. In my yearly Administration Reports I have regularly called attention to this matter, and the remarks in my report for 1905 led to some interest in it being taken by employers of Tamil labour, at whose request a leaflet was widely distributed, but without any good result.

31. On August 13, 1907, the Ceylon Government appointed a Committee, of which I was Chairman, to inquire into and report upon the sanitary improvement of coolie lines and estates, the establishment of means for the proper sanitary collection and disposal of night soil, and the protection of water and soil from pollution. The prevalence of this disease was the reason for the appointing of this Committee. The report of the Committee was submitted in January of this year, and I beg to draw your attention to paragraphs 10, 11, 12, and 13 of that report.



32. There are no records available as to the general prevalence of this disease in Ceylon. All one can go upon is the numbers admitted to the hospital. I give below a statement of the admissions and deaths under the heading *Anchylostomiasis* in all hospitals during the last ten years :—

Year.	Admissions.	Deaths.	Year.	Admissions.	Deaths.
1898 ..	1,201 ..	212	1903 ..	1,775 ..	272
1899 ..	1,255 ..	234	1904 ..	1,937 ..	286
1900 ..	1,336 ..	273	1905 ..	2,804 ..	516
1901 ..	1,691 ..	326	1906 ..	3,206 ..	788
1902 ..	1,609 ..	257	1907 ..	3,831 ..	888

The above table shows that this disease is making rapid headway on estates in this Island, and that it is spreading to the Sinhalese villages on the confines of estates.

33. *Its Distribution.*—This disease is prevalent in this Island wherever the immigrant Tamil cooly lives; in other words, the coolies on the tea and rubber estates are largely affected. A large proportion of the coolies who arrive here from India are already infected with this worm.

34. If Ceylon is divided into the "dry" and "wet" zones, they represent respectively those portions of the Island slightly and markedly infected with *anchylostomiasis*. They also represent the non-planting (non-immigrant Tamil) and the planting districts (immigrant Tamil). The following Provinces are either not infected with this disease, or very slightly so :—Eastern Province, North-Central Province, Northern Province, parts of North-Western Province, parts of Uva, and parts of Southern Province.

35. The following Provinces are badly infected :—Central Province, Western Province, Sabaragamuwa, parts of Uva, parts of Southern Province, and parts of North-Western Province. In short, the planting districts are the wet ones, and where these meteorological conditions exist there the disease flourishes. There is very little immigrant Tamil labour in the dry zone. I am not in a position to say that this zone would remain comparatively free from the disease if immigrant Tamil coolies settled down there.

36. Marked increase in the severity of the disease during the rainy seasons has not been noticed in Ceylon, but the admissions to hospitals for all diseases is higher during the wet months, and many of the patients suffer from *anchylostomiasis* or its complications.

(a) There are no sanitary measures in force in Ceylon for dealing with this disease. I beg to refer you to paragraph 12 of the Report on Sanitation of Estates above referred to.

(b) There is no latrine accommodation on estates. In the towns which come under Municipalities, Local Boards, and the Small Towns Ordinance public latrines are provided and the "dry-earth" system is in use, the contents of the buckets are removed and buried; sanitary inspectors supervise the conservancy.

(c) Thymol is considered here to be the best drug, although on Sir Patrick Manson's suggestion we gave eucalyptus oil an extensive trial. Betanaphthol is preferred by some medical officers. All are agreed that a long course of iron tonics is necessary after the worms have been got rid of.

37. (1) For the treatment of *anchylostomiasis* on plantations, I have little to add to the Report on the Sanitation of Estates Committee, except that I would make the use of proper latrines and a pure water supply compulsory.

(2) For the treatment of *anchylostomiasis en masse*, the public can now be treated at all Government hospitals and dispensaries, but patients ought really to be in hospital, so that the effect of the remedy can be watched and the excreta examined microscopically. To do this effectively the hospital accommodation will have to be considerably increased and the staff strengthened.

(3) General and special sanitary measures. To educate the people to observe cleanliness, and to teach them the dangers of becoming infected with this disease. To largely increase the public latrine accommodation in small towns and villages, to improve the drainage, and to supply a pure water. To introduce a conservancy scheme on sanitary lines on estates.

38. As a special sanitary measure it would be possible to rid every immigrant of his worms on arrival, if the planting community would bear the expense of his stay in the cooly camp and the extra medical staff that would be required.

39. *Diphtheria.*—There were three cases admitted into Government hospitals, with one death. Whereas until recent years diphtheria was unknown (or unrecognized) in Ceylon; now a few cases are reported every year. In 1907 the first case occurred at Nawalapitiya in a child that had been brought from Colombo, a second case occurred at Nawalapitiya, the infection in which was traced to the first case.

40. *Parangi.*—There were 3,513 cases of this disease treated with 45 deaths, as against 3,958 cases and 41 deaths in 1906. The North-Western Province returned the largest number of cases.

In Dr. Castellani's report, which is attached, he says: "The treatment of these patients must be prolonged till long after the eruption has disappeared, as, although the granulomatous eruption speedily subsides, the infection in many cases is merely dormant, not destroyed. This fact is shown by clinical experience as well as by experiments on monkeys inoculated with the disease."

41. *Cancer.*—The total number of cases of malignant disease reported from the various Government institutions was 260. The Western Province returned 144 cases of cancer and 21 of sarcoma. The Central and North-Central Provinces, cancer 27, sarcoma 1; Southern, cancer 29, sarcoma 1; Northern, cancer 6, sarcoma 0; Eastern, cancer 1, sarcoma 0; Uva, cancer 7, sarcoma 0; North-Western, cancer 8, sarcoma 3; Sabaragamuwa, cancer 10, sarcoma 2.

42. 135 specimens of various kinds were sent from the operating room of the General Hospital, of which 54 were found to be cancers or sarcomas. 56 specimens were examined from outstations, of which 19 were found to be malignant. 172 specimens from the Pathological Department of the General Hospital were examined, two of which were found to be of a malignant nature.

43. *Phthisis.*—During this year there were fewer cases of phthisis treated at the various medical institutions than in 1906 in the proportion of 841 to 955.



The following tables show race, sex, and distribution in the Provinces, and race, age, and distribution of the disease in the sexes :—

I.—Race and Sex Table showing the Distribution in the Provinces.

Provinces.	Sinha- lese.	Mala- bars.	Tamils.	Moors.	Bur- ghers.	Malays	Euro- peans.	Ben- gali.	Not stated.	Total.	Grand Total.
	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	
Western ..	110 86	23 7	7 7	3 —	6 9	— —	— 1	— —	— —	149 110	259
Central and North-Central ..	65 33	38 24	8 3	8 1	1 1	— —	2 —	1 —	— —	123 62	185
Southern ..	42 22	6 1	— —	1 —	3 1	— —	1 —	— —	— —	53 24	77
Northern ..	9 1	2 —	47 22	1 —	1 —	— —	1 —	— —	— —	61 23	84
Eastern ..	1 —	1 2	7 2	— —	1 —	1 —	— —	— —	— —	11 4	15
Uva ..	27 15	9 4	1 2	1 —	— —	— —	— —	— —	— —	38 21	59
North-Western ..	37 13	24 3	5 —	4 1	1 —	— —	— —	— —	— —	71 17	88
Sabaragamuwa ..	19 16	30 8	— —	1 —	— —	— —	— —	— —	— —	50 24	74
Racial Sex Totals ..	310 186	133 49	75 36	19 2	13 11	1 —	4 1	1 —	— —	556 285	841
Racial Total ..	496	182	111	21	24	1	5	1	—	841	841

II.—Race and Age Table showing Distribution in the Sexes.

	Sinha- lese.	Mala- bars.	Tamils.	Moors.	Bur- ghers.	Malays	Euro- peans.	Ben- gali.	Not stated.	Total.	Grand Total.
	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	
0—5 ..	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
6—10 ..	— 4	— —	— —	— —	— —	— —	— —	— —	— —	— 4	4
11—15 ..	5 10	2 4	— 2	— —	— —	— —	— —	— —	— —	7 16	23
16—20 ..	20 22	18 4	7 4	— —	2 2	— —	1 —	— —	— —	48 32	80
21—25 ..	45 25	16 8	8 7	3 —	— 2	— —	— —	— —	— —	72 42	114
26—30 ..	55 43	25 12	9 10	4 1	4 1	1 —	2 —	1 —	— —	101 67	168
31—35 ..	35 23	16 5	12 4	5 —	— 1	— —	— —	— —	— —	68 33	101
36—40 ..	47 18	24 11	13 3	4 1	— 1	— —	1 —	— —	— —	89 34	123
41—45 ..	28 14	10 4	6 2	— —	— 1	— —	— 1	— —	— —	44 22	66
46—50 ..	34 12	7 1	8 4	1 —	2 —	— —	— —	— —	— —	52 17	69
51—60 ..	32 11	10 —	10 —	2 —	5 3	— —	— —	— —	— —	59 14	73
61—70 ..	4 3	5 —	1 —	— —	— —	— —	— —	— —	— —	10 3	13
71—80 ..	4 1	— —	1 —	— —	— —	— —	— —	— —	— —	5 1	6
81—90 ..	1 —	— —	— —	— —	— —	— —	— —	— —	— —	1 —	1
91 and over ..	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
Racial Sex Totals ..	310 186	133 49	75 36	19 2	13 11	1 —	4 1	1 —	— —	556 285	841
Racial Totals ..	496	182	111	21	24	1	5	1	—	841	841

44. *Vaccination.*—During the year 173,128 subjects were vaccinated, 163,102 were primary vaccinations and 10,026 re-vaccinations. Of the former, 139,882 were successful and 15,629 unsuccessful, and in 7,591 subjects the result of the operation was not known, as they failed to present themselves for examination on the appointed days. The percentage of successful cases to total inspected was 89.94. Of the re-vaccinations, 6,024 were successful and 1,293 unsuccessful, and the result was not known in 2,709 cases, as the subjects failed to present themselves for inspection. The percentage of successful cases to total inspected was 82.32. Glycerinated calf-lymph was supplied in sufficient quantities to all parts of the Island from the central calf vaccine depot at Colombo.

45. The percentage of successes should be larger. I am not satisfied that the lymph as manufactured at present is sufficiently active. I recommend that an assistant bacteriologist be appointed, whose duties will include the proper manufacture of lymph.

46. *Precautions against the introduction of Plague.*—The same precautions as have been in vogue for many years past against the introduction of plague were continued. The Plague Committee held its usual meetings. Twenty-six ports were declared plague-infected during the year. 823 vessels were kept "under observation," as having come from infected ports; 10 vessels were placed in strict quarantine for various infectious diseases. No case of plague was brought to Ceylon. A revised set of plague rules and regulations was issued in 1907.

47. During the year a new disinfecting station was built at the root of the Colombo Breakwater, where the disinfection of passengers and their baggage, tally clerks, and coolies can be disinfected. 82,222 persons were disinfected during the year. Ceylon's freedom from plague may be attributed to the following circumstances: that is is not a terminal port, that ships do not come alongside a quay, and that the cargo lighters are regularly disinfected and kept free from rats.

48. *The Lunatic Asylum.*—The only lunatic asylum for the whole Island is in Colombo. It is divided into the asylum proper and the house of observation, but virtually it is a single establishment. For some years past this institution has been overcrowded. The nominal accommodation is for 378, but some extra room has been made by converting the quarters formerly occupied by the resident medical staff into association wards.\* The total number of patients treated in the asylum during 1907 was 700.

\* To admissions the recovery rate was for males 23.33 per cent. and for females 29.11. The deaths were 69 in number, or 9.85 per cent. of the total number treated.



The daily average number of patients was 532.99. This decrease in the asylum population is due mainly to the transfer of Tamils to Madras, which was effected in pursuance of an arrangement concluded with the Indian Government that it should take over Indian natives who had become insane in this country.

49. In the house of observation 173 persons were admitted, which, with 9 remaining from the previous year, give a total of 182. There were no fatal injuries. The water supply to the asylum is insufficient. It is sometimes difficult to obtain water from the pipes supplied to the upper floors owing to want of pressure in the mains. This is not only a great inconvenience, but a source of danger in the event of fire. The industrial department continues to be a valuable adjunct in the working of this institution.

### SECTION III.—METEOROLOGICAL CONDITIONS AND THEIR RELATIONSHIP TO DISEASE.

50. Of all meteorological conditions, the rainfall has the greatest influence on the health of the people. Drought means hardship, agricultural pursuits are hindered, food gets scarce, wells run dry; with insufficient food and water low in the wells, bowel complaints are common; with insufficient rain (not absolute drought) the breeding places of mosquitoes are not washed out, mosquitoes therefore are left undisturbed, and they multiply out of all proportion, a large amount of malaria is the result. Too much rain spells ruin for many crops, food is consequently scarce, and the people get chills, which bring out latent malaria.

### SECTION IV.—GENERAL SANITARY CONDITION OF THE COLONY AND OF THE CHIEF TOWNS.

51. The general sanitary condition of the Island remains in much the same condition as last year. The same methods of disposal of dust and fecal matter exist, but the tendency is towards sanitary improvements in the towns and villages throughout the Island, although the work is of necessity slow owing to the cost. The following is a list of the chief towns, with a description of their present sanitary condition:—

52. **Colombo.**—The water supply has been considerably improved since the duplication of the main pipe from Labugama and the erection of another reservoir on an elevated site in Colombo, but in the higher parts of the city and in houses of two storeys the pressure is insufficient.

53. The collection of night soil and its disposal is unsatisfactory from a sanitary standpoint; it is carried out as perfectly as this system can be, but the transport of night soil in carts through miles of streets is objectionable, and the burial of the night soil polluting large areas of ground immediately outside the town is to be condemned. But these means must continue until the water-carriage system is completed. Good progress has been made with the work in connection with the Mansergh scheme for sewers, pumping stations, and the ultimate treatment of sewage bacteriologically, but it will be some years before this scheme is in working order.

54. There is serious overcrowding in many parts of the town. The scavenging is well done, but the rubbish should be burnt in a destructor. More watering of roads and streets is desirable, particularly during the dry months of the year.

55. The Municipality of Colombo recognizes the necessity of erecting a proper infectious diseases hospital, and land for the purpose is now being acquired.

56. Cesspits are being gradually closed, and polluted wells are filled up. Wells in general cannot be closed until the town water is more widely distributed. The surface drainage in many parts of the town is defective.

57. There were 4,280 registered births and 5,755 registered deaths in Colombo during 1907, or 24.27 and 32.67 per 1,000 annual birth- and death-rates, which show a great improvement on the former year's figures.

58. The Registrar-General remarks that these figures are too small for the birth-rate, and the death-rate is abnormally high owing to registration of births being still defective, to the preponderance of males over females, and to the deaths in hospitals and asylums.

59. The report on the sanitation of Colombo and the unusual prevalence of sickness in 1906, by Dr. A. J. Chalmers, was published early in 1907. It deals very exhaustively with the subject, and points out the lines on which improvements should be carried out.

60. **Kandy.**—The water supply is from a reservoir situated above the town. The quality of the water is fair, but the quantity is insufficient, particularly in the dry weather. The outlying parts of the town are dependent on river or well water. The Municipality has raised the rates so as to extend the water service to the crowded parts of the town.

61. The refuse of the town is burnt in pits and the ashes are used as a deodorizer for the public latrines, which I should say was open to question.

62. The excreta is collected in air-tight drums and conveyed to a trenching ground. This work is carried out satisfactorily. The drainage of the town is very defective, and as, I understand, the Municipality has too small an income to attempt to introduce a proper drainage scheme, the present condition of the drainage of the town is likely to continue. There are many insanitary areas and much overcrowding in the heart of the town; the Municipality, if possible, should gradually acquire these insanitary spots and substitute model dwellings with good streets and alleys in place of the present foul courts and habitations. Dairies are registered, and certain infectious diseases are notified.

63. **Galle.**—This town covers an area of 6½ square miles; there are five wards, and 44 villages or hamlets within the Municipal limits.

64. **Water Supply.**—This is very limited, and only of fair quality; it supplies the Fort only. The well-to-do purchase their drinking water from hawkers with carts, who transport it from wells situated 3 miles away. Others are dependent on wells near their dwellings. There is a scheme on foot to bring an improved water supply by pipes from a stream situated 7 miles from Galle.

65. **Scavenging and the Disposal of Refuse.**—This service is indifferently carried out, except in wards Nos. 1, 2, and 3. Owing to the scattered nature of the outlying villages and want of roads, what refuse is collected is buried.



66. *Disposal of Excreta*.—The dry-earth system of dealing with excreta is carried out in the Fort Ward and in portions of the town outside the Fort. It is collected in buckets, which are conveyed to the dumping ground 3 miles off and buried in shallow trenches. The work is well executed, but its scope should be extended so as to include a larger portion of the Municipal limits. In other parts of the town cesspits are used, and there is a good deal of surface pollution.

67. *Drainage*.—The Fort is well drained, the sewage is discharged into the sea; other portions of the town are ill-drained. Mosquito-breeding areas abound owing to extensive marshy land, grass and paddy fields. There is not much overcrowding.

68. *Dairies, laundries, and bakeries* are registered and inspected. Infectious diseases were almost absent during 1907.

69. In a statement published in connection with the borrowing powers of the Galle Municipality, I see that a sum of over Rs. 300,000 might be available. I recommend that this amount be obtained, and that the water service be supplemented and considerably extended; that the conservancy of night soil be augmented; that marsh lands be drained and hollows filled up.

70. *Jaffna*.—The water supply is entirely from wells, which in time of floods are liable to pollution. Many wells are in close proximity to cesspits. The refuse of the town is collected and either burnt or deposited in a lagoon with the object of gradually filling it up. The scavenging is fairly well carried out.

71. *Disposal of Excreta*.—Except at the hospital, jail, and about twenty houses in the town where dry-earth and removal with burial is carried out, all others used either cesspits or pollute the surface of gardens, public grounds, or the side drains.

72. *Drainage*.—Jaffna is very flat; there is no natural drainage, and the drains that do exist are mostly earth cuttings with culverts too narrow in many places. Storm water overflows into adjacent gardens, where it stagnates for several days. Pools and collections of water, which may be seen in many parts of the town, with overcrowding of dwellings, and the close proximity of cesspits to wells. In addition the free circulation of air is interfered with by the general employment of high cadjan fences round each house or compound.

73. *Recommendations*.—(a) A water supply. I believe a scheme for this has been submitted to Government.

(b) Improved drainage.

(c) Building regulations.

(d) The filling up or drainage of hollows, borrow pits along the railway, and oiling of large water surfaces that cannot be drained.

(e) To limit the height of cadjan fences, and to insist on the lower portions being open for 1½ ft. above the surface of the ground.

(f) The closing of cesspits and of polluted wells, and the introduction of a night soil conservancy with proper burial and the erection of public latrines in crowded localities.

The assessment rate for 1908 is only 3 per cent. The borrowing powers of the Board of Health would permit of a great deal more being done in the way of improved sanitation.

74. *Batticaloa: Water Supply*.—This is obtained from wells, nearly all of which are open to pollution. The supply is quite inadequate.

*Scavenging and Disposal of Refuse*.—The scavenging is unsatisfactory: for 87 roads and lanes only three carts are employed. Refuse is collected three times a week in the principal parts of the town, and once a week from the other portions, and buried.

*Disposal of Excreta*.—The public latrines are too few, cesspits are numerous, and in many cases in dangerous proximity to water supplies. Only a few houses (under 40) employ dry-earth, and have the night soil transported for disposal on the shore.

Drainage is defective. There are large areas of low-lying lands, which become converted into pools during the wet weather and form breeding places for mosquitoes.

Overcrowding and insanitary areas exist in many parts of the town. The surface pollution of the soil is common, and high cadjan fences are the rule as in Jaffna.

The assessment rate is only 2½ per cent.

*Recommendation*.—That the Local Board use its borrowing powers to raise sufficient money to improve the water supply, drainage, and conservancy of the town.

75. *Anuradhapura*.—The sanitary condition of this town is receiving the best attention of the Local Sanitary Board. There are many hollows of no historic or ornamental value, which collect water and become a source of danger to the inhabitants. The Board has adopted measures to render them less dangerous, and intends to fill them up or drain them as funds permit. The drainage is fair, conservancy is well carried out, and the water supply is good.

76. *Kurunegala*.—As far as the revenue will allow, the Local Board is improving the drainage of the town and effecting sanitary reforms. This town is surrounded by paddy fields. Cesspits in dangerous proximity to wells is a common condition. The water supply of the town is of doubtful quality and totally inadequate. I strongly recommend that a water supply be provided; this is the great want of Kurunegala.

77. *Badulla*.—An improved water supply is required. The drainage is unsatisfactory. The public latrine accommodation is insufficient. The scavenging of the town has been performed satisfactorily.

78. *Ratnapura*.—The water supply is from wells, some of which are open to pollution. The supply is insufficient. The want of a vegetable and meat market is felt. The drainage is only fairly satisfactory. The scavenging is properly carried out. Public latrine accommodation is insufficient.

#### SECTION V.—GENERAL.

79. *Medico-legal*.—During 1907 285 reports were completed (an increase of 14 per cent. over the previous year). In connection with these reports 930 samples were examined. The number of judicial cases was 221, involving the examination of 732 specimens. There were 88 cases of attempted or successful poisonings. There were 82 cases in which it was necessary to examine 247 articles for stains of various kinds; 183 samples were examined for opium or ganja, and 123 samples of kerosine oil were tested under the Petroleum Ordinance.



80. *Administrative: Hospitals, Asylums, and Dispensaries.*—The Government medical institutions are, as a rule, well built, either of stone or of brick, and contain large airy wards with plenty of cubic space and superficial area. The general type of hospital is an administration block in front with wards running at right angles to it connected by covered corridors. The buildings consist of a ground floor only, and they occupy a good deal of space. The roofs are of red tiles, and the floors of cement concrete. The beds are of wood with cane bottoms, or of iron with copper spring mattresses. A new form of bedstead has been introduced made of an iron frame with a wooden platform and a thin roller mattress protected by a Willesden canvas sheet. These beds are higher than those ordinarily seen with the object of saving the nurses' backs; the beds can be taken to pieces in a few minutes and thoroughly cleaned. Bedside tables are provided, and the fittings and equipment are serviceable, and in some of the institutions fairly up to date. The hospitals have been kept in good repair, and structural improvements have been carried out as far as votes will permit.

81. A new hospital at Dolosbage has been completed. A new hospital is under construction at Moratuwa. A new hospital at Muppane will be commenced as soon as a suitable site has been found. The Jaffna Friend-in-Need hospital was taken over by Government on March 1, 1907. The immigration hospital at Mihintale was closed in September, 1907.

82. *Native Attendants.*—Male and female ward attendants are employed in the hospitals, who work under the directions of the nurses; they perform their duties fairly satisfactorily, but it would be well if a better class of attendant could be induced to take up the work, which is only possible with a substantial increase of pay.

83. *Nursing in Ceylon Hospitals.*—The nursing in the Ceylon hospitals is not entirely satisfactory. Some of the outstation hospitals have no nurses; other hospitals are under-nursed. The nursing staff consists of 15 European qualified matrons and sisters; 35 European Roman Catholic sisters (untrained); 27 matrons (trained locally); 31 nurses (trained locally); 23 pupils in training.

84. Nine of the European qualified sisters are employed in the paying section of the General Hospital, Colombo. One is the matron of the Lady Havelock Hospital, and one is at the Victoria Memorial Eye Hospital. The Roman Catholic sisters perform nursing duties in the general wards of the Colombo hospital and at Kurunegala. Four fully qualified European sisters are employed at the Kandy hospital.

85. Two nursing schools for the training of young women exist at the Lady Havelock Hospital and at the Kandy hospital. The length of the course is two years, after which a certificate of proficiency is given to those who pass an examination. There is accommodation for 23 pupil nurses in training.

86. The total number of in-patients treated at all hospitals and asylums for the year was 75,911, of whom 9,856 died, which gives a death-rate of 12·98 per cent. of the hospital population.

87. At the Government dispensaries 1,267,748 new cases were treated; the number of individual visits paid to the Government dispensaries was 1,706,460.

88. The estate dispensaries are established by many of the planters, who supply the building and the apothecary, the Ceylon Government giving the drugs free.

89. During the year 1907 69 hospitals and asylums were in operation. There were 376 Government dispensaries and 168 estate dispensaries.

90. *Surgical Operations.*—At the various hospitals throughout the Island 3,562 operations were performed, with 143 deaths.

91. *General Hospital, Colombo.*—The total number of patients treated at this institution during the year was 11,305 with 1,433 deaths, against 17,115 cases with 2,044 deaths in 1906. Of the total treated, 450 remained from the previous year and 10,855 were new admissions. 9,469 were discharged, and 403 remained at the end of the year. The daily average sick was 455·74, and the percentage of deaths to total treated was 10·90.

92. Improvements to the operating room are to be carried out in 1908. More nurses are required, but at present there is no place to house them.

93. *Paying Section, General Hospital, Colombo.*—The total number of patients treated in these wards during 1907 was 582 with 46 deaths, as against 630 cases with 75 deaths in 1906. Of the total treated, 23 remained from the previous year and 559 were new admissions, 509 were discharged, 46 died, and there remained 27 under treatment at the end of the year. The daily average sick was 31·68 against 30·55 in 1906, and the percentage of deaths to total treated was 7·90 as against 11·90 in 1906.

94. The paying section consists of 53 beds, distributed as follows:—"Skinner's" Memorial 4, "Anthonisz" 2, Clerical 2, Passengers' 8, Seamen's 26, "Cargills" 2, new block 9 (includes the Planters' and "Munro" wards). The old "Grenier" Outdoor Eye Infirmary is to be converted into two isolation wards in 1908.

95. The revenue from the paying section was Rs. 47,501·44, and the expenditure is estimated at Rs. 54,581·98, which includes the nurses, but not the medical staff, medicines, and surgical material (which is a large item), nor the upkeep of buildings. I recommend that the scale of fees be reconsidered; it is not right that Government should lose money on these wards. To make a profit is not necessary, but the revenue and expenditure should be more equally balanced.

96. *The Lunatic Asylum, Colombo.*—Please see remarks under Section II.

97. *Houses of Observation for suspected Lunatics.*—There were four institutions of this nature at Colombo, Kandy, Galle, and Jaffna, and into them were admitted for observation 246 patients, which, with 20 remaining from the previous year, made a total of 266, of whom 129 were transferred to the Asylum at Colombo, 112 were discharged, 6 died, and 19 remained at the end of the year.

98. *Leper Asylum, Hendala.*—Please see remarks under Section II.

99. *De Soysa Lying-in Home.*—The total number of patients treated at this institution during the year was 961, as against 933 in 1906. Of these, 887 were discharged cured, 9 died, and 36 were remaining under treatment at the end of the year. The daily average sick was 26·99. The percentage of deaths to total treated was ·93, as against 2·14 in 1906.

100. In the Lying-in Home 39 pupil midwives receive training in 1907, of whom 20 obtained certificates after passing a satisfactory examination and were sent out during the year. 125 obstetric operations were performed during the year.



101. The building of a new operating theatre for this institution, the munificent gift of Mrs. H. Theodoris Fernando, was commenced towards the end of the year.

102. *Lady Havelock Hospital.*—In this institution 1 112 in-patients were treated. The mortality rate was 8.09 per cent. The daily average sick was 34.51. Of the total 1,112 patients, 347 were children. There were 57 operations performed. Of the operated cases 2 died.

The number of attendances at the female outdoor dispensary was 28,136. There were 4,292 children, 2,184 being boys and 2,108 girls.

103. *The Victoria Memorial Eye Hospital and Grenier Outdoor Infirmary.*—There were 594 patients admitted during the year, 27 of whom were paying patients. The average daily sick was 35.8. On several occasions every bed was occupied, and patients were kept waiting for admission. The expenditure was Rs. 10,725.55, and the receipts Rs. 2,519.01; the nett cost for the year was therefore Rs. 8,206.51, which is very small when the number of persons who sought relief is considered, viz., 13,170 out-patients and 594 in-patients, a total of 13,764. To take the 131 cases of cataract operated upon, had there been no institution at which relief for this condition could have been given, these cases would eventually have been returned as blind at the next Census. If the wage-earning capacity of an individual is, say, Rs. 100 a year in this country, and his consuming capacity the same, a sum of Rs. 26,200 has been saved.

104. The number of operations performed on in- and out-patients was 573.

105. *Police Hospital, Colombo.*—568 patients were treated in the police hospital, of whom 5 died. The daily average sick was 6.83.

106. *Branch Hospitals.*—Colombo and Galle are provided with special hospitals for the treatment of women suffering from venereal disease. The total number of new cases admitted was 470, as against 399 in 1906, which, with 23 remaining from the previous year, make a total of 493. Of these, 472 were discharged, 19 remained at the end of the year. Of the 493 females treated in the two branch hospitals, 11 were for primary syphilis, 136 for secondary syphilis, 72 for tertiary syphilis, 2 for inherited syphilis, 254 for gonorrhoea, 2 for bubo (gonorrhoeal), and 16 for other diseases. The patients seek voluntary admission.

107. *Jail Hospitals and Sick Persons.*—The number of prisoners admitted to the different jails in the Island was 15,891. The average daily strength of prisoners was 3,334.88. The number treated in the jail hospitals during the year was 5,617, against 4,776 in the previous year. The total deaths numbered 113, against 110 in 1906.

108. The following table gives the number of admissions, number of deaths, average strength, death-rate to admission to jail hospitals, and to average strength for the past five years :—

Year.	Admission to Hospitals.	Number of Deaths.	Average Strength of Prisoners.	Death-rate to Admissions.	Death-rate per 1,000 of Average Strength.
1903 ..	4,396 ..	73 ..	2,784.00 ..	1.66 ..	26.21
1904 ..	5,099 ..	70 ..	2,821.21 ..	1.37 ..	24.81
1905 ..	4,887 ..	95 ..	2,864.64 ..	1.94 ..	33.16
1906 ..	4,776 ..	110 ..	3,153.26 ..	2.30 ..	34.88
1907 ..	5,617 ..	113 ..	3,334.88 ..	2.01 ..	33.88

109. *Kanatta Infectious Diseases Hospital.*—At this institution 855 cases of infectious diseases were treated during the year, as compared with 642 in 1906. The average daily sick was 33.59. The diseases included smallpox 64 cases, enteric fever 200, cholera 19, diphtheria 1; the remainder were diseases of a mild infectious nature.

110. *The Victoria Home for Incurables, Colombo.*—At this institution 62 cases remained at the end of the last year, which, with the 14 cases admitted during the year, made a total of 76. Of these, 6 died and 3 were discharged, 67 patients remained at the end of the year.

111. *Bacteriological Institute.*—The total number of specimens examined during the year was 1,940, being over 400 in excess of last year. The fees represented Rs. 830. Dr. Castellani, the Director, made further investigations into parangi, various skin diseases, dysentery, leprosy, and elephantiasis.

112. Several new species of protozoa were discovered and named. The new trichophyton found by Dr. Castellani in cases of *Tinea intersecta*, which disease was also first described by him, I suggest shall be called "*Trichophyton-Castellani*."

113. *Total Deaths.*—The total deaths numbered 9,856, against 11,366 in 1906, showing a decrease of 1,510. A table showing the death-rate per cent. in the various hospitals and asylums in the Island for the year as compared with the last year is annexed. For the purpose of comparison the death-rate among the mixed races and Malabars have been shown separately :—

Hospitals.	Mixed Races.		Malabars.		Total.	
	1906.	1907.	1906.	1907.	1906.	1907.
Civil ..	7.93 ..	8.11 ..	19.85 ..	20.10 ..	11.18 ..	11.28
Field ..	5.37 ..	4.52 ..	15.61 ..	15.21 ..	7.0 ..	6.46
Immigrant ..	5.47 ..	4.39 ..	9.41 ..	8.94 ..	6.47 ..	5.39
District ..	6.77 ..	6.43 ..	25.92 ..	25.56 ..	21.08 ..	22.14
Asylums ..	10.20 ..	9.62 ..	11.53 ..	7.97 ..	10.38 ..	9.44
	7.60	7.58	22.42	22.34	13.16	12.98

114. *Hospital Accommodation.*—This was generally sufficient. Overcrowding took place in some of the hospitals of the planting districts, particularly in those receiving patients from new clearings.

115. *The Water Supply.*—With the exception of the following institutions, Matale, Jaffna, Dambulla, Mannar, Puttalam, Chilaw, Nikaweratiya, Balangoda, Trincomalee, and Dandugama, the water was reported to be good, pure, wholesome, and abundant. Water for drinking purposes is, as a rule, filtered before use. Water supply schemes for Nanu-oya, Balangoda, Tillicoultry, and Uda Pussellawa are under consideration.

116. *Bathrooms.*—All hospitals are provided with separate bathrooms for males and females and furnished with tubs or douches. Patients who can help themselves, however, prefer to bathe in streams when there are such adjoining a hospital.

117. *Drains.*—The drains are surface ones for carrying away ward washings and storm water.



118. *Sewage*.—The conservancy of the latrines is entirely on the dry-earth system. The excreta is removed daily and buried or incinerated at some distance from the hospitals. Doulton's earthenware squatting plates have been introduced into most of the hospitals.

119. *Inspection*.—The hospitals were all inspected either by me or the Provincial Surgeons of the respective Provinces. The number of these visits of inspection and the official designation of the visitors will be found given in the return of each institution. The books were produced when called for, and were generally found complete and made up to the date of examination. The reports of inspection by the Provincial Surgeons as well as those by me were forwarded to Government when necessary.

120. *Food Supply*.—The provisions for the various hospitals were supplied by purveyors on contract approved by Government. This system works satisfactorily. The medical officers in charge of the respective hospitals examine the food before it is served out to the patients, and reject such articles as do not come up to contract samples; contractors offering inferior articles are fined.

121. *Dispensaries*.—544 dispensaries, including branch institutions and visiting stations, were in operation. Of these, 326 were civil, 50 district, and 168 estate. They are distributed as follows:—In the Western Province 326, Central 50, Northern 51, Southern 46, Eastern 39, North-Western 42, North-Central 37, Province of Uva 30, and Province of Sabaragamuwa 31, and on estates 168. In the civil and district dispensaries there were treated 1,267,748 persons who paid 1,706,460 visits, against 1,444,799 persons who paid 2,127,647 visits in 1906.

122. *Port Duties and Immigration*.—The number of vessels which arrived at the port of Colombo was 3,274, against 3,341 in 1906, 2,758 being steamers and 516 native craft. Eight vessels were in strict quarantine for smallpox, 1 for cholera, 1 for acute pneumonia; the sick in all cases were isolated and the contacts segregated.

123. In my report for 1906 I mentioned that a new disinfecting station had been erected at the root of the breakwater. As the site on which it stood was required for the work in connection with the lengthening of the breakwater, the buildings were partly pulled down, and the Harbour Works Resident Engineer erected a set of new buildings for a disinfecting station on a site south of the former buildings. This new station is complete in every way for the disinfection of persons and baggage; there are rooms for the convenience of all classes of passengers, and the coolly accommodation is ample and well found in every respect. I cannot speak in too high praise as to the design, structure, and completeness of this new station.

124. The port of Kayts in the Northern Province was opened to passenger traffic on March 1; a complete camp with good huts, surrounded by a barbed wire fence and a water supply of good quality and in sufficient quantity, was established. This camp is for contacts coming from an "infected" district in India or from an "infected" ship. Those suffering from infectious diseases are to be accommodated on Fort Halmalheil. In November the latest type of high pressure steam disinfecter was erected. 662 vessels were inspected during the year, the number of passengers landed was 2,115. 35 vessels arrived from cholera-infected ports and 2 from smallpox-infected ports. 26 persons were detained in the segregation camp for the necessary period of observation; they were discharged after proper disinfection.

125. The number of native passengers who arrived in Colombo during 1907 was 73,930 traders and 55,724 estate coolies. Of these totals, 21,097 were vaccinated on arrival.

126. *Ragama Camp*.—The number of coolies, passengers, and others who passed through the camp during 1907 was 56,294, against 88,167 in 1906. 10,044 coolies who had no marks of vaccination were vaccinated. 33 patients were admitted during the year to the camp hospital, of which 14 were suffering from cholera, 6 with chickenpox, 4 with dysentery, 1 malarial fever, 5 measles, 1 tetanus, 1 pneumonia, and 1 diarrhoea. There were 10 deaths. The sanitation of the camp was satisfactory; the water supply is of good quality and in sufficient quantity. The night soil was incinerated.

127. *Medical College*.—The College contains lecture hall, students' library, laboratories for chemical physiology, biology, and pathology, dissecting room, offices, photographic rooms, a museum, and colonial medical library; and a separate building for lady students, containing sitting-room, lavatory, and special dissecting room. The pathological laboratory, generously equipped by Mr. Simon Fernando Vimala Gunawardana, Mudaliyar, was opened for work on May 1, 1907.

128. The College sustained a sad loss in the death of Dr. Burgess, D.Sc., Professor of Chemistry, whose learning and kindness endeared himself to the staff and students alike. Mr. Joseph, B.Sc., London, was appointed in his place. Dr. Lucian de Zilwa, M.D., B.Sc. (London), was appointed lecturer on physiology, and Dr. A. M. de Silva, F.R.C.S. (England), L.R.C.P. (London), has been appointed lecturer on anatomy, *vice* Dr. H. B. Mylvaganam, F.R.C.S., L.R.C.P., who has been appointed Third Surgeon of the General Hospital.

129. During the year 14 medical and 19 apothecary students entered College. There were 100 medical and 33 apothecary students at the end of the year. The total fees amounted to a little over Rs. 20,000, as against Rs. 18,491.25 in 1906.

*Post-graduate Lectures*.—For the fifth year in succession a course of instruction lasting a fortnight was held in Colombo for medical officers at outstations to familiarize themselves with the most recent advances made in medicine, surgery, and bacteriology. Ten medical officers attended. These courses are much appreciated.

130. *Civil Medical Stores*.—Dr. H. Huybertsz was in charge of this institution during the year as Superintendent, and Mr. A. D. Cotton is the Chief Medical Storekeeper. The cost of the drugs, chemicals, and instruments received amounted to Rs. 243,429.09, the cost of transport and postage to Rs. 5,182.74, miscellaneous to Rs. 402.69, the sale of medicines to Government Departments and others Rs. 1,884.96, and sale of medicines to planters Rs. 1,701.21. The sale of unserviceable articles realized Rs. 261.04, and the value of the surgical instruments lost and paid for by the officers of the Department amounted to Rs. 628.33.

131. *Pearl Fishery: Medical Staff*.—The fishery lasted from February 11 until April 8. Dr. F. G. Spittel was the Chief Medical Officer at the fishery camp, assisted by one medical officer and three apothecaries.

*Population*.—The maximum population was estimated at 25,000.

*Water*.—The water for the inhabitants of the camp was obtained from tanks; its quality was not good. Officials used water from a well; no ill-effects followed the use of the water, which, as a general rule, was boiled before being taken.



*Sanitation.*—The sanitary condition of the camp was satisfactory.

*General Health.*—The number of patients treated at the hospital and dispensary was 1,579. On the whole, the health of the inhabitants was good.

*Hospitals.*—There was a hospital for general diseases, two infectious diseases hospitals, and an observation ward. The food was of good quality, and the water was boiled and filtered through a Pasteur filter.

*Latrines.*—The night soil was collected twice daily and buried.

*Equipment.*—The equipment was of good quality.

*Numbers treated.*—144 patients were admitted to hospital, of whom 9 died. The average daily sick was 15.57. The prevailing diseases were malaria, dysentery, and pneumonia. 16 died out of hospital. The out-patients numbered 1,435.

132. *Strength of the Medical Department.*—The strength of the Medical Department was as follows:—1 Principal Civil Medical Officer, 1 Assistant Principal Civil Medical Officer, 1 Registrar of the Medical College, 1 Director, De Soysa Bacteriological Institute, 1 Professor of Chemistry, 1 Professor of Physics, 1 Public Analyst, 9 Provincial Surgeons, 1 Superintendent, Lunatic Asylum, 1 Surgeon in charge, Government Hospital, Colombo, 3 Medical Women, 29 Medical Officers 1st Grade, 36 Medical Officers 2nd Grade, 54 Medical Officers 3rd Grade, 6 Health Officers, 243 Apothecaries, 1 Chief Medical Storekeeper, 1 Chief Inspector of Vaccination, 8 Inspectors of Vaccination, and 132 Vaccinators.

*Changes in the Department.*—Dr. J. B. Spence, M.B., Medical Superintendent, Lunatic Asylum, went on leave, and Dr. L. A. Prins, L.R.C.P., & S. (Edin.), acted for him. Dr. C. H. Burgess, D.Sc., Professor of Chemistry, Medical College, died, and Mr. A. F. Joseph was appointed in his place on January 1, 1908. Provincial Surgeon Dr. H. A. Keegel died. Medical Officers 1st Grade Dr. J. W. de Hoedt, Dr. G. S. Van Rooyen, and Dr. C. B. Lourensz were promoted as Provincial Surgeons; Medical Officer 1st Grade Dr. W. H. Meier retired. Medical Officers 2nd Grade Dr. A. Rode, Dr. R. Pestonjee, and Dr. R. J. Jayatileke were promoted to the 1st Grade. Dr. L. A. E. de Zilwa, M.D., B.Sc. (Lond.), was appointed Third Physician, General Hospital, Colombo, and enrolled as a Medical Officer of the 1st Grade. Dr. B. Reyhardt, Medical Officer 2nd Grade, retired. Dr. A. V. Chinniahpulle, Medical Officer 3rd Grade, died. Drs. K. J. de Silva, J. Hoole, and A. A. Gomes, Medical Officers 3rd Grade, resigned. Dr. Isaac John, Medical Officer 3rd Grade, was discontinued, and Dr. F. M. Alvis, dismissed. Drs. A. E. Spaar, S. P. Joseph, and H. S. Christoffelsz, Medical Officers 3rd Grade, were promoted to the 2nd Grade.

133. *Expenditure.*—The expenditure of the Department, exclusive of hospitals worked under the Medical Aid Ordinance, amounted to Rs. 1,865,500.29, including exchange compensation, against Rs. 1,653,087.20 in the previous year. Under Personal Emoluments and Allowances the expenditure was Rs. 661,461.36, including exchange compensation, against Rs. 586,699.66 in the previous year. The expenditure under Other Charges was Rs. 1,177,998.95, against Rs. 1,060,364.77 last year. Under Harbour Service Rs. 1,039.59, against Rs. 360 in 1906; and under the vote for Plague Precautions Rs. 6,303.83, against Rs. 5,662.77 in 1906. The receipts on account of paying patients in hospitals amounted to Rs. 52,088.90, against Rs. 52,215.83 in 1906. The collections at the civil outdoor dispensaries were Rs. 20,534.55, against Rs. 23,716.88 last year. The cost of medicines issued to the Estates Branch of the Department amounted to Rs. 128,044.50, against Rs. 150,280.83 in 1906; while the sale of medicines and superfluous articles, Medical College fees, &c., amounted to Rs. 58,417.87, against Rs. 89,129.18 last year. Deducting the receipts under the heads above specified from the expenditure, the nett expenditure was Rs. 1,606,414.47, against Rs. 1,337,744.48 in 1906. The following statement shows the expenditure and receipts as compared with 1906:—

<i>Expenditure.</i>	1906.		1907.		Increase.	
	Rs.	c.	Rs.	c.	Rs.	c.
Personal Emoluments ..	584,869	66	658,031	36	73,161	70
Personal Allowances ..	1,830	0	3,430	0	1,600	0
Total ..	586,699	66	661,461	36	74,761	70
Other Charges ..	97,208	11	102,777	42	5,569	31
Hospitals and Dispensaries ..	707,425	75	810,564	31	103,138	56
General ..	255,730	91	264,657	22	8,926	31
Total ..	1,060,364	77	1,177,998	95	117,634	18
Harbour Service (Port and Marine) ..	360	0	1,039	59	679	59
Plague Precautions ..	5,662	77	6,303	83	641	6
Total ..	6,022	77	7,343	42	1,320	65
Special Expenditure ..	—	—	18,696	56	18,696	56
Grand Total ..	1,653,087	20	1,865,500	29	212,413	9
<i>Receipts.</i>						
Amount received from paying patients in hospitals ..	52,215	83	52,088	90	—	—
Collections at dispensaries ..	23,716	88	20,534	55	—	—
Cost of medicines issued to Estates Branch institutions	150,280	83	128,044	50	—	—
Sale of medicines and superfluous articles, College fees, and bills of health ..	89,129	18	58,417	87	—	—
Total ..	315,342	72	259,085	82	—	—
Nett Expenditure ..	1,337,744	48	1,606,414	47	268,669	99



## ESTATES BRANCH.

134. During the year 1907 there were 1,969 estates scheduled to 33 districts and 30 sub-districts, with 20 district hospitals and 29 dispensaries and 13 civil hospitals and dispensaries.

The following are the districts and sub-districts with the number of estates scheduled to each :—

135. Avisawella District 49, sub-district Hanwella 14, sub-district Bandaragama 25, sub-district Ragama 1, sub-district Parakaduwa 14; Kalutara District 49, sub-district Horawala 15; Kandy District 67, sub-district Galagedara 11, sub-district Kadugannawa 19, sub-district Hanguranketa 5; Elkaduwa District 20, sub-district Wattagama 33; Kellebokka District 41; Dikoya District 61, sub-district Bogawantalawa 27, sub-district Watawala 39; Maskeliya District 67; Gampola District 58, sub-district Pussellawa 36; Lindula District 54, sub-district Agrapatana 43; Dimbula District 52; Matale District 101, sub-district Rattota 33, sub-district Gammaduwa 21; Teldeniya District 31, sub-district Rangalla 28; Deltota District 43; Nuwara Eliya District 36, sub-district Nanu-oya 19; Maturata District 26; Ramboda District 32; Uda Pussellawa District 31, sub-district Mulhalkele 3; Nawalapitiya District 61, Dolosbage District 31; Kotmale District 19; Morawak korale District 26; Balapitiya District 23; Udugama District 13; Badulla District 54, sub-district Namunukula 22, sub-district Passara 18; Lamugala District 25, sub-district Madulsima 29; Monaragala District 12; Haputale District 19, sub-district Bandarawela 9, sub-district Haldummulla 25, sub-district Koslanda 29; Kurunegala District 59, sub-district Rambukkana 6; Ratnapura District 31; Balangoda District 44; Rakwana District 26; Kegalla District 48; Karawanella District 85, sub-district Kitulgala 23, sub-district Aranayaka 16, sub-district Bulatkohupitiya 7, sub-district Nelundeniya 6.

136. To attend to the medical wants of the above the following were employed :—Medical Officers 2nd Grade 15, Medical Officers 3rd Grade 14, and Apothecaries 28.

137. During 1907 there were 15,590 estate labourers treated in the district hospitals and civil constituted district hospitals, against 18,427 in 1906. Of these, 3,816 died, a death-rate of 24·41 per cent. Of the mixed races, 24,414 were treated, of whom 3,080 died, a death-rate of 12·61 per cent.

138. In the civil hospitals worked partly as district hospitals the death-rate of estate labourers was 22·25 per cent., whilst in the district hospitals it was 25·52 per cent. The highest death-rate (37·78) among the estate labourers occurred in the district hospital at Avisawella, and the lowest (11·03 per cent.) in the civil hospital at Panadura. The admissions into the former were 807, into the latter 444.

139. The total number of days the estate labourers stayed in hospital was 356,113, an average of 22 days each. Of these, 254,190 were paid for by the estates, the rest being charged to the fund. The total number of days the mixed races stayed in district and civil hospitals was 305,882, an average of 13 days.

140. The total number of estate labourers treated at the outdoor dispensaries was 40,647. The total number of estate labourers treated on estates was 11,807.

141. The total number of births reported from estates was 12,415, of which 6,269 were males, 6,077 were females, and 69 were stillbirths.

142. The number of deaths reported from estates was 11,938, of whom 6,064 were males, 5,866 were females, and in eight cases the sex was not stated.

143. The expenditure under the Medical Aid Ordinance amounted to Rs. 618,050·77, including exchange compensation, and the receipts to Rs. 391,784·25, derived from the following sources :—Export duty Rs. 170,579·72, hospital charges for treatment of coolies Rs. 82,803·10, recovered for visits paid to estates Rs. 23,749·04, sale of unserviceable and superfluous articles Rs. 261·04, medicines sold to superintendents of estates Rs. 1,701·21, medicines sold in bulk to superintendents of estates and prescriptions compounded Rs. 16,922·73, dispensary collections Rs. 1,638·05, cost of maintenance, medicine, and funeral expenses of other than estate labourers Rs. 90,101·06, and recoveries for maintenance of others Rs. 4,058·30. The nett expenditure was Rs. 226,266·52. The gross expenditure was :—

				Rs.	c.
Civil Branch	..	..	..	1,865,500	29
Estates Branch	..	..	..	618,050	77
Total	..			2,483,551	6

and the nett expenditure was :—

Civil Branch	..	..	..	1,606,414	47
Estates Branch	..	..	..	226,266	52
Total	..			1,832,680	99

The nett cost of medical aid for the whole Island, divided into the estimated population for 1907, was 45·954 cents per head.

144. A supplementary report on the measures taken to eradicate malarial fever will be found as an appendix to this report.

145. *Committee on Opium.*—On June 12, 1907, a Committee was appointed by His Excellency the Governor to inquire into and report upon the importation, sale, and consumption of opium in Ceylon, and to state what changes in its opinion are desirable in the present Ordinances and regulations affecting the importation and sale of the drug. The Committee was composed as under :—Sir Allan Perry, M.D., P.C.M.O. (Chairman), the Hon. Mr. S. C. Obeyesekere, the Hon. Mr. F. C. Loos, the Hon. Mr. J. Ferguson, C.M.G., and R. Morison, Esq., J.P. Sir Stanley Bois took Mr. Morison's place on this Committee on the death of the latter. The report of this Committee was submitted to Government on December 9, 1907.

ALLAN PERRY, M.D.,  
Principal Civil Medical Officer, and  
Inspector-General of Hospitals.



*Erratum.*

REPORT OF THE PRINCIPAL CIVIL MEDICAL OFFICER, PAGE B 12.

*For paragraph 143 substitute the following :—*

143. The expenditure under the Medical Aid Ordinance amounted to Rs. 623,080·47, receipts to Rs. 384,752·03, derived from the following sources :—Export duty Rs. 170,579·72, charges for treatment of coolies Rs. 82,803·10, recovered for visits paid to estates Rs. 23,715 of unserviceable and superfluous articles Rs. 261·04, medicines sold to superintendents Rs. 5,745·06, medicines sold in bulk to superintendents of estates and prescriptions Rs. 16,922·73, dispensary collections Rs. 2,231·97, cost of maintenance, medicine, and funerals of other than estate labourers Rs. 81,883·11, and recoveries for maintenance of others Rs. 1,000·00. The nett expenditure was Rs. 238,328·44. The gross expenditure was :—

				Rs.	c.
Civil Branch	..	..	..	1,865,500	29
Estates Branch	..	..	..	623,080	47
			Total ..	2,488,580	76

and the nett expenditure was :—

Civil Branch	..	..	..	1,606,414	4
Estates Branch	..	..	..	238,328	4
			Total ..	1,844,742	

The nett cost of medical aid for the whole Island, divided into the estimated population of 1907, was 46·256 cents per head.

1907,







## APPENDIX.

## MEASURES TAKEN TO ERADICATE MALARIAL FEVER IN CEYLON DURING 1907.

In compliance with the order of the Right Hon. the Secretary of State contained in circular despatch of June 6, 1906, to make a special report yearly on the measures taken to eradicate malarial fever, I have the honour to submit my remarks.

2. In a similar report for 1906 the rainfall and general configuration of the Island was described.

3. The general principles for the prevention of malarial, namely, (a) by educating the public as to the cause of malaria and how to prevent it, (b) improved sanitation, and (c) the use of quinine as a prophylactic, were continued this year.

4. (a) *Education*.—Thousands of pamphlets printed in the English, Sinhalese, and Tamil languages have been widely distributed. In them the cause and prevention of malaria have been described in a simple and popular manner. The synopsis of a popular lecture on this subject has been sent to every Medical Officer and Apothecary, and these have been instructed to lecture to the inhabitants living in their immediate neighbourhood. The Provincial Surgeons have also been instructed to lecture to the people on their tours of inspection. On the whole, the attendance at these lectures has been satisfactory, and some good will have been accomplished, but the natives receive this new doctrine as to the cause of "fever" with much scepticism, which is not to be wondered at when it is remembered with what tardiness the medical profession accepted it when it was first promulgated. The native further argues, with some reason, that he cannot understand why he should take medicine when he is well. He recognizes the value of treatment when he is ill.

5. (b) *Sanitation*.—In all the Provinces more attention has been paid to improved sanitation, more especially with regard to the cleaning up of individual compounds. In many places the surrounding brushwood and low jungle have been removed from the immediate neighbourhood of dwellings, pots and broken vessels likely to collect water have been rendered innocuous. Small hollows have been filled up and attention has been paid to improve drainage; but no works on any large scale have been carried out. These are receiving the attention of His Excellency the Governor, who has a scheme for the gradual improvement of the sanitation of those parts of the Island where malarial fevers are most prevalent.

6. (c) *Quinine as a Prophylactic*.—In 1906 paid distributors were employed to carry the remedy to the remote villages and small towns. This was a very expensive and unsatisfactory arrangement, for there was no check over the amount of the drug distributed nor as to the number of people who received it. There was reason to believe that the distributors did not perform their duties honestly, and that they sold the remedy to those actually suffering from fever. Therefore, in 1907, paid distributors were discontinued, and headmen and others holding respectable positions were supplied with quinine for distribution free to any person applying for it. This change in the manner of the distribution of the drug has not got into proper working order yet, and the numbers returned in 1906 as having been treated were less numerous in 1907. Returns from many of these voluntary distributors are not available, nor is evidence available as to the incidence of the disease in those undergoing protective treatment for comparison with those who did not take the prophylactic.

7. The compulsory treatment of children in schools and of prisoners in jails has been continued this year, with marked success. The sick rate from malaria has been very low in the prisons, and the attendance of children in schools, I believe, has been regular.

8. The following is a synopsis taken from the reports of the Provincial Surgeons as to the measures adopted:—

*Western Province*.—General sanitary improvement of compounds; quinine prophylaxis in jails and schools.

*Central Province*.—The issue of free quinine to the general public and schools; 128 villages were supplied and 11,606 persons treated. Education as to the cause and prevention of malaria and improved sanitation.

*Northern Province*.—187 villages were selected for the distribution of free quinine, the estimated population of which was 188,097. 15,801 of these took the remedy for two consecutive days weekly for ten weeks during the fever season. Of these, 2,864 suffered from fever, 12,488 remained free from disease.

Attempts have been made to fill up hollows and to improve drainage. The general improvement in the sanitation of private compounds has been more or less enforced. Pamphlets in the vernacular have been distributed and lectures given.

*North-Western Province*.—Improved sanitation in general, filling up hollows, burning rubbish, improved drainage, the clearing of brushwood near dwellings. The education of the masses in malaria. The distribution of quinine in six of the most malarious districts, which contained 431 villages with a population of 129,692. 18,552 of these took the remedy.

*North-Central Province*.—In the principal town (Anuradhapura) the jungle was cut down near dwellings, hollows have been filled, other collections of water have been oiled, the delivery of popular lectures in various parts of the Province. The free distribution of quinine to the people and to schools. 33,279 individuals took the remedy.

*Province of Uva*.—Popular lectures at various centres. Quinine distribution to school children.

*Province of Sabaragamuwa*.—Popular lectures have been given, but the distribution of quinine has been carried out indifferently.

*Eastern Province*.—Improved sanitation and drainage and the filling up of hollows. Compounds cleaned, jungle cleared, quinine distributed to the public and to the schools in malarious districts.

*Southern Province*.—Instruction by popular lectures by the Provincial Surgeon, Medical Officers, and Apothecaries. The issue of free quinine to 3,567 school children and to 29,813 persons living in the most malarious districts.

9. The amount of quinine expended during the year was 76,206 ounces, the cost of which was Rs. 50,295.96. There was no special expenditure on engineering works in connection with the prevention of malaria. The improved drainage was carried out locally.

A. P.



## PROVINCIAL REPORTS, &amp;c.

## (1) REPORT of J. CRAIB, M.D., Provincial Surgeon, Western Province.

I BEG to submit my annual report for the year under review, and to state that the general health of the Province has been fairly satisfactory.

2. There has been no outbreak of any serious epidemics, and the villages were comparatively free from malaria. There were a few outbreaks of cholera at Ragama Camp, and a few sporadic cases in the town. Dysentery and chickenpox prevailed more or less all the year round, but not to any great extent.

*Population.*

Population..	{ 1906 .. 983,669	Birth rate per 1,000 .. { 1906 .. 33·80
	{ 1907 .. 991,096	{ 1907 .. 31·08
Births registered	{ 1906 .. 33,258	Death-rate per 1,000 .. { 1906 .. 29·20
	{ 1907 .. 31,363	{ 1907 .. 24·03
Deaths registered	{ 1906 .. 28,848	
	{ 1907 .. 23,936	

*Prevalence of Sickness.*

4. The prevailing diseases were malarial fevers and their sequelæ, diseases of the digestive and respiratory systems, rheumatic affections, anchylostomiasis amongst estate labourers, and skin diseases.

5. Malarial fever prevailed to some extent, but it did not at any time assume an epidemic form, even in the parts of the Province where the disease is endemic. In the Government hospitals and dispensaries in this Province, excluding jails, 73,354 persons were treated, as against 97,998 in 1906.

6. *Dysentery and Diarrhœa* were the next important diseases in point of numbers treated. At the various hospitals and dispensaries in this Province 7,960 persons were treated.

7. *Anchylostomiasis*.—The number of cases treated at the hospitals and dispensaries was 1,429.

8. *Parangi*.—There were 663 patients treated at the various institutions.

9. *Leprosy*.—During the year 148 cases were admitted into the asylum, and 8 cases were registered because they were not in the contagious stage.

10. *Respiratory Diseases*.—Rheumatic affection and skin diseases were reported from all the stations. Respiratory diseases generally prevailed where the changes of temperature were most marked.

*Relative Mortality.*

11. *First Quarter*.—The death-rate for all races for the first quarter of the year was 30·5 per thousand, as against the average 21·8. The deterioration in health was shared by every district, and was greatest in Kalutara, which rose from an average mortality of 23·1 to 29·3, and least in Negombo, viz., 21·3, rising from an average of 19·9, Colombo taking the middle place with 27·2. The Sinhalese inhabitants of the Province had the lowest death-rate for all the races (26·7), the rate for all the ages being about 5 per cent. higher than the average. The lowest infantile mortality was in the Kalutara District (118), followed by Colombo with 123 per thousand births registered.

12. *Second Quarter*.—The death-rate for this quarter for all cases was 22·5. This Province was the healthiest of all the Provinces in the Island. The principal diseases which contributed to the death-rate were fevers, dysentery, and diarrhœa.

13. *Third Quarter*.—This Province was the healthiest in the Island, with a death-rate for all the races of 21·6. Negombo District was again the healthiest district in the Island for all the races. The death-rate was 13·1. The prevailing diseases which contributed to the death-rate were fevers, dysentery, diarrhœa, and phthisis. As many as 375 deaths were registered during the quarter from the last-mentioned disease.

14. *Fourth Quarter*.—Having no reliable data to go upon, I am therefore unable to give any definite information, but I believe the quarter was a healthy one.

*Meteorological Conditions and their Effects on Public Health.*

15. During the year the rainfall was below the average for the last thirty years or more. Generally after the set in of the rains malarial fevers always follow and during the dry seasons dysentery, rheumatic affections, and respiratory diseases are most prevalent.

*Particular Diseases.*

16. *Cholera*.—The Province was not free from this disease; there were 19 cases, with 15 deaths, admitted into the Infectious Diseases Hospital at Kanatta. 15 cases occurred amongst coolies and cartmen working at the Wharf. The first case was on January 2. On February 1 another case occurred in Slave Island. On March 6 another case occurred at Grandpass. The source of infection could not be traced. The next case was a recent arrival from India, and was residing at Galle Face Hotel. This case took ill on December 24, and the last case was at Jawatta on December 29. Cause could not be traced. At Ragama Camp there were eight outbreaks during the year amongst estate coolies who had arrived from the coast of India. There were 14 cases in all, with 9 deaths. The last outbreak was in the month of December. In all the outbreaks stringent measures were adopted, with the result that none of the outbreaks spread. There were in all 33 cases, with 24 deaths.



17. *Smallpox*.—There were 63 cases admitted into the Infectious Diseases Hospital at Kanatta during the year, and of these 11 proved fatal. The first case of smallpox was on February 20 from Kynsey road, and was a recent arrival from India. The second case was the mother of this patient. 63 cases were from ships, and were infected at Calcutta, Singapore, and Shanghai, the greatest number being from Calcutta. In the month of July an outbreak occurred in Moor street, and spread to other parts of the town, and beyond the town limits to Welikada, Kelaniya, and Kanatta, the infection being carried to these villages by persons who frequented Moor street. In August another outbreak occurred in Slave Island, and from there it spread to other parts of the town, viz., Grandpass, Layard's Broadway, Silversmith street, and to Panadure, Moratuwa, and Ratmalana.

18. *Chickenpox*.—There were 753 cases reported from various parts of the Province, and the majority of the cases were treated in their houses, with the exception of the cases occurring in the town of Colombo, which were treated at the Kanatta Infectious Diseases Hospital.

19. *Measles*.—There were 67 cases reported from the following stations, viz., Kanatta Infectious Diseases Hospital 56 cases, Ragama Camp 5 cases, 2 from Panadure, 2 from Negombo, and 1 each from Veyangoda and Neboda.

20. *Enteric Fever*.—This disease prevailed throughout the year, and the majority of the cases were treated at the General Hospital, Colombo, Lady Havelock Hospital, and Kanatta Infectious Diseases Hospital. In the Kanatta hospital 208 cases were treated with 31 deaths, at the General Hospital 407 cases with 90 deaths, at Lady Havelock Hospital 65 cases with 5 deaths. In the Panadure district 51 cases were treated, and of these 17 were admitted into hospital and 6 died. In the Kalutara hospital 35 cases were treated with 9 deaths, and 91 cases were treated at the dispensary. At the Female Outdoor Dispensary, Borella, 85 cases were treated, and at Beruwala dispensary no less than 283 cases were seen, at Hanwell dispensary 38 cases, and at Kesbewa 22 cases, and at Moratuwa dispensary 101 cases were treated. The total number treated was 1,317.

21. *Diphtheria*.—In all there were 3 cases treated, 2 in the General Hospital, Colombo, and 1 in the Infectious Diseases Hospital, Kanatta.

22. *Scarlet Fever*.—There was one case from a mail boat.

#### *General Sanitary Condition of the Province.*

23. The general sanitary condition of the towns and villages in the Province remains much the same as during the previous years. In many places the houses are crowded together and surrounded by live fences, which shut out light and air. The compounds of many houses are low-lying, and become water-logged for days and even for weeks after the rainy seasons have set in. Hardly any of the houses, except in large towns, are provided with dry-earth latrines, and most of them have filthy cesspits, but in most of the towns and villages along the maritime coast the native pig is the principal scavenger. A long-felt want, viz., a Local Board for the town of Moratuwa, was established towards the end of the year, and will be brought into proper working order by the beginning of 1908, and it is hoped that much will be done by the Board to improve the sanitary condition of this town, which is much in need of same.

24. *Colombo*.—This town is kept in a fair sanitary condition, considering the existing arrangements. Many parts of the town are overcrowded, and drainage defective. Cesspits are being gradually closed, and wells which are liable to pollution are being filled in; all the sweepings and rubbish collected in the town should be incinerated. The water supply to the town is now sufficient since the main has been duplicated. The water is pure and wholesome.

25. *Panadure*.—There has been during the year a slight improvement noticed in the sanitary condition of the town. Drainage is still defective, but is being gradually taken up by the Sanitary Board. Sites for public latrines and markets have been selected; more attention has been of late paid to the scavenging of this town, and some of the streets have been lighted at night. The water supply is obtained from wells, which are liable to pollution.

26. *Kalutara*.—The sanitary condition of this town is being gradually improved by the Local Board, but there is still much to be desired. The water supply is from wells and is defective, so also is the drainage. Public latrines are insufficient. There is some overcrowding.

27. *Negombo*.—Drainage is still defective, but is gradually being improved. The town is very low-lying and flat. The water supply is defective, and the new scheme for supplying the town with a wholesome water is still under consideration. Some parts of the town are overcrowded.

28. *Avisawella*.—The sanitary condition of this town is unsatisfactory. Drainage defective, no public latrines, and the water supply is defective.

29. *Minuwangoda*.—This small town was kept in a fair sanitary state during the year. The drainage is gradually being extended and improved. Public latrines added to in number, and some of the public wells have been protected from pollution.

29A. *Moratuwa*.—This insanitary town remains in the same condition and nothing has been done to improve its condition, but now that a Local Board has been established we should see rapid progress in the near future. A pure and wholesome water supply is the first thing which the Board should bring forward, and public latrines, markets, &c.

#### *Hospitals.*

30. *General Hospital, Colombo*.—The total number treated in the pauper section of this institution during the year was 11,305, as against 17,115 in 1906. Of these, 1,029 were new admissions. The total number of deaths was 1,387, as against 2,044 in 1906. The greatest mortality was, as usual, amongst those sent in by the police. The daily average sick was 424.08, as against 632.31 in 1906. There was no overcrowding during the year. Whenever any of the wards showed signs of overcrowding, steps were taken to have all chronic cases transferred to Ragama Pauper Hospital and since this hospital



was opened in 1906, 564 patients were transferred from time to time. The Ragama hospital has accommodation for 100 males and 50 females, and the congestion at the General Hospital is considerably reduced but at times the lower wards become congested, but only to a moderate degree. The chief causes of death were:—

	Cases.	Deaths.		Cases.	Deaths.
Enteric Fever ..	353	79	Dysentery ..	390	153
Malarial Cachexia ..	356	25	Diarrhoea ..	715	247
Phthisis ..	560	210	Peritonitis ..	67	19
Pneumonia ..	228	87	Bright's Disease ..	80	24
Lobular Pneumonia ..	46	22	Anchylostomiasis ..	429	50
Debility ..	623	122	Abscess of Liver ..	19	11

The majority of the cases which proved fatal were admitted more or less in a moribund and hopeless state, and many of the enteric cases admitted shortly after admission. The latrines are on the dry-earth system, and were kept in as sanitary a condition as it was possible to do considering the nature of the buildings and the arrangements of the seats. All the latrines should be rebuilt and supplied with Doulton squatting plates. A Thresh's disinfectant was daily in use. The institution consists of 25 wards and 8 solitary rooms, and the number of beds is 425. This institution requires to be rebuilt.

The old administration block, which was converted into quarters for the Ceylonese nurses, is not sufficient, and must be added to at an early date. A new milk room was completed during the year and the new mortuary is nearing completion. A special ward of 10 beds at least is much needed for gynecological cases.

An extra steward was allowed for the paying section during the year, but an extra clerk is much wanted to keep the clerical work from falling in arrears, and I trust an extra clerk will be granted at an early date.

*Paying Section, General Hospital.*—The accommodation for paying patients will soon be increased, when once the new Planters' and Munro wards are opened. No further accommodation for patients of this class will be required, but some extra accommodation is required for patients who can pay a daily charge of one or two rupees. In addition to these new wards, a new operating room for the paying section is also about to be completed. The total number of patients admitted during the year was 559, viz., 314 medical and 245 surgical cases. The percentage of deaths was 8·23, as against 11·90 in 1906. Two rooms of the old Planters' ward will be shortly converted into an association ward for Post Office employes, and will be called the Skinner memorial. The late Grenier memorial institution will shortly be converted into two wards for infectious cases occurring amongst passengers from steamers.

31. *Victoria Memorial Eye Hospital.*—The number of in-patients treated during the year was 594, of which 27 were paying patients. The average daily sick was 35·80, as against 37·35 in 1906. The largest number of patients on any day was 47, and on several occasions every bed was occupied and patients had to await admission. At the end of the year there were 41 cases remaining. The death-rate was ·06. The receipts for paying patients amounted to Rs. 1,801·89, and the cost per head was a fraction over 76 cents per diem. This includes the paying patients' diets, the salaries, and allowances paid to the staff of the institution. There were 219 major operations performed. At the Grenier Outdoor Dispensary 5,250 cases were treated, and they paid 13,170 visits in all, and the voluntary contributions amounted to Rs. 717·15. There were 354 operations performed on out-patients.

32. *Clinic for Tropical Diseases, Borella.*—During the year 93 cases of diseases peculiar to the tropics were treated. The institution contains 16 beds, and the daily average sick in hospital was 14, with death-rate of ·93. The diseases treated were principally skin diseases, parangi, leprosy, elephantiasis, ulcers, and malarial cachexia.

33. *Lady Havelock Hospital.*—The total number of patients treated during the year was 1,112, as against 1,153 in 1906. The daily average sick was 34·51, as against 33·61 in 1906. The percentage of deaths to total treated was 8·09, as against 7·02. Of the 1,112 patients treated, 347 were children, viz., 131 boys and 216 girls. There were 57 operations performed; of the operated cases 2 died. During the year the staff of nurses has been kept up to the allotted number, viz., 10.

*De Soysa Lying-in Home.*—The total number treated at this hospital during the year was 961, as against 933 in 1906. Of these, 916 were discharged cured and 9 died, and 36 were remaining under treatment at the end of the year. The percentage of deaths to total treated was ·93, as against 2·14 in 1906. The daily average sick was 26·99, as against 21·35 in 1906. The popularity of this institution is yearly increasing, particularly among the Muhammadans, who in several instances seek admission not from sheer necessity, but from choice.

The paying section is also becoming more popular; the number of admissions during the year was 27, as against 22 in 1906. This institution as a training school is doing excellent work. During the year 20 midwives were trained and sent out after passing a satisfactory examination. The staff of pupils was increased during the year to 8, and the gradual introduction of European methods of conducting labour under aseptic principles to remote villages is now assured. 175 operations were performed during the year.

35. *Police Hospital.*—The number of cases treated during the year was 568. Of these, 562 were new admissions, as against 753 cases in 1906. The percentage of deaths to total treated was ·88, as against ·32 in 1906. The daily average sick was 6·83, as against 8·95.

36. *Branch Hospital, Borella.*—338 patients were treated during the year, as against 302 in 1906. The average daily sick was 17·51. There was no overcrowding. A new bathroom is required and alterations to the existing kitchen. Of the 338 cases treated, 123 were for secondary syphilis, 61 for tertiary syphilis, 2 for hereditary syphilis, and 139 for gonorrhoea, and 13 for other diseases.

At the Female Outdoor Dispensary during the year 18,029 patients were treated, the total number of times they were seen being 28,136. The daily average attendance was 77, and the number of Muhammadans treated was 1,125. The voluntary contribution amounted to Rs. 813·75, as against Rs. 891·80 in 1906.



37. *Panadure Hospital*.—There were 729 patients treated during the year, as against 735 in 1906. The death-rate was 15·08, as against 14·55. The accommodation at this hospital is inadequate—new quarters for the apothecary and an operating room are very much wanted. The site of this institution is not very desirable; it would be better to build a new hospital on a more suitable site.

38. *Kalutara Hospital*.—During the year 1,214 cases were treated, as against 1,388 in 1906. The daily average sick was 40·99, as against 44·23 in 1906. The death-rate was 11·2, as against 11·31 in 1906. New quarters for the apothecary, a dispensary with waiting-room, and an operating room are much needed at this institution. At the outdoor dispensary attached to this hospital 14,098 were treated. The voluntary contributions for the year were Rs. 1,446·82, as against Rs. 1,599·04 in 1906.

39. *Negombo Hospital*.—At this hospital 851 patients were treated, as against 1,110 in 1906. The daily average sick was 28·13, as against 35·67. The percentage of deaths to total treated was 10·1, as against 11·35. The old dispensary will shortly be converted into an operating room, and a new dispensary, office, and waiting-room built elsewhere, which will be all that will be required to complete this institution.

40. *Avisawella Hospital*.—1,414 patients were treated during the year, as against 1,520 in 1906, with a death-rate of 29·91 per cent., as against 33·61 in 1906. 926 cases were discharged relieved or cured, and 65 remained under treatment at the end of the year. The high death-rate was mainly due to destitute Malabars and labourers sent in from estates. There was no overcrowding to speak of, but in the near future this hospital will have to be enlarged, as large tracts of land have been opened within the last two years necessitating an increase of the labour force. The attendance at the outdoor dispensary was 9,723 civil patients, paying in all 18,033 visits, and 1,735 estate labourers, and the total number of visits paid was 2,517. The voluntary contributions amounted to Rs. 398·35, as against Rs. 637·78 in 1906.

41. *Neboda Hospital*.—1,272 patients were treated during the year, as against 1,422 in 1906. The death-rate was 25·47, as against 22·85 in 1906. A new female diarrhoea ward of 10 beds was opened during the year, and the new administration block was completed and handed over to the Department. Quarters on type plan for the visiting apothecary are urgently required. The water supply to this hospital is inadequate, as the well in the compound during the dry seasons becomes dry. Water should be brought in piping from a spring which is said to exist about half a mile away from the hospital. There were 4,285 civil patients treated at the outdoor dispensary during the year and 2,172 estate labourers. The voluntary contributions amounted to Rs. 145·63, as against Rs. 11·65 in 1906.

42. *Ragama Pauper Hospital*.—This institution was opened in November, 1906, for the purpose of relieving the General Hospital of Colombo of destitute and chronic cases. The hospital has accommodation for 100 males and 50 female patients. The medical officer of the cooly camp at Ragama is placed in charge of this hospital, and a staff consists of the medical officer, apothecary, a matron with three sisters, and attendants. During the year 742 patients were admitted, and at the end of the year 110 remained under treatment, making a total of 852 treated for the whole year. 205 patients were transferred from the General Hospital, 6 sent in by the police, and 30 voluntarily sought admission. Of the cases treated, 467 were Malabars, the majority were estate labourers, who, having been incapacitated for work, were driven off the estates by their kanganies and found their way to Colombo, where they were eventually picked up by the police and sent to the hospital for treatment. Of the number treated, 482 were discharged, 250 died, and 120 remained under treatment at the end of the year. The daily average sick was 130·29, and percentage of deaths to total treated was 29·34, namely, 28·57 amongst mixed races and 29·97 amongst Malabars. Considering the class of cases treated, I am astonished that the death-rate was not higher. 49 cases of phthisis were transferred to this institution during the year, and of these 18 proved fatal. The water supply is obtained from wells at the bottom of the hill, and is pumped up into iron tanks by an engine. The supply is good and abundant. The night soil is incinerated. The buildings are airy and well suited for their present purpose, but I would recommend that the sides be built up with brick to the height of 4½ feet, and the ends built up with the same material, and the cadjans removed. A new kitchen is very much required, as well as storerooms of a permanent nature.

43. *Leper Asylum, Hendala*.—There remained in the asylum at the end of 1906 317, and during the year 148 were admitted, viz., 152 males and 22 females. The total number treated during the year was 465, and of these 68 males and 11 females were discharged, 66 died, and 320 remained, as against 317 at the end of 1906. The daily average sick was 325·85, as against 327·23; and the greatest number resident in any one day was 340, and the lowest 307. The total number of beds available are 382, viz., 280 for males and 102 for females. Of the new admissions, 84 were new admissions and 64 re-admissions. Of the new admissions, 27 were of the tubercular, 37 of the anæsthetic, and 27 of the mixed form of leprosy. The Western Province, as usual, contributed the largest number of admissions, viz., 54, Southern Province 9, Central Province 4, Province of Sabaragamuwa 4, Province of Uva 1, North-Western Province 1, and South India 9. Of those discharged, 7 were allowed home isolation, 2 being discharged under special authority of the Principal Civil Medical Officer, 27 were given temporary leave, and 43 absconded, of whom 11 are still at large. There were 66 deaths, as against 67 in 1906; and the percentage of deaths to total treated was 14·19, as against 13·64 in 1906.

The female side was overcrowded up till May, when ward No. 1 of 48 beds was enclosed in and handed over to the female side. The new ward of 50 beds was completed, and has been occupied since May, 1907. To prevent the lepers from absconding, the wall should be heightened and a wall built along the river bank. The wall at present in existence is so low that a leper can scale over it at any place. All absconders are punished by the stoppage of their betel allowance and imprisonment generally for a month in a cell.

*Outdoor Dispensary, Hendala*.—3,379 patients were treated at this dispensary during the year.

44. *Infectious Diseases Hospital, Kanatta*.—During the year 855 cases were treated, as against 642 in 1906. 830 new cases were admitted, and of these 756 were discharged, 72 died, and 27 remained under treatment at the end of the year. The daily average sick was 33·59, and the percentage of deaths to total treated was 8·42. Of the total treated, 64 were for smallpox, 407 for chickenpox, 58 for measles, 4 for whooping cough, 9 for mumps, 1 for scarlatina, 200 for enteric, 19 for cholera, 1 for diphtheria,



3 for acute diarrhoea, 56 were placed under observation for smallpox, 9 for cholera, 4 from plague-infected ports with fever, 16 for diarrhoea and dysentery, 1 for diphtheria, and 3 for debility with diarrhoea. Of the cases which proved fatal, 11 were from smallpox, 2 from chickenpox, 1 from measles, and 2 from whooping cough, 1 from diphtheria, 31 from enteric, 15 from cholera, 6 from diarrhoea and dysentery, and 3 from debility with diarrhoea. This institution consists of a number of temporary cadjan buildings with only one permanent building of two rooms, which is set aside for cases of smallpox occurring amongst the better class of people, and one building for contacts.

#### *Jails.*

45. The general health was, on the whole, very satisfactory. There was no epidemic, and very little fever. The daily average sick in all the jails was 55·83, as against 82·24 in 1906 and 104·75 in 1905. The death-rate to total strength of jails was 2·92, as against 3·64 in 1906 and 3·62 in 1905. The percentage of deaths to total treated was 2·90, as against 2·46 in 1906 and 1·95 in 1905. The prevailing diseases during the year were malarial fevers, diarrhoea, dysentery, pneumonia, and eye diseases. There were only 4 cases of chickenpox, 2 of measles, and 15 of mumps treated in the Infectious Diseases Hospital, Borella, throughout the year. There were no cases of cholera.

Malarial fever did not prevail to such an extent as in the previous years, and this I attribute to the prophylactic treatment with quinine, which was first commenced in 1904, and more or less continuously given ever since; it was discontinued in the month of August, and commenced again in October and continued up to the end of the year. The number of cases of malaria treated in the hospitals was 328 with 3 deaths, as against 851 with 14 deaths in 1906.

Dysentery and Diarrhoea were less prevalent than in the previous years, and this is due to better sanitary arrangements.

The number of eye diseases treated during the year was 242, as against 235 in 1906. Welikada and Mutwal jails contributed the most of the cases, but the worst cases were from Mutwal jail.

Thirty-six cases of pneumonia with 16 deaths were treated, and 6 cases of phthisis pulmonalis with 2 deaths. 67 cases of bronchitis with 2 deaths.

At the end of 1906 4 cases of enteric fever remained, and 8 new cases were admitted during the year. There were no deaths. The last case treated was admitted from Mutwal jail in July last. At Mahara 11 cases were treated during the year, with 1 death. There were 4 cases of acute diarrhoea treated at Borella hospital with 2 deaths, and 1 case at Mahara, which proved fatal. The latrines were kept in a sanitary state throughout the year; they are all now supplied with Doulton squatting plates. The water supply to all the jails, with the exception of Mahara, is the town supply, and is pure, wholesome, and sufficient. At Mahara the supply is from a well outside, and the water is boiled before use. There was, as usual, slight overcrowding at Welikada and Hulftsdorp jails, but the other jails were never overcrowded.

#### *The Port of Colombo.*

46. During the year 2,758 steamers and 516 native craft called at the port, as compared with 2,857 steamers and 484 craft in 1906. Of these, 1,935 were granted free pratique, and 823 were allowed to work as healthy in quarantine. Ten vessels were placed in strict quarantine owing to the existence of infectious diseases on board.

No case of bubonic plague or suspected bubonic plague was discovered on board any vessel during the year. Disinfection, as before, was carried on at Kochchikade up to the month of August, when the new disinfecting station at the foot of the breakwater was taken over from the Harbour Works Engineer. This new station is provided with an equifex disinfector, in addition to a Thresh's disinfector, and is thoroughly equipped. There is ample accommodation for saloon passengers of both sexes, tally clerks, coolies, &c. There is accommodation for an apothecary, and the water supply is sufficient. The station is lighted by electricity, and all classes of passengers can be disinfected as to person and effects without any delay or discomfort. During the year 15,763 passengers, 37,692 coal coolies, 33,035 cargo coolies, and 5,732 tally clerks underwent personal disinfection.

The immigration dépôt at the foot of the breakwater has been rebuilt, and is now more spacious and more suitable to requirements than the old one, which was demolished. It is fully equipped with latrines fitted with Doulton squatting plates and bathing troughs with an ample water supply.

The total number of estate labourers who passed through the dépôt during the year was 53,723, as against 88,930 in 1906. Owing to a widespread epidemic of smallpox in India vaccination and re-vaccination was carried out extensively throughout the year at the dépôt. Total number vaccinated was 21,097.

#### *Ragama Camp.*

47. 56,294 coolies and others passed through the camp, as against 88,167 in 1906. Of this number, 20,757 were either cholera contacts or from cholera-infected areas, 3,972 from smallpox-infected areas, and 97 from plague-infected ports. The majority of the latter were lascars from Bombay. There were 8 outbreaks of cholera, with 14 attacks and 9 deaths.

The water supply to the camp is obtained from wells at the bottom of the hill, and is pumped up and stored in iron tanks. The sanitary condition was throughout the year satisfactory. Drainage good. The night soil is collected twice a day and incinerated. The disinfector was removed from camp 4 to camp 1. There was no case of smallpox during the year, though smallpox prevailed to a great extent on the coast of India. All coolies without good marks of vaccination were vaccinated on their arrival in the camp. During the year 10,044 were vaccinated.

This camp has a hospital attached to it, situated almost half a mile away, and is of a permanent nature. During the year 33 cases were treated, with a death-rate of 30·3 per cent. The diseases were chickenpox, measles, cholera, dysentery, malarial fever, tetanus, pneumonia, and diarrhoea.

#### *Vaccination.*

48. During the year 61,918 subjects other than immigrants were vaccinated, as against 37,880 in 1906. Of these, 56,051 were primary vaccinations and 5,867 re-vaccinations. Of the primary, 51,996 were successful and 2,249 unsuccessful. In 1,806 subjects the result of the operation was not known.



The percentage of successful cases to total inspection of primary vaccinations was 95·85. Of the 5,867 re-vaccinated, 4,246 were successful and 873 unsuccessful, and the result was not known in 748. The percentage of successful subjects to total inspected was 82·94, as against 83·80 in 1906. 34 vaccinators were employed during the year. Calf vaccination was carried on almost daily at the depôt at Kanatta. During the year 419 calves were vaccinated, from which 41,266 tubes of glycerinated lymph was made and distributed. The total cost of the institution for the whole year was Rs. 6,234·21, and the amount realized by the sale of calves and lymph was Rs. 926·25. 688 vaccination defaulters were prosecuted during the year. 415 were convicted and fined; the rest were acquitted for various reasons.

(2) REPORT of G. Schokman, M.B., Provincial Surgeon, Central Province.

I BEG to submit my report of the health of the Province for 1907.

2. The estimated population as per figures obtained from the Registrar-General is as follows :—

Population	.. { 1906 .. 650,986		
	.. { 1907 .. 651,969		
Births registered	.. { 1906 .. 24,466	Birth-rate per 1,000	.. { 1906 .. 37·5
	.. { 1907 .. 21,144		.. { 1907 .. 32·4
Deaths registered	.. { 1906 .. 24,349	Death-rate per 1,000	.. { 1906 .. 37·3
	.. { 1907 .. 18,245		.. { 1907 .. 27·9

*Prevailing Diseases.*

3. Unlike the past year, which was one of unusual sickness and high mortality, the year under review was comparatively healthy and free from epidemics of any kind. The rainfall was about the average, and evenly distributed. All institutions record a diminution in numbers treated. The most prevalent diseases were malarial fevers, intestinal and respiratory diseases, and rheumatic affections. Influenza prevailed extensively during the early months and towards the end of the year, accompanied by sporadic outbreaks of pneumonia and acute diarrhœa.

*Malarial Fever.*—The most malarial districts in the Province are Matale, and Tumpane, Dumbara, and Uda Dumbara of the Kandy District. Itinerating dispensers were employed for a period of ten weeks during the south-west monsoon in distributing quinine as a prophylactic measure. Though some good has resulted from this distribution, it is impossible to obtain definite data of the benefits accrued. The fact, however, remains that the number of cases of malarial fever treated in these districts has fallen to considerably less than half of that of the previous year.

*Dysentery.*—Except during the early part of the year, when small outbreaks were reported from several villages, this disease did not prevail to any great extent.

*Parangi* still prevails in the outskirts of the Province bordering the Kurunegala and Alutnuwara districts, and the North-Central Province, but very few cases of an acute type of the disease are met with.

*Respiratory Diseases.*—These prevailed chiefly in the early months of the year with the cold and chilly north-east winds.

*Rheumatic Affections, Ulcers, and Skin Diseases* were reported from all parts of the Province.

4. Relative mortality in the different seasons :—

*First Quarter.*—This quarter was, as usual, unhealthy, due to the sudden variations in temperature and the prevalent cold and chilly north-east winds. The death-rate (31·1) was slightly in excess of the average (30·5). Matale was the unhealthiest district of the Province, with a mortality of 40·3. The birth-rate of the Province (44·1) had fallen below the average (51·7), and the districts most affected were Kandy, Matale, and Nuwara Eliya. This decline is probably due to the bad health of the people consequent on the unusual sickness in these districts in the past year.

*Second Quarter.*—This quarter was healthy, and all parts of the Province enjoyed better health than usual. The death-rate had fallen to 23·1 from the average 27·7. In the Kandy District the death-rate was 22·4 against 27·5, and in Matale 24·6 against 32·4. Matale District was the unhealthiest in the Province. The birth-rate continued to show a decline, falling from an average of 40·9 to 35·6.

*Third Quarter.*—This quarter was very healthy, and even unhealthy Matale District showed a considerable improvement, the average mortality of 36·6 falling to 25·7. Like the two first quarters of the year, there was also a decline in the birth-rate.

*Fourth Quarter.*—The health of the Province continued good.

*Particular Diseases.*

5. *Smallpox.*—Only 2 cases of smallpox were reported, 1 on Blair Athol and the other on Annfield estates in the Dikoya district. Both cases recovered.

*Cholera.*—None.

*Acute Diarrhœa.*—Fifteen cases occurred in Bogambra prison in April with 4 deaths, 18 sporadic cases on nine estates in the Dolosbage district, a few cases on estates in Maskeliya, and 4 cases in the Nalanda division of the Matale District.

*Chickenpox.*—As usual this disease was widespread in the villages and on estates. 785 cases were reported with no deaths; 352, or nearly half of these cases, occurred in the Kandy District. It was less prevalent than last year.

*Enteric Fever.*—Fifty-eight cases were treated in Kandy, with 16 deaths—a large increase over 1906. A good many of these cases were introduced from Kurunegala and the outlying villages. 29 cases were treated in the Nuwara Eliya hospital to 35 the previous year, and 2 cases in town to 14 in 1906. The death-rate of cases treated was 17·24, as against 22·3 in 1906. In Matale 6 cases were treated.



*Leprosy.*—Nine lepers were treated in the hospitals during the year, 4 of these in the contagious stage were admitted into the asylum at Hendala, 4 were sent back to the Coast, and 1 remained on an estate. Three lepers discharged from the asylum made adequate arrangements for their isolation and treatment at home, and were from time to time reported on by the medical officers of the respective districts.

#### *Sanitation.*

6. *Kandy.*—Very little was done to improve the sanitary condition of the town. Katukele and Peradeniya road had an improved water supply by substituting pipes of larger calibre. The supply from the reservoir proved sufficient for the requirements of the town. Public wells at Getambe and Katugastota were completed, but the river water is still largely used. The drainage remains much the same as in previous years. Scavenging was satisfactorily done. Bakeries were kept clean. The dairies are all registered and under supervision.

*Matale.*—This town is under a Local Board of Health. The improvement of the drainage mentioned in my last report was continued and extended. Water supply good, but insufficient, scavenging and conservancy were properly attended to.

*Nawalapitiya.*—Water supply pure and sufficient. Scavenging not satisfactorily done. The rates were increased by half per cent. Latrines situated on land planted with tea are not availed of by the public. Slaughter-house, markets, and bakeries are kept up in a fairly satisfactory state. The question of drainage is under the consideration of the Board. The swamps referred to in previous reports have received no attention.

*Gampola.*—Sanitary state of town satisfactory. Streets swept twice daily and refuse carted away. Drainage fair. Several new drains are required. Bakeries inspected regularly and kept clean and in order. Two new latrines were erected in crowded localities. Lighting satisfactory. Slaughter-house clean. Water supply limited.

*Pussellawa.*—The bazaars are in the whole, satisfactory and in a sanitary state, except those at Pupuressa, which should be declared a town under the Small Towns Sanitary Ordinance. Drainage requires extension. Another Horbury latrine is needed near the Rothschild end of the town. Water supply good and sufficient. The main supply is from a spring. Scavenging well done. A slaughter-house of modern type should be built.

*Dikoya.*—Drainage at Dikoya and Norwood satisfactory. More drains are necessary at Hatton. Water supply necessary at Hatton and Dikoya. Latrines sufficient. Scavenging well done. Bakeries and slaughter-house kept clean and in order.

*Maskeliya.*—Scavenging well done. Paved surface drains are badly needed at the back of the range of boutiques on the Glentilt side. There is a drain under one of the boutiques, which should be closed, as it receives all the sewage from the adjoining boutiques. To remedy this the drain at the back should be extended further down. A Horbury latrine is needed near the pioneer lines for the use of the Public Works Department coolies. Water supply fair. Surface wells liable to pollution and should be built round. Bakeries kept clean and in order. New buildings with stalls of the type in use at Hatton should be provided for the sale of meat.

*Bogawantalawa.*—Drainage defective. Water supply abundant, but exposed to pollution. Latrines, scavenging, and slaughter-house satisfactory.

*Dimbula.*—The drains require cementing. There are no latrines. Two are required. Water supply ample.

*Lindula.*—Sanitary condition of bazaars in district satisfactory. The improvements necessary are the extension of the backyards of houses which are very near the banks by cutting further. Talawakele was provided with a water service during the year. Water supply of Lindula and Tillicoultry bazaars insufficient during the dry months. There is ample room for improvement in the scavenging of the bazaars.

*Nanu-oya.*—A good deal of improvement was effected during the year, such as drainage and water supply, which are nearing completion.

*Agrapatana.*—Water supply liable to pollution. Drains require cementing.

*Nuwara Eliya.*—Water supply pure, wholesome, and abundant. The diverting of another stream on the Pedro River into the present reservoir stream so as to ensure an abundant supply is under consideration, and will be taken in hand early in 1908. An additional latrine was erected at Hawa Eliya. Overcrowding has been relieved as much as possible. Drainage is being steadily improved. The Board of Improvement is now giving its attention to the old bazaar section, which is most insanitary.

*Uda Pussellawa.*—Sanitary state satisfactory. Markets kept clean.

*Pundalu-oya.*—Sanitary condition satisfactory. Drainage good. Water supply sufficient. Slaughter-house well kept.

*Madulkele.*—No improvements effected at Huluganga, where there is a large Sunday market. Two latrines should be provided, and drains built. There is an ample supply of water for drinking and flushing drains. Slaughter-house well kept.

*Wattegama.*—Kept clean and in a sanitary state. Work in connection with a water service for the town is being carried out at present.

*Galagedara.*—Water supply good, and obtained from wells.

*Padiyapelella.*—Drainage still defective. Another Horbury latrine is required. Scavenging regularly done. Water supply abundant and good.

*Dambulla.*—In a primitive condition. No latrines; no drainage.

#### *Hospitals.*

7. *Kandy.*—There were 1,334 less admissions than in 1906. The number of admissions was 4,220, and the total treated 4,381. Of these, 3,726 were discharged, 464 died, and 181 remained over. The daily average sick was 179·87 to 193·89 of the previous year, and the percentage of deaths to total treated



was about the same, viz., 10·59 and 10·96. The chief diseases treated were dysentery and diarrhoea, anchylostomiasis, pneumonia, and enteric fever. There were 61 cases of pneumonia with 21 deaths, and 560 cases of anchylostomiasis with 48 deaths. Improvements were effected to the kitchen and maternity ward, and a water service laid on to the house of observation. One electric lamp was put on to the approach road leading to the hospital.

In the house of observation 5 remained over from the previous year, and there were 36 admissions. 21 of these were transferred to the lunatic asylum, 16 were discharged, 3 died, and 1 remained over at the end of the year.

*Matale*.—The number treated during the year was 2,147. The daily average sick was 93·32, with a death-rate of 12·63. Last year the percentage of deaths to total treated was 28·05. In the dispensary 16,606 persons were treated to 25,014 the previous year, and the healthy condition of the district was indicated by the small number of fever cases treated. In 1906 12,796 persons were treated for fever to 3,860 this year. The nurses' quarters were enlarged by the addition of another room.

*Nuwara Eliya*.—Total treated was 875, with a daily average sick of 34·23, and death-rate of 8·45. 763 cases were discharged, 74 died, and 34 remained at the end of the year. The number of cases treated at the dispensary was 3,523, and of this number 706 were estate labourers.

*Gampola*.—Much discussion and opinion has been expressed as regards its site and the desirability of its removal to a higher elevation, but the floods which occurred during 1906 were unprecedented and not known for forty years. It was not attended with any bad result, and no outbreaks of disease occurred in the surrounding submerged villages. Improvements in the drainage of the hospital are necessary, and should be undertaken at an early date. The number of cases admitted into hospital was 1,068, compared with 1,143 of 1906. The total treated was 1,091 with 23 remaining over from the previous year. The death-rate was 11·37. At the dispensary 13,566 cases were treated, and of these 4,472 were estate labourers.

*Dambulla*.—This hospital is availed of largely, not only by the people of the district, but also by the villagers in the North-Central Province. The class of cases treated are chiefly malarial fever, ulcers, and parangi. The total number treated was 628, with a death-rate of 5·89. 3,316 persons were treated in the dispensary to 3,154 the previous year.

*Katugastota*.—This hospital is chiefly used for the treatment of parangi and chronic ulcers and to relieve the overcrowding in the Kandy hospital. At the dispensary 6,787 cases were treated, and of these 2,071 were for fever.

*Nawalapitiya*.—Total treated was 1,449. Of this number, 1,058 were discharged, 338 died, and 53 remained. The daily average sick was 67·40. Death-rate 23·48. This high death-rate is partly attributed by the medical officer to the large number of vagrants picked up and sent in by the police, and to the hopelessly bad cases of anchylostomiasis from the district estates. At the dispensary 10,413 cases were treated, and of this number 3,846 were estate labourers.

*Lindula*.—The death-rate of this hospital is always high (24·28). Last year it was 23·09—attributed to the emaciated condition and low vitality of the coolies admitted. Anchylostomiasis seems to be very prevalent. 110 cases were treated during the year, with 20 deaths. The daily average sick was 60·82, and the total treated 1,112.

*Maskeliya*.—This temporary hospital has served its purpose well for the treatment of serious cases, ordinary cases being transferred to Dikoya in an ambulance. The mortality to total treated was 27·51 against 33·33 in 1906, and the number of admissions 286 to 334. It is in contemplation to build a new hospital for the district at a cost of Rs. 70,000 on Bunyan estate. The site selected is good, and in the vicinity of the medical officer's residence.

*Dikoya*.—The total number treated was 1,281 to 1,604 the previous year. The death-rate was 15·27 and 20·69. The daily average sick was 79·10. The hospital wards were overcrowded during the second quarter, especially on the female side, due to increased number of admissions from the district.

*Madulkele*.—A new hospital is under construction. The number treated was 682, of these 605 were new admissions. In 1906 the figures were 810 and 789. The daily average sick was 34·35, against 39·53 in 1906. The number of deaths was 100, a percentage of 14·66. The percentage last year was 16·79. 3,090 patients were treated at the outdoor dispensary to 4,036 in 1906.

*Deltota*.—The total treated was 435 to 565 the previous year, and 83 deaths to 136.

*Maturata*.—613 cases were treated, of these 59 died—a mortality of 9·62 per cent.

*Ramboda*.—The total number treated was 440, against 528 in 1906. Of these, 171 were discharged cured, 152 relieved, and 7 not improved; 83 died and 22 remained. The daily average sick was 25·36, against 25·91 in 1906; death-rate 18·86 per cent. The number of cases treated at the dispensary was 2,173, of these 734 were estate labourers.

*Pussellawa*.—This is a small hospital. There were 201 admissions, against 259 in 1906; and 2,048 new cases were seen at the dispensary, as compared with 3,353 last year. The death-rate was 25·35.

*Uda Pussellawa*.—The total number treated was 517, of this 441 were discharged, 62 died, and 14 remained. The death-rate was 11·99. At the dispensary 2,906 cases were treated, and of this number 1,152 were estate labourers.

*Dimbula*.—442 patients were treated to 467 the previous year with 125 and 148 deaths, a percentage of 28·28 and 31·69 respectively. The deaths were chiefly among estate labourers. The number treated at the dispensary last year was 5,625 to 4,920 this year.

*Mulhalkele*.—This hospital was opened for six months of the year only—April to September—which corresponds with the fever season. There were less cases of malarial fever owing to quinine distributors having been employed. The total number of malarial diseases treated in hospital and the three dispensaries was 921, as against 5,151 last year. The number treated in hospital was 317, with a death-rate of 2·20. 4,517 persons were treated at the dispensaries.

*Teldeniya*.—The number treated was 508 with 72 deaths, a percentage of 14·17. 194 estate labourers were treated during the year to 332 the previous year.



*Jails.*

8. The general health of the Kandy prisons was satisfactory, and the usual diseases treated. Dysentery, diarrhoea, and malarial fevers formed the bulk of the admissions into hospital. The character of the cases, however, was not of so severe a type as last year. In April there was a sharp and short outbreak of acute serious diarrhoea, when 15 cases occurred with 4 deaths. The sanitary condition of the prison is excellent, its water pure and above suspicion, and this outbreak can only be attributed to climatic causes, the sharp chilly winds which then prevailed giving rise to this complaint. 992 prisoners were admitted to the sick list to 1,373 in 1906. It is satisfactory to note that chickenpox and mumps is not so prevalent now as in previous years. The number of deaths totalled 28, against 17 for 1906. The increased number of deaths, which was chiefly among prisoners in the penal stage, is accounted for by admission of prisoners from the Districts of Kandy and Matale enfeebled by sickness and distress prevalent during last year in these districts. The daily average sick in hospital was 20·7, the percentage of sick to strength 22·63, and the percentage of deaths to total treated 2·84. Ten cases of enteric were treated, with 1 death.

The prophylactic treatment of malaria by giving each prisoner 10 grains of quinine on two consecutive mornings every week was commenced on October 19, and continued to the end of the year.

*Nuwara Eliya.*—54 cases were treated, 23 more than the previous year. 7 cases of chickenpox, 3 influenza, 10 dysentery, 5 rheumatism, 6 diarrhoea, and 5 conjunctivitis. One jail guard contracted enteric fever and was treated in the civil hospital.

*Vaccination.*

9. During the year there was an addition of 7 estate and 2 civil vaccinators to the number already working in the Province, making a total of 16 estate and 12 civil vaccinators. Among the civil vaccinators, there is one female and one Muhammadan vaccinator. These work among the Muhammadan subjects in the whole Province. In addition to the above vaccinators, medical officers and apothecaries performed vaccination on subjects from villages situated within a radius of three miles of their institutions. The number vaccinated during the year was 12,269 by the civil and 12,256 by the estate vaccinators, and by the medical officers and apothecaries 1,824, making a grand total of 26,549 subjects. Of this number, 22,248 were successful, 2,711 unsuccessful, giving a percentage of successful vaccinations to total inspected of 89·13 and of unsuccessful 10·86. 1,390 were absent. 73 vaccination defaulters were prosecuted; 41 of these were fined, one warned, and of the balance the prosecutions were withdrawn.

## (3) REPORT of F. Spittel, L.R.C.P. &amp; S. (Edin.), Provincial Surgeon, Northern Province.

THE estimated population of the Province for the year was 359,137. The number of births registered was 11,596, giving a birth-rate of 32·28, as against 41·05 for the previous year. The number of deaths registered was 11,822, with a death-rate of 32·91, as against 28·87 during the previous year.

*Prevalence of Sickness.*

*Malarial Fever.*—This disease prevailed, as usual, to a great extent in all the stations, except in a few villages bordering the sea, during the whole of the first quarter and from about the middle of November till the end of the year.

The number of cases of malarial diseases treated in all the institutions of the Province was 53,314, as against 40,831 during the previous year. All types of malarial fever occurred. There were a few cases of the malignant type. The quotidian and tertian types were the commonest. The increase in the number of cases this year was no doubt due to the unprecedentedly heavy rainfall during the latter part of the previous year and early part of this year, causing large accumulations of water in low-lying lands, and consequently more breeding places for the anopheles mosquito. The largest number of cases was reported from the following stations:—Vavuniya, Jaffna, Pesalai, Kankasanturai, and Point Pedro.

During the early part of the year, commencing in January, quinine as a prophylactic was given. The drug was distributed in 187 of the most malarious villages of the Jaffna and Mullaitivu Districts. The population of the villages in which quinine was distributed was 188,097; of these, according to the distributors, 15,801 persons consented to take the drug. After distributing the drug during ten weeks, the distributors reported that out of the 15,801 persons to whom the quinine was administered 2,684 suffered from fever, and 12,488 were free from the disease. If the above figures are correct, there can be no doubt that the result was very satisfactory; but from subsequent inquiries made by me I am not inclined to place much reliance on them.

Dysentery and diarrhoea prevailed to some extent. The total number of cases reported from the different stations was 3,196, as against 3,614 during the previous year. The largest number of cases was reported from Point Pedro, Jaffna, Mullaitivu, and Vavuniya. Most of the cases occurred during or shortly after the north-east monsoon rains, and were of a mild type, and readily yielded to treatment. The disease in most cases was probably due to the continued use of unwholesome food exposure to variations of temperature, and irregular living.

*Respiratory Diseases.*—These diseases occurred chiefly during the wet season. 267 cases of pneumonia were reported from all the stations.

*Rheumatic Affections.*—These ailments prevail to a great extent everywhere in the Province, and are often associated with malarial diseases.

*Diabetes Mellitus.*—Although the hospital returns do not show a large number of cases of diabetes, still it is a disease frequently to be met with in the Province, and it occurs among all classes. With regard to this disease, Dr. Ludovici, in his report, says: "The dread of every man over forty is that he will contract diabetes." It has been said that the disease is especially prevalent among Jews and Hindus, but why this should be so has not been accounted for.

*Skin Diseases.*—Of these diseases, itch, ringworm, and psoriasis are the commonest. Only a small proportion of those suffering from these ailments avail themselves of European treatment.



*Particular Diseases.*

*Smallpox.*—During the year there were four outbreaks of the disease in the villages of Batticotta, Valvedditturai, Tholpuram, and Changanai. In all these places 15 cases occurred, of which 2 died. From Batticotta 2 cases were reported on the same day, March 26, both having been in concealment for some days, and another case was reported on April 27. All these cases were removed to hospital, and all recovered. The source of infection in the case of the two cases first reported could not be traced. The third case was evidently infected from one of the two cases first reported.

At Valvedditturai the disease broke out in August; 9 cases occurred, of which 1 proved fatal. The first and second cases, which took ill on August 5 and 8, were reported on the 20th of that month. Both the cases were in concealment for about fifteen days. The next outbreak took place at Tholpuram, a village situated about 2 miles from Batticotta. The first case was reported on September 26, and the origin of the disease was traced to India. The disease next appeared in the village Changanai. Only 1 case occurred.

All the patients in the above-mentioned places were promptly isolated, the contacts were segregated and kept under supervision. Vaccination and re-vaccination were vigorously carried out in the neighbourhood, with the result that the disease was everywhere kept under control and speedily stamped out.

*Chickenpox.*—Only 33 cases of chickenpox were reported from all the stations. The largest number (11) was reported from Valvedditturai.

*Measles.*—Only 4 cases of measles were reported: 3 from Kayts and 1 from Mandativu.

*Cholera.*—This disease broke out in the village Alvai, situated about 3 miles from Point Pedro. 12 cases occurred, of which 3 proved fatal. The first case occurred on June 3, and the last case on June 30. Although every effort was made, it was found impossible to trace the source of the disease.

*Enteric Fever.*—A few sporadic cases of this disease occurred in the town of Jaffna. It is very probable that some of the cases reported by the Registrar as remittent fever were cases of enteric fever. Only one case of enteric fever was treated in the civil hospital at Jaffna during the year.

*Anchylostomiasis.*—The total number of cases reported of this disease was 215. The practice which prevails in Jaffna of depositing faecal matter on the surface of the ground in compounds of houses and gardens and in the vicinity of wells must necessarily be followed by the dissemination of the disease.

*Parangi.*—This disease was reported from 21 stations. The total number was 995. The disease prevails chiefly in the villages of the Vavuniya and Mullaitivu Districts.

*Venerial Diseases.*—These diseases were reported from almost all the stations. The largest number of cases, chiefly gonorrhoea, were reported from Jaffna.

*Leprosy.*—From the whole Province only 4 cases of leprosy have been reported, 2 by the Medical Officer of Jaffna and 1 each by the Medical Officers of Kankasanturai and Point Pedro.

Six cases of cancer were reported.

*Relative Mortality in the different Seasons.*—In this Province there are practically only two seasons, which may be called the wet and the dry. The former commences with the setting in of the north-east monsoon about the latter part of October, and lasts till about the middle of January. During this period, in addition to heavy rain, there is a heavy fall of dew at nights. Mosquitoes breed in abundance, and malarial fever breaks out and prevails as an epidemic. Chest affections—chiefly bronchitis and pneumonia; dysentery and diarrhoea; and rheumatism also prevail. The dry season may be said to begin about the middle of March, and end about the middle of October. The first quarter of the year is the unhealthiest, and the largest number of deaths takes place in this season. The third quarter is the healthiest.

*General Sanitary Condition of the Province.*

The sanitary condition of the Province generally is unsatisfactory. Jaffna is the only town in which some system of sanitation is carried out, and even here there is a great deal of room for improvement. Very little improvement has been effected since the establishment of the Local Board in July, 1906, owing to the want of funds.

The drainage of the town is most unsatisfactory. Almost all the drains are surface cut drains; there are hardly any paved drains. It is, I consider, essential that the drainage of the town should be improved. A drainage scheme should be formulated and carried out. There are many filthy cesspits in the Pettah, and some of them are situated in dangerous proximity to wells. Besides the jail and hospital, there are not more than about twenty houses in the whole town in which the dry-earth system is carried out. Most of the habitations have neither privies nor dry-earth closets. Excrement is in most places deposited on the surface, in gardens and compounds of houses, and left uncovered or covered with a little earth. Faecal matter is frequently to be seen on public grounds, by the roadside, and drains. Many of the houses are surrounded by high cadjan and live fences, which shut out light and prevent the free movement of the air. There are numerous paddy fields, ponds, pools, borrow pits, &c., scattered throughout the town. In some parts of the towns there is a great deal of overcrowding. Public latrine accommodation is insufficient.

*Water Supply.*

In the Jaffna District water for all purposes is obtained from wells only. In the town of Jaffna there are numerous wells, but the water in most of them is hard, brackish, and totally unfit for drinking or cooking. There are, however, a sufficient number of wells from which water of good quality can be obtained. In the Mannar District the water supply generally is unsatisfactory. Water is obtained from both wells and tanks. The poorer people of the town and most of the villagers during the wet season use the water of tanks, which in most instances is polluted. The inhabitants of the Mullaitivu District use the water of tanks. The inhabitants of the Vavuniya District prefer to use the water of tanks, although there are wells which supply water of fair quality.



*Hospitals.*

There are six hospitals in the Province.

*Civil Hospital, Jaffna.*—This institution, which was known as the Friend-in-Need Society's hospital, and was managed by a committee, and maintained by contributions of the committee members and others, but chiefly by an annual Government grant, was taken over by Government on March 1 last. The building not being of modern type requires many improvements and alterations.

The total number of patients treated in this hospital during the year was 1,414; of these, 1,280 were discharged, 66 died, and 68 remained at the end of the year. The largest number of patients in hospital on any one day was 88, and the percentage of deaths to total treated was 4·66. The prevailing diseases were malarial fevers, rheumatic affections, diarrhoea, dysentery, and ulcers. There were 43 cases of anchylostomiasis, 20 of pneumonia, and 1 of enteric fever.

*Point Pedro Hospital.*—This hospital has accommodation for 36 patients. The number of patients treated during the year was 766, as against 846 in the previous year. 713 were discharged, 22 died, and 31 remained at the end of the year. The daily average sick was 30·23. The average number of days the patients stayed in hospital was 14·40, and the percentage of deaths to total treated was 2·85. The prevailing diseases were malarial fever, dysentery, diarrhoea, and ulcers.

*Mannar Hospital.*—The number of beds in this hospital is 36. The number of patients treated during the year was 447, of which 416 were discharged, 14 died, and 17 remained at the end of the year. The daily average sick was 13·81, and the percentage of deaths to total treated was 3·13. The average number of days the patients stayed in hospital was 11·27. There was no overcrowding at any time. The prevailing diseases were malarial fever, malarial cachexia, dysentery, and rheumatism.

*Vavuniya Hospital.*—The total number of patients treated during the year was 579; of these, 49 died, showing a death-rate of 8·46 per cent., 508 were discharged, and 22 remained under treatment. The daily average sick in hospital was 21·02. There was no overcrowding. The principal diseases were malarial diseases, parangi, dysentery, diarrhoea, respiratory, and skin diseases.

*Mantota Hospital.*—The total number treated was 420, of which 379 were discharged, 33 died, and 8 remained. The rate of mortality was 7·85 per cent., and the daily average sick 18·22. The prevailing diseases were malarial fever and bowel complaints.

*Mullaithivu Hospital.*—This hospital has accommodation for 42 patients. The number of patients treated during the year was 450; of these 388 were discharged, 31 died, and 31 remained. The daily average sick was 29·59, and the percentage of deaths to total treated 6·08. The principal diseases were malarial fevers, rheumatic affections, diseases of the respiratory and digestive systems, and parangi.

*Dispensaries.*

Besides the dispensaries attached to the above-mentioned hospitals, there are 29 dispensaries and 14 visiting stations. The outdoor dispensary at Jaffna, which was situated at the Main street, Pettah, and was worked as a separate one, was amalgamated with the dispensary attached to the Friend-in-Need Society's Hospital, after that institution was taken over by Government. The total number of patients that attended the hospital dispensaries was 30,925. The collections from the above dispensaries amounted to Rs. 1,077·29. The number of patients treated in all the other dispensaries, including the visiting stations, was 62,745. The collections from all these dispensaries, which were chiefly voluntary contributions, amounted to Rs. 1,412·90.

*Jail and Jail Hospital.*

The only jail in the Province is that of Jaffna. It has accommodation for 218 prisoners. Water for drinking and cooking is obtained from the well on the esplanade, for all other purposes water is obtained from wells within the walls of the jail. The total number of prisoners in the jail was 1,115. The average daily strength was 130·34. The health of the prisoners was very satisfactory. The total number of prisoners treated at the hospital was 70, of which 3 proved fatal, showing a death-rate of 4·28. The average daily sick was 2·24. The principal diseases were diarrhoea, dysentery, malarial fever, and general debility.

*The Port of Kayts.*

This port, which was open for goods traffic previously, was on March 1 opened for passenger traffic with India. The clothes and persons of all arrivals from India are disinfected. Passengers who have no marks of vaccination and those who have insufficient marks are vaccinated. All persons from smallpox-infected areas are vaccinated, even if they have satisfactory marks of vaccination, and their names are registered for the information of the medical officer or apothecary of the district to which they are destined.

A steam disinfector is being worked from November 1. During the year 622 vessels have been inspected by the port officer. The number of passengers landed was 2,115. 35 vessels arrived from cholera-infected ports and 2 from smallpox-infected ports. 26 persons were detained at the segregation camp, and there was not a single case of any infectious disease among the crews or passengers.

*Vaccination.*

Vaccination was carried out once a week by the medical officers and apothecaries in charge of hospitals and dispensaries. The number of persons vaccinated by these officers and apothecaries was 8,934; of these, 7,868 were successful, 739 unsuccessful, and 327 unknown, with a percentage of 91·41 successful to total inspected, 8·58 unsuccessful, and 3·66 unknown. The total number of persons vaccinated by the vaccinators only was 6,234, of which 5,567 were successful, 405 failed, and 262 unknown. The percentage of successful to total inspected was 93·21. The number of persons re-vaccinated during the year was 2,668, of these 1,013 were inspected, and the percentage of successful to those inspected was 87·66. The number of prosecutions during the year under the Vaccination Ordinance was 201, which resulted in 160 convictions.



## (4) REPORT of J. H. Ebell, L.R.C.P. &amp; S. (Edin.), Provincial Surgeon, Southern Province.

I RESUMED charge of the Province in May, having during the earlier months of the year been acting for the Assistant Principal Civil Medical Officer in Colombo. Dr. Keegel acted as Provincial Surgeon of this Province during my absence.

2. *Vital Statistics.*—

		Estimated Population.		Births.		Deaths.		Birth-rate per Mille.		Death-rate per Mille.
Galle	..	267,921	..	10,529	..	8,785	..	39.02	..	32.07
Matara	..	216,249	..	8,362	..	7,473	..	38.66	..	34.57
Hambantota	..	107,184	..	4,166	..	6,997	..	37.86	..	63.06
Total	..	591,354		23,057		23,255		38.99		39.32

3. The population has increased in 1907 by 21,614, the births less by 874, and deaths increased by 2,328. The decrease in the birth-rate and increase in the death-rate is chiefly noticeable in the Hambantota District, the death-rate in this ill-favoured part of the Province being nearly double that at Galle or Matara.

4. This falling off in the birth-rate and increased number of deaths was no doubt due to unsatisfactory state of the public health throughout the previous year (1906), and which in the Hambantota District continued unfavourable for some months of the year, and the Medical Officer reports that both 1906 and 1907 have been "years of drought and failure of crops, and 1906 one of a notorious increase of fever."

5. The worst period appears to have been the first quarter, when the death-rate for the Province was as high as 56, more than double the normal rate, the highest mortality being specially noticeable in the Hambantota District, where the death-rate was 128.6, or four times the normal rate. I am glad, however, to state that the death-rate at Hambantota had dropped to 58.5 in the second quarter and 32.4 in the third quarter.

*Public Health.*

6. Public health, which was so unsatisfactory during the previous year, continued to be bad during the earlier months of the year under review. The diseases chiefly prevalent being malarial fever and dysentery. There was steady improvement as the year progressed, and during the greater part of 1907 the health over the whole Province was satisfactory, and compared favourably with that of 1906.

*Principal Diseases.*

7. As usual, malarial fever easily takes first place, and prevailed chiefly during the first quarter. Out of a total of 165,741 patients treated in hospitals and dispensaries, no less than 62,109, or more than one-third, were for malarial affections. Of the total, Hambantota District was responsible for 26,386, Matara coming next with 20,883, and Galle 14,840, i.e., Hambantota with considerably less than half the population of Galle contributed nearly double the number of cases.

8. Prophylactic measures were taken against malaria, and there was free distribution of quinine in the most malarial districts as well as to school children. 33,168 persons were treated, and 77 lb. quinine issued.

9. *Parangi* prevails to a great extent in certain parts of the Province, but I am of opinion that the disease is becoming less prevalent and the type not so severe. The large number of dispensaries opened in recent years and the opportunities afforded the sufferers of being treated in the earlier stages of the disease have no doubt much to do in bringing this about. 7,654 persons were treated during the year, Matara District contributing more than half the patients.

10. *Dysentery* prevailed throughout the year, and there were sharp outbreaks reported at various periods of the year.

11. *Anchylostomiasis*.—There were 359 cases treated during the year; of these, 196 were at Deniyaya, 106 at Galle, and 33 at Balapitiya. These are the three hospitals to which estates are scheduled, and estate labourers contributed the largest number. Both the Medical Officers of Deniyaya and Balapitiya report that the disease is spreading amongst villagers in the neighbourhood of estates.

12. *Enteric Fever*.—Cases occurred at Galle and Matara and Balapitiya, but not in large numbers. There was a sharp outbreak during the first half of the year at Dodanduwa and Hikkaduwa. These towns are on the sea coast, and are thickly populated. Their sanitary condition was very unsatisfactory, water supply being from surface wells, and with no proper conservancy of night soil and absolutely no drainage. There was surface pollution of all compounds and indiscriminate burials. Measures were taken for the early notification of all cases of fever. Every case notified was inspected and precautions taken to prevent spread, and during the third quarter the towns were free of enteric.

*Infectious Diseases.*

13. *Cholera*.—Four convalescent patients were landed from a ship which put into harbour early in the year. Two cases occurred in a very crowded part of Galle town and close to the railway station in June. The first was that of a railway porter who returned two days previously from South India; the second was a contact, the wife. Both cases were of a virulent type, and proved fatal. The wife developing the disease within twelve hours of the death of her husband, and whilst under observation in the segregation camp. No further cases occurred.

14. *Smallpox*.—There were 13 cases in the Province. Twelve occurred in the Matara District, and 1 landed from a ship at Galle. Of the 12 in Matara District, 1 remained over from the previous year, and 4 other cases infected by this patient occurred at Mirissa and neighbourhood; the infection was then carried to Urumutta in Gangaboda pattu, where 6 cases occurred. The last case was discharged on February 23. One case was reported from Dondra in May last. Since then the Province has been free.



15. *Chickenpox* prevailed throughout the year, but did not assume epidemic proportions. 250 cases were reported.

16. *Measles*.—This disease was not prevalent.

17. *Acute Diarrhoea*.—Five cases occurred at Dikwella and 1 at Bundala in Hambantota.

#### *Relative Mortality.*

18. *First Quarter*.—This quarter shows the highest death-rate, viz., 56. Galle District was the healthiest and Matara next, the death-rate being 35·4 and 44·6 respectively.

*Second Quarter*.—There was marked improvement in the public health, the death-rate for the Province falling to 35·7, the average for Galle being 28·8, Matara 33, and Hambantota showing satisfactory recovery—the rate dropping to 58·5 from 128·6.

*Third Quarter*.—This was the healthiest quarter, the general death-rate falling to 28·5 for the Province.

*Fourth Quarter*.—The figures for this quarter are not available, but judging from the statistics available for the chief towns the public health began again to show signs of deterioration, the rate for Galle rising to 36 and Hambantota 44.

#### *Meteorological Conditions and Effects on Public Health.*

19. The heaviest rains in the Province set in with the north-east monsoon, specially marked in the Hambantota District. It is noticeable that the public health begins to deteriorate with the commencement of the fourth quarter, and continues bad during the first quarter, making a recovery in the second and third quarters.

#### *Sanitary Condition of Chief Towns.*

20. *Galle*.—This town has been under the control of a Municipality since 1867. Much has been done to improve the sanitary condition of this town, but when it is understood that there are no less than 44 villages and hamlets included in the Municipality, and the area covers 6½ square miles, it will be conceded that it is a big undertaking to remedy all its sanitary defects. Regarding the improved water supply, a scheme has, I think, been finally adopted, and early measures will be taken to start the work. The dry-earth system, which at first was restricted to the Fort Ward, has been extended to the crowded parts outside, with noticeable improvement in public health. With the exception of the Fort Ward, there is no regular system of drainage. Insanitary areas, such as mosquito breeding areas, marsh lands, fields, canals, &c., abound within Municipal limits.

21. *Matara*.—The sanitary condition of this town cannot be considered satisfactory. The Medical Officer reports that the drainage is unsatisfactory and water supply bad. Both these defects have engaged the attention of the Board of Health, but nothing has been done to remedy same.

22. *Tangalla*.—The Medical Officer's report on the sanitary condition of this town is most unfavourable. There is no drainage; its water supply defective, and conservancy arrangements very unsatisfactory. Roads and gardens not scavenged. Markets kept dirty. The matter was brought to the notice of Government during the year, and a Board of Health has been established.

23. *Hambantota*.—There has been a marked improvement in the sanitary condition of this town since it was brought under the control of a Board of Health. The drinking wells are better protected and each fitted with a pump; scavenging is done in a more methodical manner. Public latrines have been provided. Bakeries supervised.

24. *Ambalangoda*.—I have noticed great improvement in the general sanitary condition of this town and in public health since it was brought under the control of a Board of Health. The drainage has been taken in hand. Regular scavenging done. Public latrines supplied. A public market constructed, and other defects are being gradually remedied. An improved water supply, the closing of wells liable to pollution, the opening of a public cemetery, which will prevent indiscriminate burials in gardens, &c., are the most urgent wants.

#### *Hospitals.*

25. There are nine hospitals in the Province, including the branch female hospital, infectious diseases hospital, and plague hospital. The total number treated in these hospitals was 6,103.

26. *Civil Hospital, Galle*.—2,275 treated in 1907, as against 2,038 in 1906; of these, 171 were estate labourers. There were 239 deaths. Death-rate 10·50 per cent.; Malabar death-rate being 25·5 and mixed races 9·06 per cent. The principal diseases were dysentery and diarrhoea, malarial fever, and *dochmius duodenalis*. There were 8 cases of beri-beri treated—all lascars firemen landed from the ss. *Clan Campbell*. 105 operations were performed under anaesthetics.

27. *Matara*.—1,600 cases treated, as against 1,369 in 1906. The death-rate was markedly low, viz., 3·48 per cent. The principal diseases were parangi, bowel complaints, malarial fever, and injuries.

28. *Tangalla*.—397 patients, of whom 34 died, death-rate being 8·56 per cent. The majority of patients admitted were for injuries, parangi, and malarial fever.

29. *Hambantota*.—416 cases treated, with 35 deaths. Death-rate 8·46. The bulk of admissions were for malaria.

30. *Balapitiya*.—369 patients treated, with a death-rate of 13·00.

31. *Deniyaya*.—712 patients treated with 122 deaths, giving a death-rate of 17·13. *Dochmius duodenalis* was responsible for 196 admissions and 40 deaths. Dysentery and diarrhoea 100 admissions and 49 deaths.



*Special Hospitals.*

32. *Kaluwella Branch Hospital* for women of the unfortunate class had 155 admissions, as compared with 117 for 1906.

33. *Infectious Diseases Hospital*.—Fifteen patients were treated, as compared with 30 in 1906. The cases were smallpox, cholera, chickenpox, measles, and mumps.

34. *Plague Hospital and Observation Camp*.—No cases admitted during the year.

35. *House of Observation for Suspects*.—32 persons admitted during the year and 6 remained over from 1906. Of these, 19 were adjudged insane and sent to the asylum, 16 discharged, and 3 remained at the end of the year under observation.

36. *Jail Hospitals*.—227 patients were treated in the three jail hospitals in the Province. Galle jail contributed 152, with 11 deaths. Diarrhoea was responsible for 51 admissions, malarial fever 17, and dysentery 12. The majority of fatal cases occurred amongst ill-nourished prisoners from the Hambantota District.

*Matara Jail*.—45 cases treated, with 3 deaths.

*Tangalla Jail*.—30 cases treated, with no deaths.

*Dispensaries.*

37. There are 41 dispensaries in the Province. Of these, 5 are attached to hospitals, 20 central, 18 branch dispensaries, and 4 itinerating stations. The dispensaries are doing splendid work, and are much appreciated. No less than 159,600 persons sought relief, paying 272,442 visits.

*The Port of Galle.*

38. During the year 331 vessels entered the port; of these, 61 were native craft. Of the total, 88 were from infected ports, and were dealt with in accordance with quarantine regulations.

39. No cases of plague were reported. Four cases of cholera (convalescents), one of smallpox, and one chickenpox landed and sent to the Infectious Diseases Hospital.

40. 94 bills of health were issued, and the fees (Rs. 987) credited to Government. 150 cradles linen were disinfected, and the amount realized (Rs. 187.50) was placed to credit. 5,579 coolies were disinfected, and 131 lighters fumigated for the destruction of rats.

*Vaccination.*

41. During the year 29,820 subjects were vaccinated; of these, 28,674 were primary and 1,146 re-vaccinations. Of primary vaccinations, the percentage of successful to total inspected was 80.8, of those re-vaccinated 624 were successful. The staff consists of an inspector and 17 vaccinators. Vaccination has been further carried on by all medical officers and apothecaries in charge of dispensaries once a week. Of the total vaccinations, these latter contributed 5,897. Four extra vaccinators have been permanently appointed to this Province during the year.

## (5) REPORT of F. Oorloff, M.B., C.M. (Aberd.), Provincial Surgeon, Eastern Province.

*Population, Birth- and Death-rates.*

THE estimated population of the Province on December 31, 1907, was 185,634. This gives an increase of 971 over the population estimated for the previous year. The increase is distributed as follows:—609 in the Batticaloa District and 362 in the Trincomalee District; 7,238 births and 6,667 deaths were registered. In the Batticaloa District there were 6,120 births and 5,511 deaths. In the Trincomalee District there were 1,118 births and 1,156 deaths. The births exceeded the deaths by 571 in the Province, and by 609 in the Batticaloa District. In the Trincomalee District the deaths exceeded the births by 38. The birth-rate was 38.9 per thousand as against 40.7, and the death-rate 35.9 as against 32.4 in the previous year.

*Public Health.*

The general health of the Province was on the whole good. As in the previous year the diseases most prevalent were malaria, parangi, dysentery, leprosy, rheumatic affections, and conjunctivitis.

*Malarial Fever*.—This disease was most prevalent during the north-east monsoon. In no place did it assume an epidemic character.

*Dysentery*.—This disease was most prevalent during the north-east monsoon. The direct mortality from it was not very high, and it did not assume an epidemic form.

*Parangi*.—This scourge is widely diffused throughout the greater part of this Province. It prevails with equal severity all throughout the year. Its prevalence is no doubt due to the want of wholesome food and water and segregation.

*Leprosy*.—This disease prevails in this Province. It is pretty generally diffused in Kalmunai and there are several cases in Batticaloa.

*Rheumatic Affections and Conjunctivitis*.—These diseases prevailed to some extent during the third quarter when the south-west monsoon was in full force.

*Relative Mortality in the different Seasons.*

The principal diseases that contributed to the death-rate were malarial fevers and dysentery. These diseases were most prevalent during the north-east monsoon.



*Meteorological Conditions and their Relationship to Diseases.*

The rainfall was heaviest during the months of October, November, December, and January. There were 52.52 inches of rain at Batticaloa, 72.66 inches at Trincomalee, and 42.87 inches at Kalmunai. From April to September there was very little rain. During the wet months, malaria and dysentery were at their height, and during the dry and hot season conjunctivitis and rheumatic affections prevailed to some extent.

*Particular Diseases.*

*Cholera.*—There were 31 cases of this disease in the Kalmunai district during January and the early part of February. The source of infection was the Province of Uva. 21 cases proved fatal.

*Smallpox.*—There were 15 cases of this disease in the town of Trincomalee during January and the early part of February. It was imported from India, and the first case occurred early in November of the previous year. Four cases proved fatal.

*General Sanitary Condition of the Province.*

*Batticaloa.*—Sanitary condition is bad.

*Trincomalee.*—The general sanitary condition of this town is unsatisfactory. Public latrine accommodation is deficient. The drainage is defective. A good water supply is badly needed.

*Kalmunai.*—The drainage is defective. The water supply unsatisfactory. There is no public latrine accommodation. There is no overcrowding.

*Vaccination.*

Nine vaccinators were employed during the year. In addition to this, the medical officers and apothecaries carried on vaccination at the outdoor dispensaries once a week. The work of the vaccinators was regularly inspected by the Inspector of Vaccination, and the vaccination at the Outdoor Dispensary, Batticaloa, was regularly inspected by the Provincial Surgeon. There were 248 prosecutions, with 201 convictions.

## (6) REPORT of O. Johnson, L.R.C.P. (Edin.), Provincial Surgeon, North-Western Province.

THE North-Western and Sabaragamuwa Provinces were separated for better administration in September, 1906, but owing to the exigencies of the service the officer appointed to Sabaragamuwa was not able to take up his appointment till June last, and both Provinces were consequently in my charge for nearly half the year. This report has reference, however, to the North-Western Province only, as Sabaragamuwa will be dealt with by Dr. de Hoedt.

*Population and Vital Statistics.*

The roughly estimated population at the end of the year was 374,288, being an advance of 831 on the previous year. There were 12,844 births and 12,013 deaths, and the birth- and death-rates were 33.44 and 32.68 per mille respectively. The past year was in comparison with its predecessor, a very healthy one, and shows an improvement in the death-rate not only of the Province taken as a whole, but also separately in its three districts. For the whole Province the death-rate in the first quarter was 45.4, showing the after effects of the terrible year the Province had been through; in the second quarter it fell to 34.4 and in the third to 27.5. The birth-rate, though slightly less than 1906 and considerably lower than the mean, has a hopeful feature, in that there was a distinct rise in the third quarter in the whole Province. This, to my mind, is the best proof of the steady improvement in the health of the population after the trials of 1906. The principal causes of death, as published by the Registrar-General, were simple and ill-defined fevers, enteric fever, diarrhoea, dysentery, remittent malarial fever, malarial cachexia, *duodenitis*, rheumatism, *phthisis pulmonalis*, *anæmia*, *parangi*, infantile convulsions, pneumonia, "other and undefined diseases of the integumentary system," and general dropsy.

*Prevalence of Sickness.*

*Malarial Fevers* take a first place in the prevailing diseases of this Province, but the year under review afforded an agreeable contrast to its predecessor in the incidence of the disease. The disease is really endemic, but it usually assumes an epidemic form, there being two distinct seasons corresponding to the periods immediately following the north-east and south-west monsoons. In 1907 there was practically no south-west epidemic. The total of malarial cases for all the stations for the two years 1906 and 1907 were 150,131 and 114,637, showing a decrease of 35,494 in 1907. This improvement, in the opinion of the majority of the officers of the Province, was mainly due to the free distribution of quinine, both as a prophylactic and as a curative measure, but improved meteorological conditions favoured it.

*Parangi* ranks next to malaria in importance. The disease prevails very largely throughout the Province.

*Rheumatic Affections*, usually associated with *parangi*, accounted for a fairly large attendance at the dispensaries.

*Dysentery* in this Province is usually an accompaniment of an epidemic of malarial fever, and its incidence is governed by the degree of severity of the latter. In the first quarter, especially in January, several cases occurred in the various districts, but the disease was never reported in an epidemic form, and no special measures had to be adopted to deal with it.

*Respiratory Diseases*, especially pneumonia, were of pretty frequent occurrence during the latter months of the year, and several deaths occurred from this cause in some of the hospitals.

*Anchylostomiasis* has a most important bearing on the health of the population. It is extending to the indigenous races through the agency of polluted soil and water. 160 cases were treated in all the hospitals and dispensaries of the Province. I am certain many of the cases treated in the other institutions as malarial cachexia, *anæmia*, diarrhoea, and general dropsy were true cases of *anchylostomiasis*.



*Phthisis Pulmonalis*.—That this disease prevails to a pretty large extent I have no doubt, but I have no correct figures to go upon. 78 cases were treated in the hospitals of the Province, but as those who sought relief for the disease at the dispensaries have been included under respiratory affections, and the monthly consumption returns from those institutions generally showed no cases treated, it is impossible to form a correct idea.

#### *Relative Mortality in the different Seasons.*

*First Quarter*.—The total death-rate rose from 37·9 in the last quarter of 1906, to 45·4, showing a deterioration. It was higher than the corresponding quarter of the previous year and the mean rate.

*Second Quarter*.—The total death-rate was rather worse as compared with the average, but a great improvement on the first quarter and the corresponding quarter of the previous year. It fell from 45·4 to 34·4.

*Third Quarter*.—There was a general improvement in the public health, not only compared with the previous quarter and corresponding quarter of the previous year, but also with the average. The total death-rate fell to 27·5 from the average of 33·4, and from 65·1 in the corresponding quarters of previous year, and 34·4 in the second quarter.

*Fourth Quarter*.—The figures for this quarter are not yet available, but I feel certain that when they are published they would compare favourably with the average and the corresponding quarter.

#### *Meteorological Conditions and their Effects on Public Health.*

I have taken into consideration the rainfall only, because the incidence of disease in the Province is affected more by this meteorological condition than by any other; and, in fact, the health of the whole Island depends upon its rainfall and its distribution. When the monsoon rains are satisfactory in regard to time and duration, and normal conditions in regard to the seasons prevail, the public health generally is good; but when the reverse is the case, the monsoons are delayed and are preceded by long periods of drought, when the wells dry up and water becomes scarce, sickness and distress are the result. The only general period of drought during the year under review was limited to the first two months, when the highest rainfall recorded was 4·16 at Nikaweratiya, in February. In March, with the exception of Puttalam and Nikaweratiya, there was a satisfactory fall. During the first quarter the public health was comparatively bad. The conditions were favourable for the breeding of anopheles, and malarial fevers prevail to a pretty large extent. The north-east monsoon is the season of chills, and usually pneumonia and bronchial affections follow in its wake. This year was no exception to the rule, and many cases of pneumonia were reported from different parts of the Province, especially from Puttalam.

#### *Particular Diseases.*

With the exception of a small outbreak of smallpox on the Udupala estate near Polgahawala in February and an outbreak of enteric in the town of Kurunegala, the Province enjoyed a remarkable immunity from epidemic disease during the year.

*Enteric Fever*.—I have no doubt this disease is more general than is believed, considering the impure water supply of the towns of this Province and the defective sanitation. I can deal only with the cases which were brought to my notice. Thirteen cases were treated in two hospitals, Kurunegala and Marawila, of whom one remained over from the previous year, and 30 cases were notified in private houses in the town of Kurunegala.

*Leprosy*.—Only one case was reported.

#### *Sanitary Condition of the Chief Towns.*

The general sanitary condition of the Province is not satisfactory. The water supply everywhere is defective.

*Kurunegala*.—Sanitation is attended to by the Local Board, who, with the funds at their disposal, are gradually improving the drainage and effecting other necessary reforms. The town suffers from the disability of being surrounded by paddy fields, which are a contributory factor to the production of malaria. Unless these are acquired and filled up no scheme of sanitary improvement would be complete. One such field was acquired about four years ago and has been converted into an attractive park. Many of the drains of the town are unbuilt, have defective levels, and some terminate abruptly and have no outlets. The flushing of the drains is imperfectly carried out owing to the scarcity of water, and in the dry weather they emit very offensive odours. There are public latrines conducted on the dry-earth system, but owing to the large number of open spaces surrounding the town, soil pollution very often in the neighbourhood of the latrines takes place daily and is a source of constant danger. Private latrines are partly dry-earth and partly cesspit, the latter often being in the neighbourhood of wells which are constantly exposed to pollution. The great want of the town is a pure water supply.

*Puttalam*.—This town is surrounded by immense tracts of low-lying lands, which become waterlogged in the wet weather. The drainage is defective, but some improvements have been effected during the year, 3,877 feet of cement concrete drains having been built. The water supply is defective. The source is not well protected, and is constantly liable to pollution. The Moorish quarters are crowded and insanitary.

*Chilaw*.—This town, being in some places very little, if at all, above sea level, is liable to frequent inundations by overflowing of the Battulu-oya and the Deduru-oya, and is consequently very malarious. The drainage of the town has been recently improved by the Local Board, and levels have been taken to divert the drains from the back of the town, but the difficulty is the low elevation, some parts being lower than the lagoon. The water supply is from one public well situated in a narrow strip of land between the canal and the sea; its quality is said to be fair.

*Kalpitiya*.—The district is flat and sandy. The town has only one road. Drainage bad. Water is obtained from wells, and is of indifferent quality.



*Madampe.*—The water supply is bad. The general source is from village tanks, but there are a few wells. The country is flat and becomes frequently flooded for want of proper flood outlets. The drainage of the town is unsatisfactory. The sanitation of the place is in charge of an inspector with four or five coolies under him.

*Marawila.*—There are no public latrines, and soil pollution is common. Drainage and sanitation unsatisfactory. Water is obtained from wells, and is fairly satisfactory.

*Dandegamuwa.*—No drainage. Side drains of public roads badly kept. The wells as a rule have no protecting walls, and contain decayed vegetable matter.

*Nikaweratiya.*—The water supply from wells and tanks. The former is fair; the latter unsatisfactory. The huts are built close together and surrounded by jungle, and sanitation is consequently unsatisfactory.

#### *Hospitals and Dispensaries.*

There were 6 hospitals in the Province, 12 central or resident dispensaries, 10 branch dispensaries, and 15 visiting stations at the end of the year. 6,333 cases were admitted for hospital treatment, as against 7,646 in 1906; and 226,382 persons were treated at the dispensaries, as against 273,108 in the previous year. The total visits paid in 1907 were 273,108. The collections of the dispensaries amounted to Rs. 3,776.14. Two new visiting stations were established towards the end of the year, one at Kirimetiya, about 7 miles from Marawila, and the other at Mahananneriya, about 8 miles from Galgamuwa. The hospitals are Kurunegala, Puttalam, Chilaw, Marawila, and the Field Hospitals at Dandagamuwa and Nikaweratiya.

*Kurunegala.*—The admissions into hospital fell from 3,814 in 1906 to 3,120. The percentage of deaths to total treated was 12.13, as against 12.47. The chief causes of death were dysentery, malarial fever, malarial cachexia, phthisis, debility, pneumonia, diarrhoea, parangi, and anchylostomiasis. There was overcrowding in the lower diarrhoea and parangi wards of the hospital. The female parangi ward is totally inadequate, and is always overcrowded. The latrines were fitted with Doulton squatting plates during the year. The wants of the hospital are improved drainage, another female parangi ward, a new latrine for male No. 10 ward, a covered way between kitchen and nursing quarters, improved kitchen and storeroom accommodation, a milk and bread room, a waiting and admission room for patients.

*Puttalam.*—This hospital has been described by His Excellency as the worst he had seen, but though defective in many respects, it is a very much better building than the Chilaw hospital. The admissions into hospital rose from 736 to 802. The mortality fell to 9.78 from 12.02. The chief causes of deaths were dysentery, malarial cachexia, pneumonia, diarrhoea, and injuries. The accommodation for females is insufficient, and extension of the female ward is an urgent necessity.

*Chilaw.*—This is certainly the worst hospital in the Province, and the worst I have seen. It is bad in every way—site, wards, administration block, kitchen, store, and latrines. The admissions rose to 536 from 518, and the mortality was 13.9 to total treated.

*Marawila.*—This hospital presented by the De Soysa family is a satisfactory building. The admissions were 975. The daily average was 38.64, and the percentage of deaths to total treated 8.53. A vote has been sanctioned for certain improvements to the Medical Officer's quarters this year. Doulton plates to the latrines, a pump to the well from which drinking water is obtained, and a separate latrine to the isolation ward are about the only urgent wants of this hospital. An operating room is desirable, and may be made by adaptation of the present dispensary, a new dispensary being constructed by extension of the office room.

*Dandagamuwa.*—A great improvement was effected during the year by cementing the floors of the wards and extending the drains. New and permanent kitchen and storerooms and a wire fence are the most urgent wants. The admissions were 510. The death-rate was 6.40 per cent. Parangi was the chief disease treated.

*Nikaweratiya.*—This hospital is in very good condition. A wire fence to the grounds has been sanctioned this year, and no addition or improvement of any urgency is required. The admissions were 613. The death-rate was 7.24 per cent. Parangi was the chief disease.

In addition to the above, there was the camp hospital at Talavillu during the St. Anna's festival in July, where 12 were treated and 1 died from dysentery.

#### *Jails.*

The only jail in the Province is at Chilaw. It is a small jail situated on a strip of land between the lagoon and the sea. It has 24 cells for males and 2 wards for 6 females. The health of the prison was very good during the year. Ten were treated, and there were no deaths. There are no drains, and the water soaks into the sandy soil. The prisoners were engaged in husk-beating and reclamation works in the lagoon.

#### *Port Duties.*

The only port in the Province is at Kalpitiya in charge of Dr. Evarts, who reports that 242 vessels were inspected by him during the year. The arrivals were chiefly from Jaffna, Mannar, Negombo, and Pukulam, and a few from Colombo, Kankasanturai, and Kayts. No sickness was introduced into the district through this port.

#### *Vaccination.*

Vaccination was satisfactory, and the figures for the year compare very favourably with its predecessor. 11,437 were vaccinated in 1906 and 13,286 in 1907, which was a great improvement on the five-year average of 11,677. Of the total vaccinated, 11,279 were successful, 1,243 failures, and 764 were not inspected. The large number of failures were mainly due to imperfect vaccination by the apothecaries at the dispensaries, and in some measure to inert lymph received on several occasions. 366 prosecutions were instituted: 192 were convicted, 23 acquitted, and at the end of the year 151 cases were pending.



## (7) REPORT of C. B. Lourensz, L.R.C.P. (Lond.), Provincial Surgeon, North-Central Province.

THIS Province has hitherto been under the supervision of the Provincial Surgeon of the Central Province. During the year a separate officer was appointed in charge of it, with residence at Anuradhapura. I assumed charge on June 6. The estimated population is as follows:—

North-Central Province.			Anuradhapura Town.		
Population	{ 1906 ..	78,445	Population	{ 1906 ..	3,672
	{ 1907 ..	79,110		{ 1907 ..	3,672*
Births registered	{ 1906 ..	2,317	Births registered	{ 1906 ..	101
	{ 1907 ..	3,118		{ 1907 ..	85
Deaths registered	{ 1906 ..	2,546	Deaths registered	{ 1906 ..	319
	{ 1907 ..	3,725		{ 1907 ..	285
Birth-rate per mille	{ 1906 ..	37.00	Birth-rate per mille	{ 1906 ..	22.4
	{ 1907 ..	39.41		{ 1907 ..	20.42
Death-rate per mille	{ 1906 ..	32.04	Average birth-rate, 1898-1905	..	26.2
	{ 1907 ..	47.00	Death-rate per mille	{ 1906 ..	86.8
				{ 1907 ..	77.6
			Average death-rate, 1898-1905	..	61.8

\* As per last Census, 1901.

*Prevalence of Sickness.*

The general health of the Province was satisfactory. Malarial fever prevailed more or less throughout the year, the usual recrudescence occurring during the north-east monsoon, and in May and June after the April showers. It was, however, less rife this year. The tertian and quotidian forms are common, the former often occurring as a double infection. The malignant and quartan forms are seldom seen. 483 cases of malarial diseases were treated in hospitals and 32,796 in dispensaries, as against 782 and 30,377 respectively in 1906.

Of respiratory diseases, pneumonia caused a large number of deaths in hospitals. 83 cases were treated, with 36 deaths.

Diarrhoea and dysentery, which show a predilection for the dry months, did not this year appear in an epidemic form. The number of cases treated in hospitals and dispensaries show a reduction.

*Relative Mortality.*

The Registrar-General reports that the North-Central Province was, as usual, the unhealthiest in the Island, with a death-rate of 68.7 in the first quarter and 50.3 in the second quarter, a rise of 13.7 and 13.0 upon the respective averages. However, the rate was a great improvement on the previous quarter rates. The mortality among the Sinhalese infants of the Province was 393 and 287 per 1,000 registered births for the first and second quarters. The smallest number of deaths for the Province was recorded in the fourth quarter, and for the town in the third quarter.

*Meteorological Conditions and their Effects on Public Health.*

The rainfall for the year was 5.98 inches less than in 1906 (59.20 in.). The highest fall was recorded in the fourth quarter, the second quarter coming next—April showing the highest figures (11.95). The third quarter was practically a dry season. The effect of rain was clearly noticeable on the malarial curve, and the great variations in temperature during the first and fourth quarters were responsible for the high mortality from pneumonia.

*Particular Diseases.*

There were no cases of smallpox or cholera in the Province. One case of chickenpox and 23 of measles were treated in the Anuradhapura Infectious Diseases Hospital. Measles occurred in the form of small outbreaks in villages. 165 cases of this affection were reported from five stations.

*Leprosy.*—The Province has been free from this disease for years.

*Enteric Fever.*—Two cases were treated in the Anuradhapura hospital, with one death.

*Parangi.*—In the North-Central Province the affection is found in every part of it, but it is most prevalent in the Madawachchiya, Yakalla, and Tamuttegama districts. I have indicated the importance of taking steps, more active than at present, towards diminishing the spread of parangi. With this object in view primarily, it would be necessary to increase the number of parangi hospitals. The accommodation at present afforded to parangi patients is inadequate. Parangi wards of hospitals are invariably full. Measures may be taken to instruct the people on the mode of infection and the dangers incurred by the rising generation. Lastly, it may be found necessary to enforce the arm of the law.

*Sanitation.*

The sanitary condition of Anuradhapura, the only town in the Province, is receiving the best attention of the local Sanitary Board. The town abounds in smaller excavations of no historic or ornamental value, which provides breeding places for mosquitoes. The Board have under consideration the removal of these danger spots as funds permit, and have adopted measures to render them innocuous. The town is in a good sanitary condition as regards drainage, water supply, conservancy, &c.

*Hospitals.*

*Anuradhapura.*—1,509 cases were treated during the year, with 119 deaths. The death-rate was 7.88 per cent., .28 per cent. less than that of the preceding year. The chief diseases treated were malarial fevers, parangi, bowel affections, and respiratory diseases. The diminutive office was during the year converted into an operating room, and fulfils its purpose well. An administration block is much needed.

The immigrant hospital at Mihintale was closed in September.



*Anuradhapura Jail.*

The general health of the jail was satisfactory. A small outbreak of simple conjunctivitis occurred in March attacking 19 prisoners. 69 cases were admitted into the sick list during the year, a rise of 46 upon the number treated for 1906. One death from dysentery was recorded. 467 prisoners and 60 unconvicted persons were confined in the jail, as against 431 prisoners and 127 unconvicted in 1906. The daily average in jail was 46.38.

*Vaccination.*

Vaccination was satisfactorily carried out during the year. 4,806 subjects were operated on, as against 4,117 in the preceding year. Of the total number vaccinated, 4,244 were successful, 374 unsuccessful. The results were not known in 188 cases. 13 defaulters were prosecuted, of which 11 were fined.

## (8) REPORT of Dr. G. van Rooyen, Provincial Surgeon, Province of Uva.

*Population, Birth- and Death-rates.*

THE estimated population of the Province for the year is 190,584. This shows a decrease in the population, that at the end of 1906 being 190,817. The registered number of births is 7,218 and that of deaths 7,451, showing an excess of the latter by 233. The birth-rate is 37.87 per thousand as against 40.96, and the death-rate 39.04 as against 46.06 in the previous year. The infant mortality was a little over a fifth of total deaths. For 1,000 births 189 infants under one year died. The main causes of death were debility, diarrhoea, and pneumonia.

*Prevalence of Sickness.*

*Malarial Fever.*—There were treated altogether 19,146 cases. The disease prevailed mostly in the following places in the order of frequency:—Alutnuwara, Badulla, Haldummulla, Passara, Bibile, and Koslanda.

*Parangi.*—The total number of cases treated was 1,627. The most parangi-stricken places were Alutnuwara, Medagama, and Bibile. Of these, the first-mentioned alone contributed a third of the total number of cases.

*Leprosy.*—There were altogether 6 cases reported; of these, 4 are in the contagious stage and the other 2 non-contagious. Of the former, 1 died, 1 was admitted to Hendala, 1 is awaiting admission, and the whereabouts of the other is not known. One leper in the non-contagious stage has been granted a permit for home isolation and to report himself every six months.

*Anchylostomiasis.*—There were 387 cases treated in the Province. The majority of these came from estates; the villagers contributed only a small percentage of the cases.

*Diarrhoea and Dysentery* prevailed chiefly during the wet season, the factors being the sudden changes of temperature, unwholesome food, and impure water.

*Relative Mortality in different Seasons.*

The death-rate was highest in the months of the first and second quarters. The majority of deaths were due to intestinal complaints and malarial cachexia.

*Particular Diseases.*

*Smallpox.*—There were no cases of this disease.

*Chickenpox.*—The total number of cases for the year was 245.

*Cholera.*—Fifteen cases occurred in the following districts:—Badulla (Weywelheena), Bibile, Madulsima, Namunukula. There were 10 deaths.

*Acute Diarrhoea.*—There were 6 cases reported and no deaths. Five of these came from Welimada and 1 from Alutnuwara.

*Enteric Fever.*—There were 7 cases: 5 at Badulla, 1 at Passara, and 1 at Welimada. Some of the Badulla cases occurred on Sarnia estate.

*Sanitation and Prevention.*

*Badulla.*—The water supply of the town was insufficient, and great inconvenience is caused. A separate water supply to the hospital is under construction. The drainage is not yet in a satisfactory condition. There are 5 public latrines, but the addition of a few more will be useful. The scavenging was satisfactory.

*Bandarawela.*—This town is under the operation of the Local Board Ordinance. Water supply and scavenging satisfactory.

*Haputale.*—Water supply, drainage, and scavenging satisfactory.

*Haldummulla.*—Water supply good; drainage deficient; public latrine accommodation needed.

*Koslanda.*—Water supply, drainage, and public latrines are wanted.

*Passara.*—Water supply and public latrines are wanted.

*Lunugala* has been brought under Small Towns Ordinance. The water supply is insufficient, drainage unsatisfactory, and public latrines badly wanted.

*Welimada.*—Water supply required.

On some estates hospitals are built. There are now two hospitals at Aliawatta and Paravilla doing very good work. In the low-lying places of Uva that are far away from hospitals at present hospitals should be put up.



*Estate Sanitation.*—There is a total absence of any system of conservancy. Excreta are passed near the lines. Refuse is deposited in like manner. Trenches were tried, but the coolies would not use them as there was no shelter.

*Village Sanitation.*—An attempt has been instituted by the Principal Civil Medical Officer for the prevention and mitigation of malarial fever. This promises to be of much benefit.

#### *Vaccination.*

There are 8 vaccinators (4 civil and 4 estate) employed in this Province. In addition to this, the medical officers and apothecaries carried on vaccination at the outdoor dispensaries. The work was regularly inspected by the Inspector of Vaccination. There were 51 prosecutions, 22 were convicted.

#### *Jail.*

The total number of admissions were 44. The general health of the jail was very satisfactory, there being no outbreaks of any kind of disease. The prevailing diseases were malarial fever, diarrhoea, and dysentery. There were no deaths in the jail.

### (9) REPORT of De Hoedt, M.B., Provincial Surgeon, Province of Sabaragamuwa.

#### *Prevalence of Sickness.*

THE health of the Province has been good. Sporadic cholera occurred on Devakanda estate, Karawanella, and Halgalle group of estates, Kitulgala.

*Malarial Fever* has been prevalent, but not with the severity of 1906. Fever prevailed at different seasons of the year in some districts during the first half, in others in the first and last quarters.

*Dysentery* prevailed in Ellagawa and Kegalla Districts.

*Relative Mortality*, as reported in the quarterly returns of the Registrar-General, show a rise in death-rate during the first quarter, with an improvement in the second quarter. The third and fourth quarters were bad.

*Meteorological Conditions.*—These were favourable.

#### *Particular Diseases.*

There were no cases of smallpox.

*Cholera.*—On Dewakanda estate, Karawanella, there were 3 cases, with 1 death, during January, 1907. In Kitulgala district, between September 14 and 19, 5 cases occurred. The disease was promptly stamped out by strict isolation, disinfection, and early attendance on the sick.

There were 1,410 cases of parangi treated in the hospitals and outdoor dispensaries, against 1,502 in the previous year. Four cases of leprosy. There were 52 cases of chickenpox and 5 cases of measles.

#### *General Sanitary Condition of the Province.*

*Ratnapura.*—This town has a Local Board, and what can be done is being done as the financial position will permit. I regret there is no vegetable market and meat stall. The town conservancy is indifferent, drainage deficient, and insufficient public latrines. Periodical heavy rains inundate large tracts of fields and gardens contaminating wells. The scavenging under the supervision of the Local Board is satisfactory. The water service of the town is insufficient.

*Kegalla.*—Conservancy arrangement is indifferent. Cesspits and wells are so placed that leakage is bound to occur. The number of public latrines is insufficient. The water service is an urgent matter, and should be undertaken as soon as possible.

*Rakwana.*—The sanitary condition of the town is unsatisfactory; there is no well at the eastern end of the town, which is an urgent necessity. A public latrine is also required there. Cement drains have been in course of construction, but this has only been done to a part of the town in front of the boutiques, but a great portion has yet to be done at the back of the houses. There is a swamp behind the boutiques, which should be drained.

*Balangoda.*—Cement concrete drains have been made. A water service is much needed. The slaughter-house is too close to the public latrines. Conservancy good.

*Karawanella.*—This is a small town with a few boutiques, and should be brought under the Small Towns Ordinance.

*Rambukkana.*—There are no drains to the boutiques, and scavenging is being indifferently done. Cement concrete drains ought to be provided.

#### *Hospitals.*

*Ratnapura.*—Owing to considerable increase in the admissions into hospital, temporary wards were provided; a vote for further extension has been granted; the new wards and nurses' quarters are in course of construction. The daily average was 71·38, against 84·40 in 1906. The total number of admissions was 1,706. The death-rate was 15·45.

*Hospital Jail, Ratnapura.*—The daily average sick was ·95. The percentage of deaths to total treated was 2·56. Only one death occurred in the hospital, an alleged insane, who was in a feeble state on admission. The health of the prisoners during the year was very satisfactory.

*Karawanella.*—This hospital is the largest of the district hospitals in the Island. 2,447 cases were treated during the year, against 2,906 in 1906. The death-rate of the institution was 24·34, against 28·35 in 1906. Forty new beds were opened for admission for male diarrhoea patients. The daily average sick was 145·22. At the outdoor dispensary 16,850 visits were paid by patients.



*Kegalla*.—During the year 1,019 cases were admitted. The death-rate was 15·45. 11,665 visits were paid by outdoor patients. The average daily sick in the hospital was 52·04.

*Balangoda*.—In this institution the total number of admissions into hospital has been reduced to 1,095, against 1,441 in 1906. The average daily sick reduced to from 93·34 to 67·04. The death-rate for the year has, however, been higher than in 1906, being 18·69, against 16·46. At the outdoor dispensary 10,598 visits were paid. An operating room is needed for this hospital, and is hoped it will be erected in 1908.

*Rakwana*.—During the year under review 1,226 cases were treated in the hospital, and 7,695 visits were paid by patients at the outdoor dispensary. The death-rate of the hospital has been 10·67. The average daily sick was 50·88.

*Kolonne*.—Admissions were 623. The average daily sick was 32·22. The death-rate was 2·86.

#### Vaccination.

A total of 2,070 cases were vaccinated over that of 1906. The percentage of successful cases to total inspected has been 93·33.

### (10) REPORT of T. F. Garvin, M.B., C.M., Surgeon-in-charge of the General Hospital.

#### A.—THE PAUPER SECTION.

##### I.—Administration.

1. *The Professional Staff*.—Dr. H. M. Fernando, the 1st Physician, was absent on leave from the beginning of April till November. During his absence the 2nd and 3rd Physicians, Drs. Pestonjee and Lucian de Zilwa, had charge of his wards. Dr. Lucian de Zilwa came on the staff of the hospital as 3rd Physician in July, 1907. The duties of 3rd Physician were temporarily performed before that date by Dr. A. M. de Silva. On the surgical side Drs. Paul and Mylvaganam had charge of all the wards. Dr. Chalmers continued as Pathologist and Dr. Castellani as Bacteriologist to the hospital. Dr. Huybertsz, the Judicial Medical Officer, had charge of the outdoor dispensary. Dr. David Rockwood was Anæsthetist. The resident staff consisted of the full complement of six fully qualified officers, three House Surgeons and three House Physicians.

2. *The Nursing Staff*.—The nursing staff of the pauper section consisted of the Superintendent, Rev. Mother Marie de la Pentecoste, and 24 sisters. Of the 24 sisters, 18 were employed as day nurses and 6 as night nurses. The number of nurses, particularly those on night duty, is insufficient for such a large hospital as this, where the daily average of sick was about 425 during the year. There should be at least 4 more night nurses and 2 more day nurses. I cannot speak in sufficiently high terms of the services rendered by the nursing staff. The sisters have all displayed the same interest in their work and the same devotion to duty which have always been characteristic of them.

The maximum salary enjoyed by only two of the attendants is Rs. 15 per mensem. Being poorly paid, a good class of men and women cannot be secured. The rate of pay should be increased before this service can be improved. If this cannot be done, the suggestion I have previously made, viz., that each attendant should have a free midday meal, may be adopted.

3. *The Office Staff*.—The office staff consists of the steward and assistant steward and a clerk. The office work is more than these three officers could perform, and it is only by working from 7 A.M. to 5 P.M. during every day of the week and during all holidays that serious arrears are prevented.

4. *The Dispensing Department*.—The apothecary and his two assistants are overworked, and another should be added to the staff. They have to work daily from 6 A.M. to 6 P.M., and have, in addition, to take night duty alternately. The work in this department is very heavy, particularly with the outdoor dispensary and the compounding of prescriptions sent by Government servants.

5. *Disinfection and Washing*.—The hospital disinfector was utilized for the disinfection of the clothing of the patients entering the hospital as before, but since the adoption of the new scheme for washing the linen of this, of the Lady Havelock Hospital for Women, of the Victoria Memorial Eye Hospital, and of the Clinic for Tropical Diseases came into operation, all the dirty linen of these institutions was put through this disinfector before going to the Prisons Department at Welikada, where the washing was done. This preliminary disinfection was undertaken with a view to prevent carriage of infection from the hospitals to the jails, and during the nine months it was in operation no ill-results ensued. The present method of having the washing done at the jail has given good results. The washing was better in quality and more regularly delivered than under the old system, and now that the machinery is working smoothly there is no inconvenience or delay.

6. *Disposal of Night Soil*.—This service was carried on by the Health Department of the Municipality, and cost a sum of Rs. 552 for the year.

7. *Expenditure*.—The total expenditure of the hospital for the year was Rs. 105,834·64, viz. :—

	Rs.	c.
Diets .. .. .	51,250	37
Extra articles of diet .. .. .	13,408	79
Stimulants .. .. .	5,557	54
Contingencies .. .. .	14,182	46
Wages .. .. .	12,502	0
Burials .. .. .	933	57
Equipment .. .. .	8,000	0

In this expenditure the salaries of the visiting and resident staff, of the nursing staff, and the clerk are not included.

The sanctioned vote was exceeded by Rs. 14,854, as follows :—

	Rs.	c.
Diets and extras and stimulants, by .. .. .	6,916	70
Contingencies, by .. .. .	9,682	46
Burials, by .. .. .	333	57



The wages vote, however, showed a saving of Rs. 2,078. The cost per head per day for diets alone was 31·80 cents, for extras alone 8·64 cents, and for stimulants 3·58 cents, making a total cost of 44·02 cents per head per day. The total cost per head per day in 1906 was 34·87 cents. The cost would have been less, but that no proper contract was entered into till the middle of July, and supplies had to be obtained at prevailing market rates, which were higher for all articles than the rates subsequently contracted at.

The total revenue during the year was Rs. 614·75 :—

	Rs.	c.
Paying patients .. .. .	501	65
Casualty cases .. .. .	78	25
Unclaimed money .. .. .	34	85

9. *Buildings.*—(a) The quarters for the Ceylonese nurses, into which the old administration block was converted, is not sufficient for the present staff, the sleeping room especially being rather crowded.

(b) The building in which the nurses of the pauper section are housed is an old one, and the accommodation is hardly sufficient. It will be necessary soon to add to the accommodation, or rebuild quarters for these hard-working nurses.

(c) *Quarters for the European Nurses.*—In my last report I mentioned the complaint made to me that the outdoor dispensary and admission room, which are located under the quarters of these nurses, were a great nuisance; that the noise coming from here, both by day and night, greatly interfered with the rest of the nurses, and that the smells emanating therefrom were distinctly disagreeable. The outdoor dispensary should be elsewhere and not in the same building.

The quarters are insufficient for the nurses in residence, and will have to be added to as the staff increases. To me it appears a good idea to give the whole of the upper storey of the admission block to these nurses, and to locate the House Officers in the block of buildings known as the Planters' and Anthonisz Wards. All that will be required will be a dining and sitting room, which could be built at small cost.

(d) (1) *The Hospital.*—The whole hospital should be rebuilt on strictly modern lines. A good plan for two-storeyed buildings should be obtained without delay, and every effort made to commence the work. I have stated how utterly unsuitable the present buildings are in all respects, and there is no good in repeating my opinions.

(2) Nothing has been done to improve the hospital kitchen. Plans have, I know, been made, but beyond this stage what has occurred I am not in a position to know.

(3) The milk room has been completed.

(4) The mortuary is nearing completion.

(5) Nothing has, at the end of the year, been done to improve and enlarge the operating theatre as contemplated. Plans have been made and approved, and I presume the work will be taken in hand in 1908.

(6) A special ward for gynaecological cases is a great desideratum.

(7) The ulcer ward and the syphilis ward have thatched roofs. I am in constant dread of a fire in these wards. I have frequently suggested a safer roofing, and I think galvanized iron lined with ceiling boards would be not only better, but more economical in the long run.

(8) I think a special ward, half for males and half for females, consisting of two association wards of 4 beds each, and 2 special rooms to accommodate one or two beds, with latrines, bathrooms, scullery, and nurses' room attached, for paying patients, a much-required addition to the hospital, for the accommodation of such patients as can afford a daily charge of a rupee or two.

(9) I am convinced that the time has arrived when a special hospital should be built for consumptives. At present there is a special ward set apart for male consumptives, but females are treated in the general wards with other cases. A special hospital in the country, where the open air treatment could be carried out, is a great necessity, consumption being a common disease among the Ceylonese, and, in my opinion, rapidly increasing, owing to the absence of all effort at segregation of the afflicted, and the marrying and inter-marrying of tuberculously disposed people.

10. *Surgical Appliances and Instruments.*—Sister Johnson, who has charge of the operating room, has had very hard work. She has one Ceylonese nurse as her assistant. The duties that devolve upon her are onerous, and she finds them telling on her health, and consequently she desires, and in my opinion should have, more assistance.

There have been frequent complaints from the 2nd and 3rd Surgeons regarding the insufficiency of dressings issued to their wards. With the limited supply at my disposal I have endeavoured to observe as much economy as possible, but it must be recognized that more dressings will in the future be an absolute necessity, considering the greater gravity of the operations now practised, and the greater necessity for compliance with the requirements of modern antiseptic surgery. The Accident, General, and Female Surgical Wards have been supplied with water-heaters and sterilizers, so that sterilization of the instruments used in the wards could be effected in them, and not as before sent to the operating room for that purpose.

11. *Overcrowding.*—The transference of patients to the Ragama hospital whenever the wards became congested has been the means of keeping down the number and so preventing overcrowding in the hospital. Since its inception no less than 564 patients were transferred from time to time.

Another rule that was enforced was to refer all patients coming from districts having a hospital or dispensary to those institutions for relief, exception being made only in serious cases or when grave surgical operations were necessary. To further reduce the numbers admitted, the House Officers were enjoined to exclude all such applicants for indoor relief as they considered fit for outdoor treatment. Although the total in hospital did not exceed the number of available beds, yet there was overcrowding, but only to a moderate degree in the lower wards, to which only a certain class of cases could be admitted.



*Professional.*

During the year under review the number of admissions into the pauper section of the hospital was 10,296. The daily average sick was 424·06. The total number of deaths was 1,387, i.e., 12·93 per cent. of those treated. The mortality among Malabars was 447, as against 940 among varied races. The chief causes of death, were as follows:—

	Cases.	Deaths.
Enteric Fever .. .. .	353	79
Malarial Cachexia .. .. .	356	25
Tetanus .. .. .	32	19
Phthisis .. .. .	560	210
Debility .. .. .	623	122
Meningitis .. .. .	12	12
Lobar Pneumonia .. .. .	228	87
Lobular Pneumonia .. .. .	46	22
Diarrhoea .. .. .	715	247
Peritonitis .. .. .	67	19
Abscess of Liver .. .. .	19	11
Bright's Disease .. .. .	80	24
Anchylostomiasis .. .. .	429	50

*Report of the Surgical Work done.*

A very large amount of surgical work was done during the year, mainly by the 2nd and 3rd Surgeons. The number of operations was 1,535 and the deaths 65, making a percentage mortality of 4·23. The 2nd and 3rd Surgeons refer in their special reports to the surgical operations performed by them. I performed 165 operations, 11 of whom died.

**B.—THE PAYING SECTION.**

*Accommodation.*—The accommodation for paying patients will very shortly be increased when the new Planters' Wards are opened. This will give three extra rooms. No further accommodation for patients of the class for whom these wards are intended will be needed. A special operating room for the paying section is nearing completion, and will be a much-desired and useful addition to these wards.

*Statistics.*—The total number of patients admitted in this section during the year was 559. They were distributed as follows:—Clinical Wards 39, Seamen's Wards 257, Cargill and Passengers' Wards 184, Planters' and Anthonisz Wards 79.

There were 314 medical cases and 245 surgical, with 46 deaths. The percentage of deaths was 8·23. The number of surgical operations done was 165 and the number of deaths 11, making a percentage mortality of 6·66.

*Staff.*—Dr. H. M. Fernando had charge of the medical cases in the Clerical, Cargill's, and Passengers', and the Planters' and Anthonisz Wards, and Dr. Castellani of those in the Seamen's Ward. I had charge of the surgical cases in the whole of the paying section.

*Nursing.*—Matron Towell left on June 13, and was succeeded by Matron Poole. The nursing of the paying section was very satisfactory. I must here express my satisfaction with the administration of Matron Poole, who is deeply interested in her work, and has introduced many reforms. I must also state without making any invidious distinctions that the work of the sisters and Ceylonese nurses has been greatly appreciated.

*Revenue and Expenditure.*—The total receipts from paying patients amounted during the year to Rs. 47,501·44, and I estimate expenditure at Rs. 37,801·28, which does not include cost of the nursing staff, medicine, and professional attendance.

*Steward.*—An assistant steward was appointed during the year to assist Mr. Ahamat. The latter has given complete satisfaction in the discharge of his onerous duties.

**(11) REPORT of H. Marcus Fernando, M.D., B.Sc. (London), First Physician, General Hospital.**

DURING the year under review I was absent in England on leave from the beginning of April till the third week of November. During my absence the paying ward medical cases were under the charge of the Surgeon-in-charge, whilst the Second Physician attended to my work in the fever and children's wards.

In 1907 7,079 medical cases received treatment—a very great reduction from the previous year. Of these, there were:—

- Enteric fever, 407 cases with 90 deaths, as against 338 in 1906.
- Malarial fever, 1,244 cases with 28 deaths, as against 2,902 in 1906.
- Dysentery, 445 cases with 153 deaths, as against 1,082 cases with 279 deaths in 1906.
- Dochmius duodenalis, 431 cases with 50 deaths, as against 607 cases in 1906.
- Pneumonia, 279 cases with 112 deaths, as against 329 cases in 1906.

Broadly speaking, the year 1907 has been considerably healthier than the year 1906. There was a very great reduction in malarial fever and dysentery, and an appreciable reduction in dochmias and pneumonia. On the other hand, in enteric fever the year compares badly with 1906, for the number admitted is in excess of the number of the previous year, and that in spite of the fact that towards the end of 1906 an important alteration took place in the admission of enteric cases to this hospital. All the male enterics are now treated together in the wards Nos. 2 and 3; whilst the females and children suffering from the disease are no longer admitted to this hospital, but are sent to the Infectious Diseases Hospital, where special provision is made for their treatment and nursing. Hence, in comparing the figures for the years 1906 and 1907, this fact has to be borne in mind.



Although the figures indicate an increase in enteric for the year as a whole, it is very satisfactory to note that on scrutinizing the list of admissions month by month there has been a steady and considerable diminution of the disease since the end of August last. In the fever wards, which are now specially set apart for the treatment of enteric fever under my control, there were treated during the year 277 cases, with 49 deaths. Of these, only 49 or less than one-fifth represented the number admitted since September 1, i.e., for the last third part of the year. Three of the deaths were from phthisis, and were sent up to this ward on the Widal re-action, and one from dochmiosis owing to the same cause. Excluding these, the deaths from enteric would then be 45 for 273 cases treated, or a death-rate of 16.5 per cent. The following were the chief complications, viz. :—

Twenty cases of relapses with four second relapses.  
Fifteen hæmorrhage or hæmorrhage with perforation.  
Five pneumonia.

Five of the cases were admitted to the ward moribund, and died within twenty-four hours. Of these 277 cases, the town of Colombo contributed 177. The rest came from the suburbs and the provincial towns.

The diminution in the cases of dysentery and malarial fever is very great, as the cases treated for the year amounted to only two-fifths of the number for the previous year. As I pointed out in my last year's report, the number of cases of dysentery during a particular season is often dependent on the malaria. The two diseases rise and fall together, as dysentery comes in the wake of malaria affecting the population debilitated by it.

In the children's ward 60 infants under one month received treatment, of whom 22 died. They were either ill-nourished from want of breast milk in the mother, or were sent to the hospital owing to the death or serious illness of mother after childbed.

In the paying wards 314 medical cases were treated, as against 375 in 1906. The number of cases dealt with in the paying section has diminished during recent years, due chiefly to a falling off of admissions into the Seamen's Ward. Of the cases, 54 were enteric fever with 11 deaths, 23 dysentery with 4 deaths, 45 malarial fever with no deaths, and 5 of pneumonia with 3 deaths.

#### (12) REPORT of R. Pestonjee, Second Physician of the General Hospital.

FROM the beginning of March, 1907, since when I assumed duties as Second Physician of the General Hospital, I have been in charge of the male medical No. 1, upper male diarrhoea, and female medical wards. During a great part of the year, however, some of these wards were looked after by the Third Physician, while I had to attend to the pauper wards of the First Physician, who was away on leave.

The total number treated in the above three wards was 2,359, against 3,893 in 1906. The total daily average sick for these wards was 68.02, the number of beds assigned was 92.

The majority of the cases treated were malaria and its sequelæ, diarrhoea and dysentery, and acute and chronic lung complaints. Male enteric cases, when diagnosed, were transferred to the male medical No. 2 ward, which is specially reserved for such cases under the charge of the First Physician. The female enteric patients were transferred to the Infectious Diseases Hospital, Kanatta. Apart of the male medical ward No. 1 is reserved for phthisical patients who are received from all the other male pauper wards.

As noticed above, by a comparison of the daily average sick and the number of beds available there was no general overcrowding in these wards, but occasionally patients had to be accommodated on the verandah floors of the diarrhoea ward. This occasional pressure was relieved by transferring some of the chronic cases to Ragama.

I need not enter into details regarding the prevalence of each particular disease, as they have been fully dealt with by the First Physician, but I may state that, on the whole, the year under review has been a fairly healthy one.

The nursing as carried out by the sisters was satisfactory. There is much to be desired in the efficiency of the ward attendants, both male and female. This complaint has been made year after year, but stands no chance of redress until a better class can be induced to come forward by the offer of a higher rate of pay. Is it not possible to train attendants, more or less after the fashion of nurses, at some central institution in Colombo, so as to meet the requirements of the Department all over the Island?

#### (13) REPORT of Lucian A. E. de Zilwa, M.D., B.Sc. (London), Third Physician.

I ASSUMED duties at the hospital on July 10, 1907, as Acting Second Physician, and took charge of my proper wards, viz., the Middle and Lower Male and Female Diarrhoea Wards, on November 16, 1907.

In view of the fact that new patients who are *in articulo mortis* and patients attacked with terminal diarrhoea in other parts of the hospital are largely consigned to these wards, a phenomenal mortality is only to be expected. The gravity of the cases, however, renders the work of more than ordinary clinical interest.

The devotion of the sisters to their nursing of the sick and the perfunctory character of the service by the ward attendants are, I believe, matters too well known to call for special comment.

#### (14) REPORT of S. C. Paul, M.D. (Madras), F.R.C.S. (Eng.).

DURING the year under review I performed 656 operations with 18 deaths, giving a mortality of 2.742.

*Hernia*.—52 cases were operated on. Of these, 2 were umbilical, 9 strangulated inguinal, and 41 reducible inguinal hernias. In the treatment of inguinal hernia, I had adopted Fergusson's method in 44 cases and Bassini's method in 6 cases.



*Hydrocele.*—Sixty-five cases were operated on. Of these, 61 were treated by extroversion of the sac.

*Laparotomy* was performed in 45 cases, with 9 deaths. Considering the extreme low condition of some of these cases at the time of admission, the mortality is not high.

Four cases of intestinal obstruction due to peritoneal bands were operated on, with 1 death.

Of 4 cases of penetrating wound of the abdomen, 3 recovered and 1 died from peritonitis, following extensive extravasation of faeces into the general peritoneal cavity.

Purulent peritonitis, 3 cases. Only one recovered.

Three cases of ovariectomy. All recovered.

Three cases of abdominal hysterectomy. All recovered.

I performed hysteropexy in 7 cases for severe cases of prolapse.

Appendectomy was performed in 6 cases. All recovered.

Nephrectomy was done in one case for tubercular disease. The patient recovered.

Nephropexy was done in a case of floating kidney, with good results.

Trephining was done in 18 cases, mostly for depressed fracture of the skull. There were 2 deaths, due to the effects of concussion. In a case of epilepsy following an injury, I trephined over the seat of the old scar, and removed thickened cicatricial tissue. The patient, who previously suffered from fits and lapse of memory, improved after the operation, and left hospital quite recovered. In one case of basal fracture following a gun-shot wound, the eye ball had to be excised owing to laceration, but the patient died four days afterwards from basal meningitis.

*Hepatic Abscess.*—This is not so common among the people of this country. Still a few cases do occur, and in them there is either a history of trauma or a previous history of dysentery always associated with a history of alcoholism. Although dysentery is a common complaint, I have not yet come across a case of hepatic abscess following dysentery, except in association with an alcoholic history. I had six cases during the year. In 2 there was a history of trauma, and in the remaining 4, a history of dysentery and alcoholism. All recovered.

There were 2 cases of suppurative phlebitis of the cord. The treatment was supplemented by infections of antistreptococcal serum. Both the cases recovered.

The penis was amputated in seven cases.

Orchectomy was performed in ten cases for hamatocele.

Laminectomy was done in a case of fracture of the spine with improvement in the symptoms.

In two cases of malunited fracture of the bones of the forearm of some years' standing, and in whom the movements of pronation and supination were impossible or greatly restricted, I did an open operation, resetting the malunited bones, and wiring them in good position. Both the patients recovered the use of their forearms.

The upper jaw was excised in 4 cases. Three recovered.

The lower jaw was excised in 2 cases for cancer, and both did well.

The breast was excised in 5 cases for cancer. In all these cases I removed the sternal portion of the pectoral muscle and cleaned the axilla thoroughly. All the cases did well.

Whitehead's operation excision of the tongue was done in 4 cases for cancer in its early stage, and all recovered.

Excision of the elbow joint was done in a case of bony ankylosis, with satisfactory results.

The right temporo-maxillary joint was excised in a case of ankylosis following suppuration of the middle ear.

Fibro-adenoma of thyroid, 1 case. The tumour was enucleated.

Five cases of empyema were treated by resection of the rib and drainage. One case died from tubercular disease of the lungs.

A few garden seats round the cool and shady trees in the hospital grounds are badly needed. Convalescence would be greatly hastened if patients could sit out in the open air as much as possible. The grounds under the large and shady trees would be ideal places for the convalescent patients to spend part of their time. I hope some philanthropic individuals will come forward to supply this much-needed want.

*Nursing.*—I am greatly indebted to the sisters of the various wards for the careful nursing and whole-hearted attention they have paid to the patients who have been placed under their care. Some of the sisters have become quite expert nurses in looking after abdominal cases which require such careful and close watching. At present each ward of 32 to 40 beds has only two sisters. It would be better if we could secure some pupil nurses to help the sisters in their ward work. As I have pointed out before, it is a pity that the largest hospital of the Island is not utilized for the training of the nurses.

In conclusion, I must thank Dr. David Rockwood, the anaesthetist to the hospital, for the careful manner he had administered chloroform. Half the anxiety of an operation is over when one has such a reliable and careful chloroformist.

#### (15) REPORT of H. B. Mylvaganam, F.R.C.S. (Eng.), Third Surgeon, General Hospital.

*Wards.*—During the year under review I was in charge of the general surgical and ulcer wards and part of the female surgical and syphilis wards. Owing to the opening of a hospital at Ragama for the treatment of chronic cases, the congestion of my wards was greatly relieved during the year. It is now high time that the present wards of the hospital, which have existed for several years, are replaced by buildings better suited for the treatment of the sick according to the modern requirements.

The Roman Catholic sisters who are in charge of my wards deserve a word of praise for the excellent way in which they perform their duties both by night and day. They perform their duty with great earnestness for the welfare of the sick entrusted to their care. Their work deserves encouragement.

*Operations.*—During 1907 644 operations were performed with 36 deaths, making an average mortality of 5.5 per cent. This mortality is not high. The mortality has been mostly among my laparotomy and liver abscess cases. Most of the latter class were too far advanced, and the liver in each case was converted into a bag of pus. In a few there were multiple abscesses.



(16) REPORT of W. H. de Silva, M.B., F.R.C.S., on the Victoria Memorial Eye Hospital and Grenier Eye, Ear, and Throat Infirmary.

A.—*The Hospital.*

THE number of beds available is 44, including 4 for paying patients. The number of patients treated during the year was 594; of which 27 were paying cases in the private wards. Of the 567 other cases, there were 346 males and 221 females. The 594 patients stayed 14,069 days, the average residence in days per case being 23.68 days. The average daily sick was 35.80. The smallest number of patients on any one day was 28 during six days in the fourth week of October. On several occasions every bed was occupied, and cases have been kept waiting for admission. There were 41 cases remaining in the hospital at the end of the year 1907.

Receipts from paying patients totalled Rs. 1,801.89. The cost per head was a trifle over 76 cents per diem. This is inclusive of the diets of the private paying patients and the salaries paid to the staff attending on the Grenier infirmary.

Looking at the expenditure purely from an economical point of view, one is forced to make the deduction from the 131 cataract cases alone that have been relieved. Most of these cases would have been entered as blind in the Census returns, and would have gone a begging; in fact, they would have been consumers and not producers for this Colony. Estimating the earning capacity of each case at Rs. 100 per annum, and the consuming capacity at the same figure, it will be seen that the Colony has benefited in cataract cases alone to the extent of Rs. 26,200.

The patients have come from all parts of the Island, and some from South India. There were 4 deaths during the year. One died after a preliminary iridectomy for cataract. Another patient died after a cataract extraction in an advanced diabetic coma. One case died in the male private ward, death being due to septicæmia. An infant who was admitted with ophthalmia, due to pernicious anæmia, died within a day of admission.

*Accommodation.*—The natives of Ceylon are getting more used to the European methods of treatment of eye diseases, and already the available accommodation is proving too small. Sooner or later some extensions will have to be taken up. It is extremely desirable to have a pathological room in connection with the hospital for the (1) preservation of rare specimens of eye diseases, (2) for the examination of pathological sections, and (3) for the bacteriological examination of discharges from the eyes for diagnostic purposes.

The chief diseases treated were cataracts 217, keratitis ulcerosa 75, acute infective ophthalmia 61, including ophthalmia neonatorum.

In the cataract cases there were 10 failures, including 1 death (diabetic coma) already referred to.

B.—*Grenier Eye, Ear, and Throat Outdoor Infirmary.*

Total number of cases seen 13,170. Total voluntary contribution Rs. 717.15.

In connection with the cases treated, I have to make two observations, viz., that trachoma and ophthalmia neonatorum, are on the increase. These cases mostly come from among the Malays living in the Slave Island Ward. Malays are an alien race, and they are not living under the best sanitary surroundings. Trachoma has not as yet got a hold on the indigenous Sinhalese population. Some steps should be taken for notification of these cases, if the spread of the disease and its usual complications and sequelæ ending in blindness are to be prevented. The cases of ophthalmia neonatorum are also on the increase, and I would advise their notification.

Now that there are Municipal midwives in Colombo, I would recommend that all cases of ophthalmia in infants within the first week of their birth be reported, and that the midwives be instructed to bring the cases to the eye infirmary for treatment. If proper steps are taken, I feel certain that the next Census returns will show an appreciable reduction in the number of cases of blindness.

Operations performed on out-patients number 354. Total number of operations done at hospital and infirmary number 573.

*Staff.*—I was away on leave in Europe for seven months during the year, visiting several of the eye hospitals in Britain and the Continent, and attended the Ophthalmological Section of the British Medical Association at Exeter, where I read a paper on the Leprotic Diseases of the Eye in Ceylon. For this purpose the Hendala Leper Asylum was visited several times during February and March, and all the leprotic eye cases, numbering over 120, were examined. I also attended the Oxford Ophthalmological Congress.

Dr. Andreas Nell, M.R.C.S., attended to my work during my absence, assisted by Dr. H. Joseph, L.M.S.

(17) REPORT of L. A. Prins, Acting Medical Superintendent, Lunatic Asylum.

*House of Observation.*

AT the beginning of the year there remained in the house of observation 7 males and 2 females, total 9. During the course of the year were admitted 137 males and 36 females, total 173. Thus, the total number of cases treated was 173 plus 9, total 182 (males 144, females 38). Of this number 182, 66 males and 22 females, total 88, were transferred to the asylum; and 76 (65 males, 11 females) were discharged in court—most of them were found to be not insane, and a few were taken away on security being given. It is remarkable that a mere suggestion of insanity is sufficient to commit a man into the house of observation.

At the end of the year 10 males and 5 females, total 15, remained in the house of observation. The largest number of patients in it at any one time was 18 (15 males, 3 females). The maximum was for males 15 and that for females 5. The minimum was for males 3 for females 1. The average daily number resident was 10.49 (males 8.03, females 2.46).

*Deaths.*—Three cases died.



The following table shows the total number of cases treated, deaths, and the number transferred to asylum and discharged from courts for the last five years :—

Year.	Total treated for the Year.	Deaths in the House of Observation.	Transferred to the Asylum.	Discharged.
1903 ..	223 ..	— ..	78 ..	141
1904 ..	143 ..	3 ..	78 ..	54
1905 ..	159 ..	1 ..	74 ..	75
1906 ..	181 ..	1 ..	77 ..	94
1907 ..	182 ..	3 ..	88 ..	76

#### Asylum.

At the beginning of the year 512 patients (320 males, 192 females) remained under treatment. 188 patients (120 males, 68 females) were admitted during the year. The total number of patients under treatment was therefore 700 (440 males, 260 females). 69 patients (40 males, 29 females) died. 82 patients (51 males, 31 females) were discharged. The number remaining at the end of the year was 549 patients (349 males, 200 females), showing an increase of 37 (29 males, 8 females) as compared with last year.

The average daily number resident was 532.99 (males 334.80, females 198.19), a decrease of 20.46 as compared with the figures for 1906. The decrease in the daily average in case of males was 10.73, and in case of females 9.72.

The largest number resident in the asylum proper on any one day was 553 (males 346, females 207), showing a decrease of 27 as compared with the maximum of the previous year. The minimum number occurred in the month of January, and was 510 (318 males, 192 females). This was the result of the discharge of the Indian patients in the later months of 1906.

*Admissions.*—The number admitted was 188 (120 males, 68 females), showing an increase of 28 as compared with the figure for 1906.

In England, and I believe in most European countries, insanity is more prevalent among women than among men, but in Ceylon it is just the other way.

This number, 188, was classed as follows :—

Mania ..	112	Dementia ..	5
Melancholia ..	54	Idiocy ..	2
Epilepsy ..	7	Imbecility ..	1
Not insane ..	7	General paralysis of the insane ..	1

Eighteen of the admitted had been in the asylum before, and therefore were relapses. In quite 80 per cent. of the cases admitted a family history of insanity was present, and in about 40 per cent. the exciting cause seems to have been the abuse of alcohol. In a few cases perhaps long continued attacks of malaria was the exciting if not the cause of insanity.

In the autopsy table one frequently finds marked cirrhosis of liver and kidney, atheroma of the large vessels, thickening of meninges, and blocking up of the perivascular lymph spaces, signs which seem to point to alcohol and malaria.

Far too great a number of cases come from Kalutara and Panadure. This has been noticed for many years. For 1907 the admissions from these two towns were 26 (out of 60 for the whole Western Province). Probably more alcohol is consumed in these distillery towns than in others.

The following table of admissions from each Province shows population, number of admissions, and percentage of admissions to population :—

<b>Western Province :—</b>			<b>Province of Sabaragamuwa :—</b>		
Population ..	920,683		Population ..	321,755	
Admissions ..	93		Admissions ..	13	
Percentage ..	.01		Percentage ..	.004	
<b>Central Province :—</b>			<b>Province of Uva :—</b>		
Population ..	622,832		Population ..	186,674	
Admissions ..	34		Admissions ..	6	
Percentage ..	.005		Percentage ..	.0032	
<b>Southern Province :—</b>			<b>Eastern Province :—</b>		
Population ..	566,736		Population ..	173,602	
Admissions ..	28		Admissions ..	1	
Percentage ..	.004		Percentage ..	.00057	
<b>North-Western Province :—</b>			<b>North-Central Province :—</b>		
Population ..	353,626		Population ..	79,110	
Admissions ..	9		Admissions ..	2	
Percentage ..	.0025		Percentage ..	.0025	
<b>Northern Province :—</b>					
Population ..	340,936				
Admissions ..	2				
Percentage ..	.00058				

*Discharges.*—82 persons were discharged, a decrease of 45 as compared with 1906. The decrease is not real as in 1906, 36 patients who were sent to Madras were put down as discharged. Of these 82, 48 (males 28, females 20) were recovered, 23 (males 14, females 9) were relieved, and 11 (males 9, females 2) were not insane.

The recovery rate calculated on the number of admissions is for males 23.33 and for females 29.11, and for both 25.53, rather a low recovery rate as compared with the previous year 35.62. The average recovery rate for the last ten years is 37.68.

No Indian patients were discharged to any Indian asylum. Information regarding 22 patients were sent about the middle of the year, but no further steps have been taken by the Indian Government. This is a matter for regret. The discharge of these 22 would have given us a certain amount of single-room accommodation, which is just now much needed.



*Health of the Patients.*—285 cases were treated in the male and female infirmaries. Of these, 51 suffered from dysentery, 18 from malarial intermittent, 18 from phthisis, 10 from heart disease, 29 from softening and degeneration of brain, 67 from intestinal disorders. The remaining suffered from less important affections. There were 4 cases of chickenpox, which were treated in the Infectious Diseases Hospital.

*Deaths.*—The number of deaths was 69 (40 males, 29 females). The ratio of deaths to total number treated being 9·85, the ratio for males 9·07, for females 11·15. The ratio of deaths to the average daily number is 12·96. Ratio for males 11·91, for females 14·64.

The number of deaths due to tubercular disease was 14 out of 69. Last year the figures were 19 out of 92. Four of this number suffered chiefly from tubercle of lung, 8 from tubercle of intestine as well as lung, 1 from general tuberculosis, and 1 from tubercular disease of bone. Tubercle was not a complication in any of the rest.

The following table shows the chief causes of death and the ages of those who died :—

	Under 20 Years.			20-30			30-40			40-50			50-60			60-70			70 and over.			Total.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Brain Disease ..	1	—	1	4	1	5	6	1	7	2	5	7	1	1	2	1	—	1	1	1	1	15	9	24
Heart Disease ..	—	1	1	—	2	2	—	—	—	1	—	1	—	—	—	—	—	—	1	—	1	2	3	5
Tubercular Diseases ..	1	—	1	1	1	2	3	5	8	1	4	5	—	—	—	1	1	2	—	—	—	7	11	18
Dysentery and Intestinal Diseases ..	—	—	—	—	—	—	3	1	4	1	1	2	1	—	1	—	—	—	—	—	—	5	2	7
General Paralysis of the Insane ..	—	—	—	—	—	—	—	—	—	1	—	1	1	—	1	—	—	—	—	—	—	2	—	2
Other Diseases ..	2	—	2	1	—	1	2	—	2	2	—	2	2	1	3	2	1	3	1	2	3	12	4	16
Total ..	4	1	5	6	4	10	14	7	21	8	10	18	5	2	7	4	2	6	2	3	5	43	29	72

No fatal accident and no case of suicide occurred.

*Accidents.*—There were three serious accidents—

- (1) Intra-capsular fracture of left femur, the result of an accidental fall at tennis.
- (2) Fracture of rib, probably caused in a struggle with the attendant in charge. The patient was very excited.
- (3) Colles' fracture due to a fall in the bath.

*Escapes.*—A patient called Hawadia stole a key from a sleeping attendant and escaped in December from No. 4 male ward. The man was quite sane, and was to be discharged on security. He has not yet been captured.

*Asylum and House of Observation combined.*—As these institutions are worked together in one building, I now give the figures for the whole institution :—

		Males.	Females.	Total.
Remained ..	..	327	194	521
Admitted ..	..	257	104	361
Total treated ..	..	584	298	882
Discharged ..	..	182	64	246
Died ..	..	43	29	72
Remaining ..	..	359	205	564

The average daily number of patients in the whole institution was 543·49 (males 342·83, females 200·66). The figures last year were for the whole institution 563·60 (males 352·60, females 211).

The largest number resident at any one time in the year under review was 564, the maximum for males 360, for females 209. The figures last year were for the whole institution 601, for males 386, for females 217.

*Administrative.*—Dr. Spence, the Superintendent of this Asylum, went on long leave on March 29, from which date the institution was in my charge. Dr. R. C. Aldons, the first assistant medical officer, was transferred to the port in June, and the vacancy was filled up by Dr. H. E. Ekanayake, the second assistant. Dr. V. A. Goonetilleke from the Welikada jail succeeded him.

In the clerical department Mr. C. A. Philips was appointed as steward, Mr. Rozairo reverting to his fixed appointment as clerk-overseer.

There was no change in the nursing staff. Mr. Serpanchy, head overseer, was responsible for the work on the male side, and Miss Smith, the matron, for the female side.

*Buildings.*—The milk room as well as the storeroom for food stuffs are now complete, but have not yet been given over by the Public Works Department to my charge. Both these were urgently needed. A new bathroom and lavatory has been added to No. 8 male ward. This ward houses about 60 patients, and up to date is being served by a small bath and a two-seated lavatory, necessitating frequent changes of buckets. The new lavatory is six-seated and the bathroom is spacious, and has two large enamelled baths to be used for hot medicated baths for a certain class of patients.

The kitchen has been put into good repair and the walls colourwashed. A stove has been added to the native kitchen, and no range fires are now allowed in it. It is possible now to be in the kitchen without risk of suffocation.



*Accommodation* is still insufficient. The congestion in some of the wards has been relieved by the use of the old medical assistant's quarters as a ward room.

*Washing.*—The washing, which has been done for several years on the premises, was in July given out to Welikada jail, and though this entails an increased expenditure, an adequate advantage is gained by increased cleanliness in the wearing apparel of the patients.

*Water Supply.*—The water supply is still deficient, and it is with the greatest difficulty the upstairs wards are kept clean. The pressure in the pipe is too low to drive the water to any height. After much correspondence the Waterworks Department cleaned out the pipes within the asylum enclosure, but there was very little, if any, benefit from it. In the last quarter of the year I thought it advisable to have the old pump repaired, which in the early days of this institution was used to pump water upstairs and into the drains. The well water is not used for drinking, but for drain washing, and would be of great service should a fire break out.

*Expenditure.*—The amounts voted for diets, wages, and contingencies were insufficient, and supplementary votes were asked for. The original vote for diet and extras was Rs. 59,081. The total expenditure for the year on these items was Rs. 68,397, the deficit therefore was Rs. 9,316. In wages the deficit was Rs. 276.32, and in contingencies Rs. 14. The total supplementary vote was Rs. 11,766.65, which more than covers the total deficit. The deficit in diets and extras was chiefly due to the want of a contractor for the first five months, and during these months articles of diet were bought at market rates, which were much higher than the present contract rates.

The revenue from paying patients amounted to Rs. 5,302.57.

The cost per diem for each patient was about 52.8 cents, a rate slightly higher than last year, and is due to the increase in the contract rates for 1907 as compared with 1906.

#### *Industrial Department.*

*Statement.*—A statement of its accounts for the year is annexed to this report. The funds have been increased in 1907 by Rs. 423.52. This fund provides the means for the amusement of the patients. At present the better class of patients play croquet, a game of which they are extremely fond, tennis, and bagatelle. The native patients play draughts, cards, and such games as nerenchi, puncha, dam, diviam, chauncha, &c. About 200 patients were taken to see the races. Patients are sent frequently to the Museum and the temples about Colombo. A gramophone playing Sinhalese and Tamil songs and bana recitations is very popular amongst them. In December a party of Indian jugglers were engaged to give a performance. The patients seemed to enjoy the show immensely. There is also a library of selected books in English, Sinhalese, and Tamil for their use.

*Work done by the Patients for the Industrial Department and the Asylum.*—Working parties are sent out daily for vegetable gardening, sweeping, weeding, kitchen, and lavatory work. A small party works daily in the carpenters' shed, and for their use a set of new tools was bought this year. A few males are engaged in tailoring. A good percentage of the women do needlework, drawn-thread work, fancy work, &c. Much of the ward work, such as sweeping and washing, is done by patients chiefly of the dementia class under the guidance of the attendants. The majority of these are excellent workers, and contribute not a little to keep the institution clean, and but for their help the present staff of attendants, though they do excellent work, will be insufficient. All working patients are given cigars, tobacco, and betel, which are paid for by the industrial fund.

#### *Industrial Department, Lunatic Asylum.*

##### *Statement of Account, 1907.*

	Rs.	c.	Rs.	c.	Rs.	c.
<i>Balance on January 1, 1907.</i>						
Cost of 4 per cent. Inscribed Stock	8,480	0	8,629	85		
Do. do. ..	4,000	0	4,400	0		
					13,029	85
Fixed deposit, Hong Kong and Shanghai Bank ..	—	—	—	—	3,500	0
Current account ..	—	—	3,415	14		
Cash in hand ..	—	—	127	47		
					3,542	61
					20,072	46
<i>Receipts in 1907.</i>						
Interest on current account, Hong Kong and Shanghai Bank ..	71	5				
Interest on fixed deposit, Hong Kong and Shanghai Bank ..	140	0				
Dividend on Government Stock ..	499	20				
Sale of produce, &c. ..	1,361	26				
			2,071	51		
<i>Expenditure in 1907.</i>						
General current expenditure ..	—	—	1,647	99		
Balance profit ..	—	—	—	—	423	52
Total funds ..	—	—	—	—	20,495	98



Invested, &amp;c., as follows:—

		Rs.	c.	Rs.	c.
In 4 per cent. Ceylon Govern-					
ment Stock	..	8,629	85		
Do.	do.	4,400	0		
Fixed deposit, Hong Kong				13,029	85
and Shanghai Bank	..				
Current account, Hong Kong				3,640	0
and Shanghai Bank	..	3,730	28		
Cash in hand	..	95	85		
				3,826	13
				20,495	98

(18) REPORT of C. Heynsbergh, L.R.C.P. and S. (Edin.), Superintendent of the Leper Asylum, Hendala.

## I.—Statistics.

THE general statistics for the year are as follows:—

		Males.		Females.		Total.
Remained on January 1, 1907	..	245	..	72	..	317
Admitted during the year	..	116	..	32	..	148
Total treated	..	361		104		465
Discharged	..	68	..	11	..	79
Died	..	55	..	11	..	66
Remained on December 31, 1907	..	238	..	82	..	320

The largest number resident was 340, the lowest 307, and the daily average males 247.77, females 78.08, total 325.85. The number of beds available for males 280, females 102, total 382.

*Admissions.*—The number admitted was 148 (116 males and 32 females), being 26 less than the previous year, 84 were new admissions and 64 re-admissions. Of the former, 20 were of the tubercular, 37 of the anæsthetic, and 27 of the mixed forms of leprosy. The Western Province, including Colombo and Colombo District, contributed the largest number of admissions, viz., 54, Southern Province 9, Central Province 4, Province of Sabaragamuwa 4, Province of Uva 2, Northern Province 1, North-Western Province 1, and South India 9. Of the admissions, the number of new cases was 6 less than the previous year, the duration of disease previous to admission being from one to nineteen years.

*Discharges.*—79 were discharged, 7 of whom were allowed home isolation, 2 were discharged under special circumstances by the authority of the Principal Civil Medical Officer, 27 were given temporary leave sanctioned by Government, and 43 absconded, of whom 11 are still at large. There are no effective means of preventing patients from absconding, the Asylum having an open river frontage and a low wall easily scaled. The punishment of absconders is the stoppage of their betel allowance and imprisonment in the cells.

*Deaths.*—There were 66 deaths during the year, the percentage to total treated being 14.19, an increase on the death-rate of .55, the mortality being chiefly due to intercurrent maladies and exhaustion.

## 2.—Administration.

There were no changes in the administration of the asylum, the staff remained the same as in the previous year, and gave every satisfaction in the discharge of their duties.

## 3.—Buildings.

A new ward of 50 beds was built and is in occupation since May 9, 1907.

## 4.—Water Supply.

The water supply, dietary, and sanitation were satisfactory.

The editors of the various newspapers in Colombo have kindly continued to forward copies of their respective papers free of charge, and on behalf of the inmates of the asylum, to whom these papers prove a blessing, I desire to thank the kind donors, also to the general public for their benefactions during the year.

(19) REPORT of Mrs. M. N. Fysh, M.B. (Lond.), Superintendent of the Lady Havelock Hospital for Women and Children.

I RETURNED from leave and resumed charge of the hospital on February 16, after sixteen months' absence, when Miss de Boer acted for me.

The total number of patients treated during the year was 1,112, 41 less than last year, but there was a higher daily average of sick, 34.51, as against 33.61, and many patients had to be refused admission for lack of room. There is great need for enlargement of this hospital; so many patients have to be sent out



while still not really strong enough to go, because we are forced to make room for more urgent cases. Another ward of 8 beds as recommended in my report for 1904 would be enough for the present, or if the new children's hospital is built as suggested ample room will be provided.

Of the 1,112 patients treated, 347 were children, 131 boys and 216 girls. The children's ward was very often overcrowded, so that some children had to be put into the other wards, and many had to be sent away for lack of room.

There were 39 paying patients this year. The paying wards are very poor and small.

There were 40 Muhammadan patients. The number of these keeps low, but it is no use expecting really purdah women to come to a hospital where their ward is as public as all the other wards.

The cost of non-paying patients has been about the same this year as in my report for 1904. The total cost of diets, extras, and stimulants being Rs. 4,042, or Rs. 3.75 per head per year. This works out at the modest sum of about 37 cents per head per diem. The total cost of stimulants was only Rs. 111.

There were 179 cases of diseases peculiar to women. Of these, 64 were cases of prolapse of the uterus. Of the 64, 50 were cured, 1 died (a feeble old woman extensively ulcerated), 8 were relieved, and 5 not improved.

There were 65 cases of typhoid fever admitted. Of these, 5 died in hospital. There were 38 cases of dysentery, with 3 deaths. This was, on the whole, mild in type in the natives, but very severe in the Europeans treated, one of whom died, and the other recovered after three months in hospital.

There were 57 surgical operations, with 2 deaths. One was a case of papillomatous ovarian cyst, which had ruptured before the operation, causing severe shock from internal hæmorrhage; and the other was a very large uterine fibroid which was growing in the left broad ligament, involving cervix and vagina as well as the body of uterus. The operation was prolonged, about two hours, and the patient died from shock. The other operations included 3 cases of abdominal section for ectopic gestation and 1 ovariectomy, all of whom made good recoveries; and one huge pyosalpinx, which I drained through the abdominal incision, with an excellent result. There were also two interesting cases of antral abscess, which is uncommon in this country; in both the results were excellent, recovery being complete, but I had to operate three times in one case and four times in the other. These were very satisfactory cases, as the patients were suffering so much distress on admission, both from pain and deformity. Both occurred in children, one a girl of twelve and the other three years old.

*Nursing Staff and Training School.*—Our Matron, Miss Richardson, reports as follows:—"Seven candidates were accepted during 1907; one only resigned. There were two other resignations, a charge nurse and a pupil nurse. Two charge nurses and three pupil nurses were transferred to other hospitals, and one charge nurse and one pupil nurse were transferred to this from other hospitals. Owing to the number of changes only two nurses were able to present themselves for examination in December, both passed; one, however, only on condition that she received a good report for work during the next three months.

"Owing partly to the increase in the number of paying patients the work was heavier, but a larger staff made it easier to cope with.

"With one or two exceptions, the work of the pupil nurses in the wards and at their classes was satisfactory, and compared favourably with that of previous years. The usual nursing lectures on sick nursing and practical work in the wards, bandaging, and sick room cookery were given throughout the year."

#### (20) REPORT of M. Sinnatamby, M.D., F.R.C.S., Medical Superintendent of the De Soysa Lying-in Home for the Year 1907.

THE total number of patients treated during the year was 961, as against 933 in 1906. Of the total number treated, 887 were discharged cured, 10 were removed by relatives before recovery, 19 were transferred to the General and other hospitals for the treatment of inter-current diseases, 9 died, and 36 were remaining at the end of the year.

The percentage of deaths to total treated was 0.93, as against 2.14 in 1906. Of the deaths recorded, 6 were due to accidents of childbirth and 3 to non-puerperal causes.

I am happy to record a very low mortality during the year. 0.93 per cent. is a record which has never before been obtained. If the deaths from non-puerperal causes were deducted, the actual mortality from accidents of childbirth would amount to only 0.62 per cent.

Eleven cases of puerperal eclampsia were admitted during the year, of which two proved fatal. Death in both these cases was due to oedema of the lungs. Eleven cases of placenta prævia were admitted, of which 2 proved fatal.

Of the 941 admissions, 853 were admitted before delivery, 34 after delivery, and 54 before commencement of labour.

*Operations.*—Of the 125 operations performed, 2 cases were of caesarian section (one vaginal and the other abdominal, the former for elongated cervix and the latter for contracted pelvis), 1 case of myomectomy for uterine fibroid, 1 case of ovariectomy complicating labour, 1 case of hysterectomy for ruptured uterus, and 1 case of laparotomy for ruptured tubal pregnancy require special mention.

The popularity of the institution is steadily increasing, particularly among the Muhammadans, who in several instances seek admission, not as a last resource from sheer necessity to escape death, but from choice. The number of cases from this class of patients admitted during the year was 25.

The paying section is also getting more popular than before. The number of admissions during the year was 27.

*Midwives.*—The Lying-in Home as a training institution for nurses is doing excellent work. The European method of conducting labour under aseptic principles, which has been hitherto denied to the poor villagers, will be gradually introduced. During the year 20 midwives were trained and sent out.



My application to increase this class of pupils to 8 having received a sympathetic response from the authorities, the gradual introduction of European midwifery to remote villages is now assured. The present supply is not equal to the demand of the whole Colony. The number trained and sent out each year being limited to 8 at a time, consequently the introduction of European midwifery practice into different parts of the Island will necessarily have to extend over several years. To ensure success it is necessary to enlist the sympathy and co-operation of the Government Agents and headmen of the various Provinces.

*Equipment.*—The vote allowed under this head has been inadequate to meet the growing demands of this institution.

*Staff.*—Although a permanent midwife has been allowed, yet the institution is under-staffed. It is impossible for the matron with only one midwife and untrained pupils to cope with the daily increasing work satisfactorily. The rapid increase in the paying section tax the resources of the staff when called upon to do work both day and night. An assistant matron and three permanent midwives are required for the better management of the institution.

*Accommodation.*—There is every prospect of Government sanctioning the increased accommodation asked for with a view to prevent the chronic state of congestion to which the institution has been subjected. The new operating room, which the widow of the late Mr. H. Fernando has offered to build at a cost of nearly Rs. 7,000 nearly twelve months ago, is in process of construction.

#### (21) REPORT of S. Hallock, L.F.P. & S. (Glas.), Medical Officer of the Convict Establishment.

DURING the year under review I was in charge of the Convict Hospital, Borella, where sick prisoners are admitted for treatment from the jails in Colombo and Mahara. I was also responsible for the medical supervision of the above jails.

The health of the prison population in all the jails was very satisfactory, and compares very favourably with that of the previous year. The number treated during the year was 1,822 with 53 deaths, as against 2,641 with 68 deaths during the year 1906. The chief diseases prevalent during the year were malarial fevers and diseases of the digestive system, eyes, and lungs.

Mahara and Mutwal jails were particularly free from malarial fevers in the usual epidemic form, and this is due to the clearing of the jungle round the jail at Mahara and to the continuance of the prophylactic treatment with quinine.

Diarrhoea and dysentery were much less than during the previous years, and this was, in my opinion, due to better sanitary arrangements and improvement in the penal diet. Mumps, which is another common disease prevalent in jails, almost disappeared during the latter part of the year. Few cases of enteric were admitted from Mutwal and Mahara during the early part of the year. Only 4 cases of chickenpox were admitted during the year, and we were free from smallpox and cholera. Malarial fever did not prevail to such an extent as in previous years.

During the year under review only 47 cases of dysentery were treated with 5 deaths, as against 172 cases with 14 deaths during the previous year. Of the 16 cases treated in Borella Convict Hospital, 4 were treated with anti-dysentery serum, with marvellous results, improvement setting in usually after the second injection.

There was also a marked reduction in the number of diarrhoea cases admitted into my wards. There were 74 cases with 6 deaths, as against 139 cases with 13 deaths during the previous year. Welikada jail contributed the largest number of cases of diarrhoea. Mahara treated 15 cases, and Welikada female hospital 19 cases.

The number of eye cases treated during the year was 242, as against 245 treated last year. Mutwal and Welikada contributed most of the cases.

Thirty-six cases of pneumonia were treated with 16 deaths, and 6 of phthisis pulmonalis with 2 deaths. At Mahara 9 cases, with 5 deaths.

Eleven cases of mumps were treated, as against 111 cases during 1906. Four cases of chickenpox were admitted during the year, as against 11 cases in 1906. Two cases of measles were admitted, as against 8 cases in 1906.

At the end of 1906 4 cases of enteric fever remained, and 8 fresh cases were admitted during the year, with no deaths. This disease was prevailing during the early part of the year, and the last case admitted was from Mutwal during the month of July. At Mahara 11 cases were treated, with 1 death.

There was ample accommodation at the Convict Hospital owing to the small number of sick, and two of the wards had to be closed throughout the year. The accommodation at Welikada and Hulftsdorp became inadequate at times. Mahara and Mutwal jails were never overcrowded.

The Convict Hospital includes the infectious diseases hospital as well, and consists of ten wards and two cells containing 213 beds. Nothing has been done to replace the temporary cadjan wards with permanent buildings, but the floor of one of the wards was cemented during the year.

*Drainage.*—This continues to be satisfactory in all the jails.

As in previous years, the nursing of the patients was done by night and day nurses in Borella Convict Hospital, and night nurses only at Mahara and Mutwal. The same arrangements exist with regard to the water supply as last year. All the jails in Colombo are supplied with water from Labugama, and Mahara jail from wells well protected from pollution. There are three wells at Mahara; the water from the two wells situated outside the walls are used for drinking purposes, and the water from the well inside is used for culinary purposes.

The latrines in all the jails are supplied with Doulton's squatting plates. The night soil of Welikada, Borella Convict Hospital, and Mahara is disposed of by incineration, and the urine is emptied into septic tanks outside the walls. The excreta from Mutwal and Hulftsdorp are removed by Municipal carts. The night soil buckets are disinfected before and after use by bichloride solution in all the jails.



Raw provisions are daily supplied by a contractor and cooked by prison labour. This is done in all the jails.

There are two kinds of labour. The one called "hard" consists of husk-beating, pingo-carrying, and treadmill at Welikada; stone-cutting and quarrying for healthy prisoners at Mahara and Mutwal. At Welikada, besides the works above enumerated, masonry, carpentry, rattan works, tailoring, iron, and tin works are carried on. Light labour consists of coir-twisting and coir-picking for weak and debilitated prisoners. Tasks are divided into half and quarter.

The number of convalescents sent to Negombo, Batticaloa, and Jaffna are as follows:—Negombo 101, Batticaloa 10, and Jaffna 5.

## (22) REPORT of A. J. Chalmers, M.D., F.R.C.S., &c., on the Ceylon Medical College.

THE condition of the College continues slowly to improve, but as a medical school it is still far behind the ordinary standard of such institutions in lecture halls, museums, and laboratories, &c.

The pathological laboratory, generously equipped by Mr. Simon Fernando Vimala Gunawardena, Mudaliyar, was opened for work on May 1, 1907, and is now in full working.

A chemical physiological laboratory has been sanctioned, and it is hoped that this will be erected before May 1, 1908, so that the students may benefit by it during the coming short session.

The dissecting room urgently requires to be enlarged, being too small for the number of students working therein.

A main College building containing the College offices, Council room, Colonial Medical Library, a large lecture theatre, and a museum for anatomy and pathology is urgently required. When this is provided it will be possible to convert the present Colonial Medical Library into a botanical laboratory, and the present pathological museum into a small biological museum for teaching purposes.

The upkeep vote of the College will require to be increased in order that the equipment of the new laboratories for practical and chemical physiology and for pathology may be kept up to date, and specimens preserved for the museums.

A demonstrator for biology has been provided for next year, and therefore there will be ample assistants for the biological department, which has been recast, and now consists of—

- (1) Emeritus Lecturer.
- (2) Lecturer on Zoology.
- (3) Lecturer on Botany.
- (4) Demonstrator.
- (5) Laboratory Assistant.

The College sustained a sad loss in the early death of Professor Burgess, D.Sc., whose learning and kindness endeared himself to the staff and students alike. Mr. Joseph, B.Sc., London, has been appointed in his place.

The College has been fortunate enough to secure a trained physiologist as Lecturer on Physiology in Dr. Lucian de Zilwa.

Dr. A. M. de Silva has been appointed Lecturer on Anatomy, *vice* Dr. H. B. Mylvaganam, who has been appointed Third Surgeon of the General Hospital. The number of students continues to increase. Fourteen medical and 19 apothecary (total 33) students joined during the year, bringing the total number of students in the short session to medical 111, apothecary 43, total 154. Nine students obtained the license in medicine and surgery and 9 students obtained the certificate of apothecary during the year; and several students left to go to England and for various reasons. Therefore, the total number of students left in the College at the end of the year is medical 100, apothecary 33, total 133.

The numbers of students who passed the various examinations are as follows:—

Medical Preliminary	..	..	..	..	13
First Professional	..	..	..	..	19
Second Professional	..	..	..	..	11
Third Professional, Part I.	..	..	..	..	20
Third Professional, Part II.	..	..	..	..	9
Apothecaries Preliminary	..	..	..	..	18
First Apothecaries	..	..	..	..	9
Second Apothecaries	..	..	..	..	9

The income of the College in fees is increasing rapidly, a little over Rs. 20,000 being collected this year.

The maximum expenditure of the College, if all the votes are totally expended and every person employed draws maximum pay, will be Rs. 49,299.

The nett cost to the Government, if this maximum sum is paid and Rs. 20,000 are recovered in fees, will be Rs. 29,299, or in round figures Rs. 30,000, which is a very small sum, for the College is the main source from which the Medical Department of Ceylon is drawn. If the officers of that Department were obtained from England, it would be impossible to get them for less than £450 per annum on the average. Therefore, the College is a great saving to the Government revenue, but in order that the medical men of the Colony may be properly trained, it is necessary to provide buildings and laboratories and to equip them suitably and to pay the lecturers, so that they may be able to devote ample time to preparing their lectures and practical classes.

At present there is no encouragement for research work. There are no scholarships, by means of which good students can be induced to devote some of their time after obtaining their licenses to the investigation of scientific or medical matters.



Much work has been done during the year by the Medical College Council, more particularly with reference to medical registration.

The work of the College office, which has been steadily increasing every year, underwent a very great increase during 1907, due largely to the Medical Registration Ordinance, and additional aid in this office is urgently required.

(23) REPORT of Aldo Castellani, M.D. (Florence), Director of the Bacteriological Institute and of the Clinic for Tropical Diseases.

I HAVE the honour to forward my report of the above institutions for the year 1907. As the clinic contains only 16 beds, and there is no accommodation for Europeans, the Seamen's Ward of the General Hospital has been attached to it. In this ward there is opportunity to observe cases of tropical diseases which do not occur in Ceylon.

The assistant to the institute, Mr. A. C. de Silva, and the apothecary of the clinic, Mr. C. Ratnaweera, have discharged their duties very satisfactorily.

*Bacteriological Examinations carried out during the Year.*—The total number of specimens submitted for examination during the year was 1,940.

The total income of the institute from fees recovered from medical practitioners, &c., amounted to Rs. 830, Rs. 763.50 was deposited in the Bank of Madras on Government account; the arrears amounted to Rs. 66.50.

*Research Work.*—According to instructions I do not give here the particulars of the various investigations carried out during the year, but only very briefly some of the results arrived at.

*Framboesia (Parangi, Yaws).*—The further investigation I have carried out during 1907 has proved that the disease is a form of treponemosis, the specific agent of it being the *treponema pertenue*; which I described in 1905.

*Clinical Remarks on Framboesia; Treatment.*—The results of the clinical study of the disease are embodied in a report which will appear in the transactions of the Congress of Dermatology held in New York, September, 1907. I have convinced myself that the late symptoms and sequelae of the disease, as described by the older authors, occur fairly frequently, though denied or put in doubt by most of the modern writers. The disease runs a much longer course than is generally admitted; in fact, in a number of cases, although there are periods during which the organism is apparently free from symptoms, the infection is simply dormant, and sooner or later gives rise to renewed attacks.

It is stated by several authors that framboesia is a disease which is spontaneously curable, and that drugs are useless in the treatment of the malady. While I do not deny that some cases may recover spontaneously, this, in my experience, is certainly the exception and not the rule. The medical man who has the opportunity to keep such untreated cases in view after they have been discharged from the hospital soon convinces himself that the cure was only apparent; in most cases the eruption breaks out again after a variable period of time. Moreover, many of these untreated cases, as well as a certain number of the patients who have undergone a not sufficiently prolonged treatment, develop after some years' severe tertiary lesions, deep ulcerations, caries of bones, &c.

In the clinic I have tried various methods of treatment, making experiments also on monkeys inoculated with yaws. The conclusions arrived at are as follows:—

(1) Drugs and preparations which, in my experience, are efficacious in the treatment of yaws are potassium iodide, atoxyl, cacodilate of quinine, sodium cacodilate, mercury. These drugs have probably also a preventive action. It is to be noted, however, that some old standing cases are refractory to any treatment.

(2) The best routine treatment for ordinary cases is potassium iodide given in large doses.

(3) In severe and persistent cases a mixed treatment consisting of a course of potassium iodide, followed by injections of atoxyl or of the cacodilates, is of great advantage.

(4) The treatment of yaws' patients must be prolonged till long after the eruption has disappeared, as, although the granulomatous eruption speedily subsides, the infection in many cases is merely dormant, not destroyed. This fact is shown by clinical experience, as well as by experiments on monkeys inoculated with the disease.

*Tinea Imbricata.*—Ceylon must be included among the countries where this disease is endemic. The first case was observed by me in 1905. During 1906 and 1907 I made various experiments in the treatment of the disease; most of the cases were outdoor patients. Every medical man practising in the tropics well knows how difficult is the treatment of *Tinea Imbricata*; it is easy to obtain temporary improvement and even an apparent disappearance of the eruption, but as soon as the treatment is discontinued the eruption, as a rule, starts afresh. I have made various experiments to test the efficacy of the medicaments by applying contemporarily different liniments, ointments, &c., to symmetrical parts of the body and comparing the results. It would appear from my researches that the best treatment for *Tinea Imbricata* is liniment iodide as suggested by Manson, or resorcin dissolved in tincture benzoin as suggested by me.

*Tinea Intersecta.*—This skindisease, which I described some months ago, is characterized by the presence of dark brownish patches, the surface of which is at first smooth and tense, then whitish cracks appear on the surface, so that several white lines can be seen on the dark surface. Later the epidermis splits. The disease in contrast to *Tinea imbricata* never develops in concentric circles. The fungus is a trichophyton. I described it fully in the proceedings of the International Congress of Dermatology, New York, 1907.



*Microsporiasis Rosea*.—This dermato-mycosis, which I have described in a communication presented to the International Congress of Dermatology, New York, is fairly common among Europeans, and is easily mistaken with Seborrhea corporis. It is characterized by the presence of patches of various size and shape, but generally small and roundish, of a red or pinkish colour, which sometimes has a fawn tinge. The fungus is morphologically indistinguishable from the fungus of *Tinea flava*; neither fungus can be grown on artificial media.

*Tinea Flava (Pityriasis Flava; Microsporiasis Flava)*.—More than 40 per cent. of all my patients showed patches of *Tinea flava*, the fungus of which, *Microsporon tropicum*, I described in 1905.

*Tinea Nigra (Pityriasis Nigra; Microsporiasis Nigra)*.—I have come across several cases of this form of pityriasis. The affection, however, is much rarer than *Microsporiasis flava*. The fungus (*Microsporon Mansoni*, Cast. 1905) is easily grown; the colonies are hæmispheric and of a black colour. This dermatomycosis occasionally attacks Europeans.

*Madura Foot*.—A typical case of mycetoma of the yellow grains variety has been in the clinic for several months. Potass iodide given in large doses has not shown any beneficial effect, and amputation will be necessary.

*Lichen Planus*.—One case of lichen planus was admitted to the clinic. The disease is fairly frequent among natives of the various races. In every dark-skinned native the diagnosis may be difficult to the medical man used to see skin diseases in Europeans only. Apart from the colour, however, the skin lesions are identical, the papules having an angular outline, a flat, occasionally umblicated shiny surface. When the eruption disappears, it generally leaves behind a well-marked pigmentation.

*Psoriasis*.—This disease is said to be extremely rare or absent altogether in the tropics. My experience in Ceylon and Africa is that the affection is almost as common in the tropics as in temperate zones. In Ceylon I have had opportunity to observe cases among Europeans, Burghers, Tamils, and Sinhalese. The two cases treated in the clinic were Tamils.

*Pityriasis Rubra*.—One typical case, a Sinhalese, was admitted to the clinic. The amount of desquamation was enormous. Removing the scales the skin appeared of an angry red colour. There was apparently no history of prægressed psoriasis.

*Fibroma Molluscum*.—A well-marked case has been under observation in the clinic for several months. The disease is fairly common in Ceylon and Southern India, apparently much more common than in Europe.

*Septic Pemphigus*.—This disease was observed in a Moorman; the bullæ were large and distributed all over the body. A very virulent streptococcus was isolated from the liquid aseptically drawn from the bullæ. The case ended fatally. At the post-mortem the same streptococcus was grown from the blood of the heart and from the spleen.

*Pemphigus Foliaceus*.—A French sailor was admitted to the Seamen's Ward suffering from this disease. The eruption had started while the patient was in Saigon, bullæ appearing on the skin of the chest. At the time of admission the whole body presented large yellowish flakes, a few bullæ being present here and there. The blood showed an enormous degree of eosinophilia (62 per cent.). The eosinophilia was probably due in part to the many worms which the patient harboured in his intestine: *Anguillula intestinalis*, *Tania saginata*, *Ascaris lumbricoides*, *Trycocephalus dispar*. It is well known, however, that a feature of *Pemphigus foliaceus* as well as *dermatitis herpetiformis* is a well-marked eosinophilia.

*Kaposi's Disease*.—Together with Drs. Chalmers, De Silva, and Fysh, I have been able to examine two typical cases in European children, brother and sister.

*Dysentery (Vaccine Treatment of Chronic Cases)*.—In the Seamen's Ward numerous cases of amœbic and bacterial dysentery have been admitted during the year. For the bacterial form (Kruse-Shiga type) the anti-dysentery serum prepared at the Lister Institute has given me very good results; naturally the serum has no beneficial effect in amœbic dysentery. For chronic bacterial dysentery I advised the vaccine treatment first introduced by Graig in India and myself in Ceylon independently. The first case so treated was published by me in the Zeit. f. Tropen Hygiene, 1906. Later Forbes (Indian Medical Gazette, 1907) treated numerous other cases in India, chronic and acute, with good results.

*Prurigo*.—I have seen this affection in a Sinhalese girl fourteen years of age. The disease was of five years' standing; the eruption was localized to the legs and thighs, numerous small hard papules, some of which surmounted by a small blood crust, being present. On passing the hand over the eruption one had the sensation of stroking a nutmeg grater. The inguinal glands were enlarged and hard. The girl had been repeatedly treated with sulphur ointment, as the case had been considered to be scabies. Naphthol ointment (5 per cent.) regularly applied has much improved the condition, but a complete cure cannot, of course, be expected.

*Lupus*.—One typical case of lupus of the face was admitted to the clinic. The patient, a Sinhalese, left after a few days.

*Leprosy*.—Several cases of leprosy have been transferred to the Leper Asylum. Further experiments with a vaccine treatment were tried. As the leprosy bacillus cannot be grown, I tried in 1906 to obtain a vaccine in the following way:—Nodules containing numerous bacilli were aseptically removed from a patient suffering from nodular leprosy. The nodules were well triturated for several hours, using 1cc. of pepton water for each gramme of tissue. After trituration the mixture was passed through sterile gauze to remove the larger shreds of tissue. The filtrate contained numerous bacilli, as shown by films stained by Zeihl's methods. The filtrate was placed in sterile test tubes and heated to a temperature of between 60 and 70 centigrade for one hour; then to a certain number of tubes  $\frac{1}{2}$  per cent. carbolic acid was added. With this filtrate, which can be considered a crude form of vaccine, I inoculated in November and December, 1906, two leprosy patients, both of them in a very advanced stage of the malady. The inoculations were made three times a week, the amount inoculated being 1cc. for each injection. One patient received altogether 16 injections; another 20. The patients stood the injections well, but no distinct improvement was noticed in any of them. In 1907 a third patient was treated in the same way, without obtaining any marked improvement.



*Treatment of Experimental Trypanosomiasis.*—In 1907 I continued some experiments I had started several years ago. The results of the investigation are the following :—

(1) Quinine cacodilate shows a well-marked trypanocide action in monkeys experimentally inoculated with a strain of trypanosome closely resembling *T. Evansi*.

(2) Perchloride of mercury improves the general condition of the inoculated monkeys, and frequently causes the temperature to subside to normal. Given alone, however, its trypanocide action is not very marked. In patients affected with sleeping sickness, it would seem from the experiments made by Low and myself in Uganda in 1903 that perchloride of mercury given intrasubcutaneously induces a fall in the temperature, but the improvement is temporary.

(3) I suggest that quinine cacodilate alone, or better in combination with intravenous injections of mercury, should be tried on sleeping sickness, using large doses. If it should be found that quinine cacodilate has a marked trypanocide action also on *T. Gambiense*, the advantage of this drug over other preparations would be its powerful action on the malaria parasites. This would be an appreciable advantage, as in the experience of many observers, among whom Low and myself, a large number of sleeping sickness patients are suffering also from malaria.

(4) Quinine cacodilate, besides its trypanocide properties and its action on Laveran's parasites, has apparently some action on other protozoa, as in my experience its use is beneficial in Kalazar and Yaws.

*Palliative Treatment of Elephantiasis.*—The palliative treatment I have devised for elephantiasis consists in thiosinamin injections in combination with rest and proper bandaging; when the skin has become softer and more elastic, long elliptical strips of the redundant skin are removed. The particulars of the treatment may be found in my papers published in the *Journal of Tropical Medicine*, August 1, 1907, and September 16, 1907. The treatment in some cases has caused a most striking improvement; it must be considered, however, only palliative.

*New Protozoa.*—Among several new species of protozoa I have found in the lower animals, I may mention the following :—*Entamoeba nuttalli*, n. sp.; *Trypanosoma pernyi*, n. sp.; *Cercomonas pernyi*, n. sp.; *Trychomonas perronci*, n. sp., &c.

#### (24) REPORT of H. Bawa, F.R.C.S. (Edin.), Port Surgeon of Colombo.

THE duties of Port Surgeon of Colombo were carried out by myself, assisted by Assistant Port Surgeon H. P. Joseph, L.M.S. (till the month of June, when he was transferred), Assistant Port Surgeon Fitzroy Keyt, L.R.C.P. & S. (Edin.), and from the month of June H. S. Christoffels, L.R.C.P. & S. (Edin.), who had been previously officiating as Assistant Port Surgeon for Immigration, in charge of cooly depôt at the root of the breakwater.

2. The disinfecting station was under the care of Mr. E. W. de Silva, Apothecary.

3. During the year the following ports were declared infected :—Jeddah, Verawal, Brisbane, Bahrein, Moulmein, Singapore, Bussorah, Alexandria, Tellicherry, Porbander, Port Said, Hiogo, Kobe, Osaka, Mauritius, Bombay, Karachi, Rangoon, Fremantle, Hong Kong, Calcutta, Mangalore, Bangkok, Madras, Sydney, and Manila.

4. The following ports were declared healthy during the year :—Port Said, Tellicherry, Alexandria, Suez, Bhavnagar, Jeddah, Verawal, Bahrein, Singapore, and Hong Kong.

5. The total number of British and foreign vessels calling at this port during the year was 2,758, as compared with 2,857 the preceding year. The total number of Indian and native sailing craft during the year was 516, as compared with 484 in the previous year.

6. Of these, 1,935 were granted free pratique as having come from healthy ports, or as having completed the required period of absence from an infected port, and being free from infectious disease.

7. 823 vessels were kept in modified quarantine, working as healthy, as being from infected ports and absent from the same less than the period entitling them to free pratique.

8. Ten vessels were placed in strict quarantine owing to the existence of infectious disease on board. Of these, one vessel was kept in strict quarantine owing to the existence of acute pneumonia (in view of the possibility of pneumonic plague) which was negatived by subsequent observation.

9. Eight vessels were placed in strict quarantine owing to the existence of smallpox. In these cases the patients were removed under personal supervision to the landing place at the root of the breakwater and sent by the Municipal infectious disease ambulance cart to the Infectious Diseases Hospital. The infected quarters of the vessel and clothing of the crew disinfected, and the latter vaccinated or re-vaccinated.

10. One vessel was kept in strict quarantine for cholera, and 1 case of that disease was discovered in a lighter in the harbour (a Colombo cooly, who was probably infected ashore). In these cases the patients were removed to the Infectious Diseases Hospital, and thorough disinfection effected under medical supervision. One case of scarlatina was removed to the Infectious Diseases Hospital, and also 5 cases of chickenpox and 3 cases of measles.

11. No cases of bubonic plague or suspected bubonic plague were discovered on any vessel during the year.

12. *Disinfection.*—Till the month of August disinfection was effected by the Thresh's disinfector at the Kochchikada disinfecting station. This station was dismantled in that month, and the new disinfecting station at the root of the breakwater was taken over from the Harbour Works Engineer, who constructed it. This station is provided with an "equifex" disinfector, in addition to the old Thresh's apparatus, and is thoroughly equipped with provision for all requirements. There is accommodation for saloon passengers of both sexes, tally clerks, coolies, &c., residential room for apothecary, ample water supply, and electric lighting. Should it be deemed necessary, all classes of passengers can be disinfected as to person and effects without delay or discomfort. During the year 15,763 passengers were disinfected, 27,692 coal coolies, 33,035 cargo coolies, 5,732 tally clerks, total 82,222.



13. *Vaccination.*—There having been a widespread epidemic of smallpox in India, vaccination was carried out extensively during the year at the vaccination station attached to the immigration depôt, the total number of these being 21,097.

14. The immigration depôt at the root of the breakwater was constructed at the same time as the disinfecting station, and is now more spacious and more suitable to requirements than the old one, which was demolished by the Harbour Works, who required its site for machinery. It is built of masonry instead of corrugated iron, and fully equipped with latrine accommodation and bathing troughs, with an ample water supply. The food supplied by the contractor has been satisfactory. The total number of estate labourers who arrived during the year was 55,724, as compared with 88,930 the year previous.

15. The total number of miscellaneous deck passengers from South Indian ports who arrived during the year were 73,930. All such from infected districts were disinfected both as to person and effects, and those not vaccinated or having unsatisfactory marks of vaccination were vaccinated or re-vaccinated.

16. *Bills of Health.*—The sum realized by the sale of bills of health for the year was Rs. 14,175, which was duly credited to revenue. Monthly returns of the recoveries were forwarded to the Principal Civil Medical Officer.

*Cattle Disease Certificates.*—None were issued during the year.

The amount realized from the disinfection of soiled linen during 1907 was Rs. 1,379.24, which was duly credited to revenue.

#### Estate Medical Aid Receipts and Expenditure in the Civil and District Hospitals during 1907.

RECEIPTS.			EXPENDITURE.		
	Amount.	Total.		Amount.	Total.
<i>District Hospitals.</i>	Rs. c.	Rs. c.	<i>District Hospitals.</i>	Rs. c.	Rs. c.
1. Diets paid by estates at 30 cents a day ..	56,300 90		1. Diets for estate labourers and "others" ..	148,302 52	
2. Diets paid by Government for "others" at 50 cents a day ..	52,828 50		2. Medicines supplied from Civil Medical Stores ..	43,621 57	
3. Funeral expenses of "others" ..	863 28		3. Funeral expenses of estate labourers and "others" ..	3,558 44	
4. (a) Medicines sold and prescriptions compounded at dispensaries ..	16,922 73		4. Salaries of District Medical Officers and allowances and salaries of nurses and apothecaries ..	156,801 97	
(b) Collections at dispensaries ..	2,231 97		5. Departmental expenditure ..	3,804 9	
(c) Medicines used by "others" in hospitals ..	12,890 69		6. Construction, maintenance, and repairs to buildings ..	68,708 3	
(d) Medicines used by "others" in dispensaries ..	15,300 64		7. Rent of outdoor dispensaries ..	9,991 0	
5. Paid by estates for visits ..	21,076 4		8. Transport of medicines, &c. ..	1,738 32	
6. Sale of drugs, unserviceable articles, &c. ..	6,006 10		9. Equipment ..	16,426 95	
7. Recoveries made for maintenance of "others" ..	606 26		10. Wages of attendants, &c. ..	30,764 11	
		185,027 11	11. Contingencies ..	7,650 60	
			12. Printing ..	5,915 52	
					497,283 12
<i>Civil Hospitals.</i>			<i>Civil Hospitals.</i>		
1. Paid by estates for labourers at 30 cents a day ..	26,502 20		1. Diets for estate labourers ..	44,962 17	
2. Paid by estates for visits ..	2,643 0		2. (a) Medicines used by above in hospitals ..	10,412 24	
		29,145 20	(b) Medicines used by above in dispensaries ..	865 37	
					56,239 78
Grand Total ..	—	214,172 31	1. Value of medicines supplied to district dispensaries ..	22,824 11	
Export duty ..	—	170,579 72	2. Value of medicines supplied to estate dispensaries ..	46,733 46	
Deficit ..	—	238,328 44			69,557 57
Total ..		623,080 47	Total ..		623,080 47





