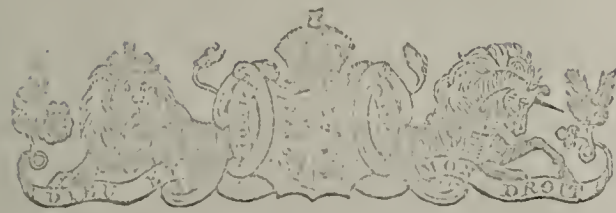


CEYLON.



ADMINISTRATION REPORTS, 1908.

PART IV.— EDUCATION, SCIENCE, AND ART.

MEDICAL.

REPORT OF SIR ALLAN PERRY, M.D.,

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

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MEDICAL.

REPORT OF THE PRINCIPAL CIVIL MEDICAL OFFICER AND INSPECTOR-GENERAL OF HOSPITALS FOR 1908.

I HAVE the honour to submit for the information of Government the Administration Report of the Medical Department for the year 1908.

His Excellency the Governor was pleased to nominate me to represent this Colony at the Fifth Annual Meeting of the Philippine Islands Medical Association held at Manila from February 26 to 29. I left Ceylon on this duty on February 8 and returned on March 24, during which time 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, 1908, was 4,038,456 (exclusive of the military and shipping population). 160,713 births and 117,982 deaths were registered. The birth-rate was 40·1 per mille, calculated on the estimated population at the middle of the year, and the death-rate 29·4 per mille, as against 32·8 and 30·1 respectively in the previous year.

SECTION II.—PUBLIC HEALTH.

Vital Statistics.

3. The public health during 1908 was not good. There was more malaria, smallpox, and enteric fever than in the previous year. The greatest number of deaths occurred under the heading "Fever" (23,157). Diarrhoea and dysentery came next with 20,681, respiratory diseases claimed 4,849, and phthisis under a separate heading with 4,039 victims. There were 303 registered deaths from smallpox and 33 deaths from cholera.

4. The Western and Northern Provinces shared equally the honours of healthiest Provinces for the year. Negombo was the healthiest town for the first three quarters, but had to yield to Chilaw in the fourth quarter. The most unhealthy Provinces were the North-Central Province for the first quarter and Uva for the remainder of the year.

5. The mean infantile mortality in children under one year of age for the four quarters of 1908 was 182 to 1,000 registered births. The highest mortality was in the first quarter of the year among Tamils in Mannar, viz., 589 per 1,000 registered births; the lowest mortality was in the second quarter among Sinhalese at Negombo, viz., 96 per 1,000 registered births.

6. *The Health on Estates.*—The annual birth-rate was 34·5; the annual death-rate was 36·2. The principal causes of deaths were diarrhoea with 3,173 deaths; debility 2,505; dysentery 2,176; pneumonia 1,074; infantile convulsions 836; fevers 694; anchylostomiasis 836. During the first and fourth quarters the deaths were most numerous; the second quarter, judging from the death-rate, was the healthiest. In getting out the above figures one is struck by the equal manner in which some of them, e.g., fevers, pneumonia, and dysentery, were distributed throughout the year irrespective of season. 400 deaths are put down to general dropsy, 456 to malarial cachexia, and 183 to anæmia. Many of these diseases must have been due to anchylostomiasis, and I think it would be safer to regard them all as due to that disease, which would make the number of deaths on estates from anchylostomiasis equal to 1,935.

7. *General Health.*—The total number of registered deaths in 1908 was 117,982, as against 119,377 in 1907. The largest number of deaths occurred in the fourth quarter, with the other quarters in the following order: first, third, and second.

8. The Registrar-General divides the causes of deaths under the following heads:—(a) Specific, Febrile, or Zymotic Diseases; (b) Parasitic Diseases; (c) Dietetic Diseases; (d) Constitutional Diseases; (e) Developmental Diseases; (f) Local Diseases; (g) Violence; (h) Ill-defined and Non-specified.

Under (a) there were 46,410 deaths, this heading 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, zoonous, venereal, and specific diseases; under (b) there were 5,677 deaths, which include deaths under anchylostomiasis; under (c) there were 428 deaths; under (d) 12,435 deaths, including rheumatism, cancer, tubercular disease, blood disease, diabetes, leprosy, elephantiasis, and paratyphoid; under (e) there were 3,871 deaths; under (g) 36,094 deaths, including those due to diseases of the nervous system, organs of special sense,

circulatory, respiratory, digestive, lymphatic, urinary, reproductive, and integumentary systems, and organs of locomotion; under (g) there were 2,095 "violent deaths"; and 9,972 registered under (h) "Ill-defined and Non-specified Causes."

The order by numbers given below, in which the deaths stand for some of the important diseases, is interesting and instructive; it is also suggestive as to the necessity of improved sanitation and water supplies throughout the Island, and for the extension of recent medical knowledge for the prevention of diseases:—

	Deaths.		Deaths.
(a) Enteric fever ..	8,240	(e) Anchylostomiasis ..	1,256
(b) Phthisis ..	4,039	(f) Tetanus ..	448
(c) Diseases of parturition ..	2,465	(g) Snake-bite ..	195
(d) Malaria and ague ..	1,862		

Hydrophobia claimed 16 victims, appendicitis only 3.

Principal Diseases.

9. *Malaria*.—The total number of persons treated for this disease in the various hospitals and dispensaries during the year was 513,799, as against 484,898 in 1907. An increase was shown in every Province, except the Northern, Western, and Eastern. The North-Western Province contributed over one-fourth of the total number. 581 cases were treated in the hospitals attached to jails, in which 1,058 cases occurred in 1907.

The total amount of quinine issued from the Civil Medical Stores was 71,456 ounces, which cost Rs. 42,872.60.

For further remarks on this subject please see Appendix to this Report.

10. *Cholera*.—There were 51 cases of cholera reported to this Department in 1908 with 40 deaths, as against 105 cases and 62 deaths in 1907. The largest number of cases (44) occurred in the Western Province, with 36 deaths. The remaining cases occurred in the Central and Sabaragamuwa Provinces. The cases were mostly confined to Colombo, and there can be little doubt that it was introduced from India. Small outbreaks occurred in the Lunatic Asylum and in Welikada jail. The greatest number attacked were in the third and fourth quarters of the year. The death-rate was high, 78.43 per cent.

11. *Smallpox*.—Outbreaks of smallpox occurred in every Province, with the exception of the Eastern, in 1908, but the greatest number of cases were in the Colombo District. In all there were 1,446 cases with 321 deaths reported to this Department, as against 126 cases and 24 deaths in the previous year. In the Western Province there were 962 attacked and 198 deaths; in the North-Western Province 190 attacked and 55 deaths; Central Province 148 and 34; Northern Province 75 and 15. In the remaining Provinces the numbers were few. Of all the cases in the Western Province, 607 were treated in the Infectious Diseases Hospital at Kanatta; the other principal centres in this Province were Kadawata, Veyangoda, Hanwella, and Negombo. There were 225 persons attacked who had no marks of vaccination, and of the deaths 99 were unvaccinated. This disease was prevalent among the Moorish community, who from caste prejudice and custom rather foster its spread. At the request of the leaders of this community special accommodation was provided by the Government for Moorish patients; a building was erected for the reception of patients on payment from the richer class of this community.

12. *Enteric Fever*.—The compulsory notification of enteric fever is not possible throughout this Colony. It is carried out in the Municipal and some other towns, but there are very many cases that are never reported. The Registrar-General gives 8,240 deaths from this disease for the year; it is impossible to estimate what was the number attacked. In the Government hospitals in the Island (excluding jail hospitals) 1,029 cases of this disease were treated with a death-rate of 24.10 per cent., as against 696 cases and a death-rate of 22.55 for 1907.

In the Colombo hospitals and jails 785 patients were treated with 188 deaths, a death-rate of 23.94 per cent. There were 85 cases in the Kandy hospital, 29 in Kalutara, 16 in Kurunegala, 12 in Dikoya, 12 in Deltota, 11 in Marawila, 10 in Galle, and 10 in Gampola hospitals. As the Government hospital accommodation in Colombo for this disease was severely taxed in the second half of 1908, the Colombo Municipal Council voted a sum of money for the erection of temporary enteric fever hospitals, one of which is completed and is in working order.

13. *Dysentery*.—During the year 3,099 cases of dysentery were treated in the various hospitals, with a death-rate of 26.62 per cent. In 1907 the figures were 3,474 cases and a mortality rate of 36.38 per cent. This disease was prevalent in the Western, Central, Uva, and North-Western Provinces.

In all the jails there were 524 cases with 37 deaths, a death-rate of 7 per cent., the death-rate last year being 6.09 per cent. In the jails of the Colombo District 312 cases occurred, which greatly exceeded the number of admissions (48) for this disease last year.

14. *Chickenpox*.—3,471 persons were treated for this disease, as against 2,441 in 1907.

15. *Measles*.—The number of persons treated for this disease was very small.

16. *Leprosy*.—The special appointment of Dr. Pestonjee as Medical Superintendent of the Leprosy Asylum, Hendala, was sanctioned during the year. He took up duty on January 1, 1909. 320 cases were treated in the asylum on December 31, 1907. There were 159 admissions during the year 1908, making a total of 479 cases treated. Of these, 62 died and 92 were discharged to isolation in their own homes or on leave; some of these 92 persons escaped. At Kalmunai, in the Eastern Province, there is a set of

wards for lepers; and a few stray cases were treated in other hospitals, numbering 44. It is impossible to give the number of lepers scattered about the Island who are not under observation. The Provincial Surgeons keep registers of reported cases, but there are many cases not reported. The present accommodation for lepers is inadequate. Most of the patients come from the Western and Eastern Provinces. The want of a second asylum in the Eastern Province has been felt for a long time. His Excellency the Governor has included in his five-year programme for new works a leper asylum at or near Batticaloa. A site has been selected by the Government Agent of the Eastern Province and myself on the other side of Batticaloa across the Kaladi ferry, where land can be obtained for such agricultural pursuits as may be suitable for the patients.

The treatment introduced by Professor Deycke, and mentioned in my report for last year, has been tried in Ceylon, with some success; but the number of patients undergoing the treatment has not been large enough to express a definite opinion as to its value. The observation will be continued.

17. *Anchylostomiasis*.—The number of cases of this disease treated at the Government hospitals has increased during the year under review by 603, the total being 4,434. 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. The death-rate from this disease in 1908 to cases of the disease treated was 23·31 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.

On looking up the admissions and deaths for this disease during the last ten years, I find that they have increased more than three-fold.

18. *Diphtheria*.—There were 3 cases of this disease treated in the Colombo hospitals during the year, with one death.

19. *Parangi*.—Each year shows reduced figures in the number of persons attacked with parangi; in 1908 the number of cases treated was 3,246, of whom 23 died, as against 3,513 cases and 45 deaths in 1907. The North-Western Province is the part of Ceylon most affected, viz., 712 cases, the Eastern Province returned 614 cases, the Southern Province 529, Uva 414, and Sabaragamuwa 405. A special hospital for parangi patients has been sanctioned for the North-Western Province.

20. *Malignant Diseases (Cancer, &c.)*.—Reports on 200 cases of malignant disease were received from the various Provinces as under:—

Western Province	..	140	North-Western Province	..	9
Central Province	..	14	North-Central Province	..	1
Northern Province	..	1	Province of Uva	..	6
Southern Province	..	22	Province of Sabaragamuwa	..	4
Eastern Province	..	3			

Of these, the clinical diagnosis of carcinoma was made in 176 cases and of sarcoma in 24 cases.

21. *Phthisis*.—During the year 1908 there were 1,318 cases of phthisis treated at the various medical institutions, as compared with 841 cases treated during 1907. The following tables show race and sex distribution in the Provinces and race and age distribution of the disease in the sexes:—

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

Provinces.	Sinhalese.		Malabars.		Tamils.		Moors.		Burghers.		Malays.		Europeans.		Bengali.		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 ...	262	193	90	20	41	18	16	7	8	10	1	2	—	1	2	—	—	1	420	252	672
Central ...	45	28	46	23	10	9	3	1	1	4	1	—	—	1	—	—	—	—	106	66	172
Northern ...	5	—	3	—	44	18	1	—	—	—	—	—	—	—	—	—	—	—	53	18	71
Southern ...	49	34	5	3	1	—	1	—	2	2	2	—	—	—	—	—	—	—	60	39	99
Eastern ...	1	—	1	—	15	4	1	—	—	—	1	—	—	—	—	—	—	—	19	4	23
North-Western	59	24	21	3	5	—	7	1	—	—	1	—	—	—	—	—	—	—	93	28	121
North-Central	10	1	5	—	2	1	—	—	—	—	—	—	—	—	—	—	—	—	17	2	19
Uva ...	35	12	13	6	2	—	2	—	—	—	—	—	—	—	—	—	—	—	52	18	70
Sabaragamuwa	43	9	10	6	1	—	1	1	—	—	—	—	—	—	—	—	—	—	55	16	71
Race and Sex Totals	509	301	194	61	121	50	32	10	11	16	6	2	—	2	2	—	—	1	875	443	1,318
Grand Total	810		255		171		42		27		8		2		2		1		1,318		1,318

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

	Sinha- lese.		Mala- bars.		Famils.		Moors.		Bar- 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 ...	1	2	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	3	4
6—10 ...	2	5	—	—	—	—	1	1	—	—	1	—	—	—	—	—	—	—	—	4	6	10
11—15 ...	14	16	3	2	1	—	1	—	—	1	—	—	—	—	—	—	—	—	19	19	38	
16—20 ...	44	28	31	4	11	9	—	—	1	4	—	1	—	—	—	—	—	—	87	46	133	
21—25 ...	64	52	20	12	17	6	3	2	1	—	—	—	—	—	1	—	—	—	106	72	178	
26—30 ...	80	61	39	14	15	10	9	2	—	1	3	—	—	—	1	—	—	—	147	88	235	
31—35 ...	78	31	23	6	17	7	5	1	2	2	—	—	—	2	—	—	—	1	125	50	175	
36—40 ...	77	24	36	10	23	5	3	2	1	2	2	1	—	—	—	—	—	—	142	44	186	
41—45 ...	45	18	8	5	7	2	2	—	1	2	—	—	—	—	—	—	—	—	63	27	90	
46—50 ...	49	29	10	5	11	5	2	1	—	3	—	—	—	—	—	—	—	—	72	43	115	
51—60 ...	39	22	14	2	15	4	4	1	4	1	—	—	—	—	—	—	—	—	76	30	106	
61—70 ...	14	8	10	—	4	2	—	—	1	—	—	—	—	—	—	—	—	—	29	10	39	
71—80 ...	2	5	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	4	5	9	
81—90 ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
91 and over ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Racial Sex Totals ...	509	301	194	61	121	50	32	10	11	16	6	2	—	2	2	—	—	1	875	443	1,318	
Racial Totals ...	810		255		171		42		27		8		2		2		1		1,318		1,318	

22. *Vaccination.*—Since the last report the suggestion of the appointment of an Assistant Bacteriologist has been sanctioned, whose particular duty is to be the manufacturer of calf lymph. After the necessary alterations to the buildings at the calf depôt have been carried out, and apparatus for the manufacture of pure lymph on modern methods has been obtained, the percentage of successful vaccination should be much increased. The particulars regarding the vaccination carried out during the year are as follows:—During the year 246,624 subjects were vaccinated: 185,087 were primary vaccinations and 61,537 re-vaccinations. Of the former, 143,496 were successful, 24,887 unsuccessful, and in 16,704 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 85.22. Of the re-vaccinations, 27,081 were successful, 11,878 unsuccessful, and the result was not known in 22,578 cases, as the subjects failed to present themselves for inspection. The percentage of successful cases to total inspected was 69.51.

23. *Precautions against the Introduction of Plague.*—The Plague Committee held its regular meetings. Seven foreign ports were declared infected. The total number of vessels calling at Colombo was 2,774, of which 877 were allowed to work as “healthy in quarantine” and 15 were placed in strict quarantine for various infectious diseases. There was only one case of plague brought to Colombo during the year, from Bombay, and the patient was sent to Galle, where he died soon after arrival. A suspected case also arrived from Bombay, but after medical supervision for 24 hours it was declared not to be a case of plague. The cargo lighters were regularly and systematically fumigated to destroy the rats.

24. *Lunacy.*—The total number of patients treated in the Lunatic Asylum during the year was 783, which exceeded the number of any previous year; there were 104 deaths. In the House of Observation 246 persons were treated, of whom 10 died.

As mentioned in previous reports, the water service to this institution is very defective, but there is a proposal for its improvement, which is likely to be undertaken soon.

For further details in connection with this institution, please see the report of the Medical Superintendent attached.

SECTION III.—METEOROLOGICAL CONDITION AND THEIR RELATIONSHIP TO DISEASE.

25. Of all meteorological conditions, the rainfall has the greatest influence on the health of the people. Drought means hardship, agricultural pursuits are hindered, foods get scarce, wells run dry; with insufficient food and water low in the wells, bowel complaints are common; with insufficient rain the breeding places of mosquitoes are not washed out, mosquitoes therefore are left undisturbed, and a large amount of malaria is the result. The influence of the rainfall as a factor in increasing disease was very marked in Colombo during the year under review. There were long periods of drought, and the rainfall for the year was below the average. There was an unusual amount of sickness from serious disease in consequence. Similar meteorological conditions existed in 1906, which was a markedly unhealthy year. The incidence of malaria is determined by the monsoon rains. If the Island is roughly divided into western and eastern longitudinal halves, malarial fevers are commoner soon after the south-west monsoon in the western half of the Island, and after the north-east monsoon in the eastern half.

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

26. 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:—

27. *Colombo.*—The water supply has been improved since the erection of another reservoir on an elevated site in Colombo, but in the southern part of the city, and in houses of two storeys, the pressure is insufficient.

The collection of night soil and its disposal is unsatisfactory from a sanitary standpoint: the carting of night soil in carts through miles of streets is objectionable, and the burial of the night soil in open areas of ground immediately outside the town is to be condemned. But these means will be improved when 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, and the harbour section of the scheme is expected to be finished in 1909.

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.

The Municipality of Colombo has acquired land for an Infectious Diseases Hospital, but no work has been commenced.

Cesspits are being gradually closed, and polluted wells 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.

There were 4,001 registered births and 6,622 registered deaths in Colombo during 1908, or 25·5 and 36·87 per 1,000 annual birth- and death-rates, which show improvement in the birth-rate, but a great deal higher death-rate than in 1907.

28. 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 refuse of the town is burnt in pits, and the ashes are used as a deodorizer for the public latrines. The refuse is collected in a light drum and conveyed to a trenching ground. This work is carried out satisfactorily. Domes are registered, and certain infectious diseases are notified.

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

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

Scavenging and the Disposal of Refuse.—This service is indifferently carried out, except in some of the wards.

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. Extension of the system to Kaluwella, China Garden, Miravangoda, and Dangedara was introduced. 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 still further extended. In other parts of the town cesspits are used, and there is a good deal of surface pollution.

Drainage.—The Fort is well drained, the sewage is discharged into the sea. The drainage of a portion of Kaluwella was improved; other portions of the town are ill-drained. Mosquito-breeding areas exist, owing to extensive marshy land, grass and paddy fields. Funds to form a mosquito brigade were granted for 1908. There is not much overcrowding.

Domes, laundries, and bakeries are registered and inspected. A new public latrine was erected near the market.

Cases of smallpox and enteric fever occurred during 1908.

30. 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.

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 use either cesspits or pollute the surface of gardens, public grounds, or the side drains.

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 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.

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, burrow 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 extension of the night soil conservancy with proper burial, and the erection of public latrines in crowded localities.

31. Batticaloa: *Water Supply.*—This is obtained from wells, nearly all of which are open to pollution. A scheme for a good supply is under consideration.

Scavenging and Disposal of Refuse.—The scavenging is unsatisfactory, but was somewhat improved in 1908. 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 close 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.

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

32. *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 indifferent. There is overcrowding in the native quarter.

33. *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. A scheme has been adopted to provide the town with a good water supply.

34. *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.

35. *Ratnapura.*—The water supply is from wells, some of which are open to pollution. The supply is insufficient. The drainage is only fairly satisfactory. The scavenging is properly carried out. Public latrine accommodation is insufficient. A new public market is nearing completion.

SECTION V.—GENERAL.

36. *Medico-legal.*—During 1908 292 reports were completed, as against 285 in 1907, an increase of 2.45 per cent. In connection with these reports 769 samples were submitted. The total number of judicial cases was 221, involving the examination of 589 specimens. There were 97 cases in which some poison was concerned, and in 45 of these some poison was detected. A few cases of food-poisoning were sent. They appear to have been due to badly cured fish.

Articles sent in for examination as to the presence of blood, &c., numbered 223; in these blood was detected in 119 and seminal stains in 4. There was a very large decrease in the number of samples of opium and ganja, 47 productions only being submitted, as against 183 in 1907. Opium was present in 16 and ganja in 10. 65 samples of kerosine oil were tested under the Petroleum Ordinance.

37. *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 or of a new form—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. Operating rooms are being brought up to date. New hospitals are under construction at Moratuwa and Maskeliya, and new operating rooms at the General Hospital, Colombo, and at the Lying-in Home.

38. *Native Attendants.*—Male and female ward attendants are employed in the hospitals, who work under the directions of the nurses.

39. *Nursing in Ceylon Hospitals.*—The nursing in Ceylon hospitals is not entirely satisfactory. Some of the outstation hospitals have no nurses, while others are under-nursed.

The nursing staff consists of 17 European qualified matrons and sisters, 35 European Roman Catholic sisters (untrained), 28 matrons (trained locally), 30 nurses (trained locally), and 23 pupils in training.

The European matrons and sisters are distributed as follows:—One matron in the paying section of the General Hospital, Colombo, one matron in the Lady Havelock Hospital, one matron in the Kandy Hospital, one matron in the Victoria Memorial Eye Hospital, three sisters in Kandy Hospital, and ten sisters in the paying section of the General Hospital, Colombo.

The Roman Catholic sisters perform nursing duties in the general wards of the Colombo hospital and in the pauper hospital at Ragama and the Kurunegala hospital.

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

40. *Numbers treated.*—The total number of in-patients treated in all the hospitals and asylums for the year was 80,329, of whom 9,352 died, giving a death-rate per cent. of 11.64 of the hospital population; at the Government dispensaries 1,321,002 new cases were treated; the number of individual visits paid to the Government dispensaries was 1,902,715.

41. *Estate Dispensaries.*—The estate dispensaries are established by many of the planters, who supply the building and the apothecary, the Ceylon Government giving the drugs free.

42. During the year 1908 73 hospitals and asylums were in operation. There were 395 Government dispensaries (343 civil and 52 district) and 186 estate dispensaries.

43. *Surgical Operations.*—Excluding operations on the eye, of which there were 758 in the Eye Hospital, there were 2,838 operations in general surgery performed in all the hospitals, with 137 deaths.

44. *General Hospital, Colombo.*—The total number of patients treated at this institution during the year was 13,181 with 1,395 deaths, against 11,305 cases with 1,433 deaths in 1907. Of the total treated, 403 remained from the previous year and 12,778 were new admissions, 11,338 were discharged, and 448 remained at the end of the year. The daily average sick was 461·52, and the percentage of deaths to total treated was 10·58. The fly-proofing of operating rooms and latrines will be carried out in 1909. More nurses are required; at present there is no place to house them. The total number of patients treated in the paying wards during 1908 was 657 with 71 deaths, as against 582 cases with 46 deaths in 1907. Of the total treated, 27 remained from the previous year and 630 were new admissions, 552 were discharged, 71 died, and there remained 34 under treatment at the end of the year. The daily average sick was 36·90 as against 31·68 in 1907, and the percentage of deaths to total treated was 10·80 as against 7·90 in 1907.

The revenue from the paying section was Rs. 48,748·17 and the expenditure was Rs. 54,931·68, which includes the nurses, but not the medical staff, medicines, and surgical material (which is a large item), nor the upkeep of buildings. The scale of fees was raised from January 1, 1909.

45. *The Lunatic Asylum, Colombo.*—Please see remarks in paragraph 24.

46. *House 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 350 patients, which, with 19 remaining from the previous year, made a total of 369, of whom 166 were transferred to the asylum at Colombo, 174 were discharged, 13 died, and 16 remained at the end of the year.

47. *Leper Asylum, Hendala.*—Please see remarks in paragraph 16.

48. *De Soysa Lying-in Home.*—The total number of patients treated at this institution during the year was 1,074, as against 961 in 1907. Of these, 1,035 were discharged cured, 16 died, and 23 were remaining under treatment at the end of the year. The daily average sick was 25·64. The percentage of deaths to total treated was 1·48, as against ·93 in 1907.

In the Lying-in Home 44 pupil midwives received training in 1908, of whom 30 obtained certificates after passing a satisfactory examination and were sent out during the year. 150 obstetric operations were performed during the year.

49. *Lady Havelock Hospital.*—In this institution 913 in-patients were treated. The mortality rate was 9·96 per cent. The daily average sick was 30·69. Of the the total 913 patients, 303 were children. There were 43 operations performed. Of the operated cases 4 died.

The number of attendances at the female outdoor dispensary was 32,646. There were 6,273 children, 2,946 being boys and 3,327 girls.

50. *The Victoria Memorial Eye Hospital and Grenier Outdoor Infirmary.*—There were 675 in-patients admitted during the year, 35 of whom were paying patients. The average daily sick was 38·08. On several occasions every bed was occupied, and patients were kept waiting for admission. The expenditure was Rs. 11,114·58, and the receipts Rs. 3,939·44; the nett cost for the year was therefore Rs. 7,175·14. 5,787 out-patients were treated. The number of operations performed on in- and out-patients was 758.

It is with much regret I have to record the death of Dr. W. H. de Silva, M.B., F.R.C.S. Ed., who was the first officer in charge of this institution. He died in April, and was succeeded by Dr. Andreas Nell, M.R.C.S. Dr. de Silva was the principal mover in starting a separate eye hospital for the Island, and it was owing to his energy, tact, perseverance, and charm of manner that the public responded so generously to the appeal for funds to establish this institution as a memorial to the late Queen; the labour he bestowed on this hospital is appreciated by the thousands who flock to it yearly.

51. *Police Hospital, Colombo.*—508 patients were treated in the police hospital, of whom 1 died. The daily average sick was 8·57.

52. *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 523, as against 470 in 1907. 19 cases remained at the end of 1907, thus making a total of 545 cases treated during the year. Of these, 525 cases were discharged, 1 died, and 19 remained at the end of 1908. Of the total number treated, 13 were for primary syphilis, 163 for secondary syphilis, 111 for tertiary syphilis, 250 for gonorrhœa, 1 for bubo, and 7 for other diseases.

53. *Jail Hospitals and Sick Prisoners.*—The number of prisoners admitted to the different jails in the Island during 1908 was 15,247. The average daily strength of prisoners was 3,371·97. The number treated in the jail hospitals during the year was 5,667, as against 5,617 in 1907. The total deaths numbered 205, against 113 in 1907.

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 Daily Strength of Prisoners.	Death-rate per cent. to Admissions.	Death-rate per 1,000 of Average Strength.
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
1908	5,667	205	3,371·97	3·61	60·79

There was a very marked increase in the number of deaths and in the death-rate per 1,000 of average strength; the period dates from an alteration in diet. There can be no doubt that before March of 1908 prisoners with over a month's sentence obtained too liberal a diet. In that month penal No. 1 diet was ordered for all prisoners for the first month of their sentence, and penal No. 2 diet for the second and third months. Penal No. 1 diet consists of 16 ounces of bread and 2 ounces of rice only. Bread is a staple of food to which the natives of this country are unaccustomed, and there were a great many admissions to the sick list for gastro-intestinal diseases and a serious increase in the death-rate. On my recommendation a modification of this diet was authorized in December, 1908, and prisoners with over

a month's sentence were given penal No. 2 diet, which consists of 8 oz. bread, 12 oz. rice, 4 oz. fish, 3 oz. plantains, jaggery, and pepper broth. The sick- and death-rates have improved since.

54. *Kanatta Infectious Diseases Hospital.*—There were 1,739 cases of infectious diseases treated at this institution during 1908, as against 855 cases during 1907. The average daily sick was 62·74. The diseases included smallpox 608 cases, enteric fever 150, cholera 14, acute diarrhoea 41, diphtheria 1, and the remainder were diseases of a mild infectious nature.

New temporary wards for Moorish women, paying patients, were erected during the year.

55. *Victoria Home for Incurables, Colombo.*—At this institution 67 cases remained at the end of last year, which, with 10 cases admitted during 1908, made a total of 77. Of these, 13 died, 4 were discharged, and 60 remained at the end of 1908.

56. *Bacteriological Institute.*—The total number of specimens examined during the year was 2,342, being 402 in excess of last year. The fees represented Rs. 839·50.

57. *Total Deaths.*—The total deaths numbered 9,352, against 9,856 in 1907, showing a decrease of 504. A table showing the death-rate per cent. in the various hospitals and asylums in the Island for the year as compared with last year is annexed; the death-rates among the mixed races and Malabars have been shown separately:—

Hospitals.	Mixed Races.		Malabars.		Total.	
	1907.	1908.	1907.	1908.	1907.	1908.
Civil	8·11	7·87	20·10	18·41	11·28	10·47
Field	4·52	4·77	15·21	13·55	6·46	6·29
Immigrant	4·39	4·32	8·94	6·12	5·39	4·74
District	6·43	6·44	25·56	21·59	22·14	16·64
Asylums	9·62	15·66	7·97	7·36	9·44	14·87
Other Hospitals	—	7·71	—	9·64	—	7·98
	<u>7·58</u>	<u>7·68</u>	<u>22·34</u>	<u>19·41</u>	<u>12·98</u>	<u>11·64</u>

58. *Hospital Accommodation.*—This was generally sufficient. Overcrowding took place in some of the hospitals of the planting districts.

With the exception of the following institutions: Matale, Jaffna, Dambulla, Mannar, Pattalam, 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. All hospitals are provided with separate bathrooms for males and females and furnished with tubs or douches. Patients who can help themselves prefer to bathe in streams when there are such adjoining a hospital.

The drains are surface ones for carrying away ward washings and storm water.

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.

59. *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.

60. *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.

61. *Dispensaries.*—581 dispensaries, including branch institutions and visiting stations, were in operation. Of these, 343 were civil, 52 district, and 186 estate. They are distributed as follows:—In the Western Province 42, Central 62, Northern 50, Southern 48, Eastern 43, North-Western 46, North-Central 38, Province of Uva 34, and Province of Sabaragamuwa 32, and on estates 186. In the civil and district dispensaries there were treated 1,321,002 persons who paid 1,902,715 visits, against 1,267,748 persons who paid 1,706,460 visits in 1907.

62. *Port Duties and Immigration.* The number of vessels which arrived at the port of Colombo was 3,202, against 3,274 in 1907. 877 vessels were "healthy" working in quarantine, 15 vessels were in strict quarantine. The number of native passengers who arrived in Colombo during 1908 was 88,762 miscellaneous deck passengers and 88,788 estate coolies. Of these totals, 17,166 were vaccinated on arrival.

63. The port of Kayts in the Northern Province was opened to passenger traffic on March 1, 1907, and was closed to passengers on May 31, 1908. 676 vessels were inspected during the year; the number of passengers landed was 2,608; 57 vessels arrived from cholera-infected ports, 10 from smallpox-infected ports, and 4 from plague-infected ports.

64. *Ragama Camp.*—The number of coolies, passengers, and others who passed through the camp during 1908 was 89,751, against 56,294 in 1907. 31,619 coolies were vaccinated. 30 patients were admitted during the year to the camp hospital, of which 9 were suffering from cholera. The sanitation of the camp was satisfactory; the water supply is of good quality and in sufficient quantity. The night soil was incinerated.

65. *Medical College.*—The College contains lecture hall, students' library, laboratories for chemistry, physiology, biology, and pathology, a dissecting room, offices, photographic rooms, a museum, the Colonial Medical Library, and a separate building for lady students containing sitting-room and a dissecting room. 118 medical students, 36 apothecary students, and 1 science student, equal to a total of 155, were on the roll at the end of the year, an increase of 22 over the number in 1907.

16 students passed the qualifying examinations for medical men, and 10 gained the certificate of apothecary. One student passed the preliminary scientific examination, Part II., of the University of London. The fees collected and paid into revenue were Rs. 24,361·76, an increase of nearly Rs. 4,000 over the amount paid in 1907.

Dr. Chalmers, the Registrar, was on leave of absence from May 25, and from that date Professor W. S. Templeton performed the duties of Registrar with great acceptance. Dr. Garvin retired from the chair of Surgery, and was succeeded by Dr. S. C. Paul, F.R.C.S.; Dr. A. M. de Silva, F.R.C.S., succeeded Dr. Paul as lecturer in Clinical Surgery; Dr. Grenier, M.D. Ed., was appointed lecturer in Medicine, *vice* Dr. H. M. Fernando, M.D. London, resigned; Dr. David Rockwood was appointed lecturer in Materia Medica, *vice* Dr. W. H. de Silva, deceased; Dr. Andreas Nell, lecturer in Ophthalmology, *vice* Dr. W. H. de Silva, deceased; Professor Templeton, lecturer in Skiagraphy and Medical Electricity; Dr. S. T. Gunasekera, acting lecturer in Anatomy; Dr. John Rockwood, demonstrator in Anatomy; Dr. Pestonjee, lecturer in Clinical Medicine, resigned on promotion.

A new set of regulations regarding apothecary students was passed by the Medical Council and submitted to Government for approval. The number of students entering the College has quite outgrown the accommodation, and extra buildings are urgently required.

Post-graduate Lectures.—For the sixth 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.

66. *The Medical Council.*—The Council has had a large amount of work to perform during the year. It has met nearly every week and during the vacations. The number of applicants for registration who were registered was 401, and the number rejected was 151. The total number of applications considered was 566. The pressure on the Registrar and staff was so great that all had to work beyond office hours.

67. *Civil Medical Stores.*—Mr. A. D. Cotton was appointed Superintendent and Chief Medical Storekeeper. The cost of the drugs, chemicals, and instruments received amounted to Rs. 244,215·78, the cost of repairing surgical instruments to Rs. 99, the cost of transport to Rs. 5,910·71, and miscellaneous to Rs. 662·38. The sale of medicines to Government Departments and others realized Rs. 3,505·69, and sale of medicines to planters Rs. 1,267·97. The sale of unserviceable articles realized Rs. 549·92, and the value of surgical instruments sold, lost, and paid for by officers of the Department amounted to Rs. 817·11.

68. *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 Government Analyst, 9 Provincial Surgeons, 1 Superintendent, General Hospital, Colombo, 1 Superintendent, Lunatic Asylum, 3 Medical Women, 29 Medical Officers First Grade, 35 Medical Officers Second Grade, 60 Medical Officers, Third Grade, 6 Health Officers, 237 Apothecaries, 1 Chief Storekeeper, 1 Chief Inspector of Vaccination, 8 Inspectors of Vaccination, and 130 Vaccinators.

Changes in the Department.—Mr. F. G. Morley, late Accountant of the Land Department and Member of the Land Board of the Transvaal, was appointed Accountant of the Civil Medical Department of Ceylon on January 10, 1908. Dr. J. B. Spence, M.B., returned from leave and resumed duty as Medical Superintendent, Lunatic Asylum, relieving Dr. L. A. Prins, L.R.C.P. & S. (Edin.); the latter reverted as Medical Officer, Galle hospital. Dr. T. F. Garvin, M.B., C.M., Surgeon in charge, General Hospital, Colombo, retired on August 26, 1908, after a service of 33 years under Government, and Dr. G. Thornton, M.D., Superintendent, Pretoria hospital, was appointed Medical Superintendent, General Hospital, Colombo, on November 19, 1908. Dr. R. Pestonjee, Medical Officer First Grade, was promoted to the grade of a Provincial Surgeon and appointed Medical Superintendent, Leper Asylum, Hendala, on January 1, 1909. Dr. O. Johnson, Provincial Surgeon, North-Western Province, went on leave on September 11, 1908, and Dr. H. Huybertsz, Medical Officer First Grade, was promoted Acting Provincial Surgeon and posted for duty to the North-Central Province. Dr. C. B. Lourensz, Provincial Surgeon, North-Central Province, was transferred to the North-Western Province. Dr. S. Hallock, Medical Officer First Grade, retired on May 1, 1908, after a service of 32 years. Dr. F. Grenier, Medical Officer First Grade, returned from leave from England and took up duties as Second Physician, General Hospital, Colombo. Dr. W. C. Peries, Medical Officer Second Grade, was promoted as Acting Medical Officer First Grade. Dr. S. C. Paul, Second Surgeon, General Hospital, Colombo, was promoted First Surgeon. Dr. A. E. Spaar, Medical Officer Second Grade, returned from leave from England and took up duties as Medical Officer, Kurunegala hospital. Dr. H. B. Mylvaganam, Medical Officer Second Grade, resigned. Dr. C. H. Scharenguivel, Acting Medical Officer Second Grade, was confirmed as Medical Officer Second Grade. Dr. A. M. de Silva, Lecturer in Anatomy, Medical College, was promoted as a Medical Officer Second Grade, and appointed Second Surgeon, General Hospital, Colombo. Dr. C. J. Tillockeraine, Medical Officer Third Grade, returned from leave from England, and was promoted as Acting Medical Officer Second Grade. Dr. R. H. Phillips, Medical Officer Third Grade, resigned. Dr. E. R. Loos, Medical Officer Third Grade, was transferred to the Colombo Municipality as Assistant Medical Officer of Health. Drs. D. M. Aryaratne and J. B. A. Raux, Medical Officers Third Grade, died.

69. *Expenditure.*—The expenditure of the Department under votes, exclusive of expenditure under the Medical Aid Ordinance, amounted to Rs. 1,813,285·94, against Rs. 1,865,500·29 in the previous year. Under Personal Emoluments the expenditure was Rs. 700,990·73, against Rs. 658,031·36 in the previous year. The expenditure under Other Charges was Rs. 1,102,425·28, against Rs. 1,206,125·51 in the previous year. Under Harbour Service Rs. 720, against Rs. 1,659·59; and under the votes for Plague Precautions Rs. 9,149·93, against Rs. 6,303·83 in 1907. The receipts on account of paying patients in hospitals amounted to Rs. 72,976·92, against Rs. 52,688·90 in 1907. The collections at the civil outdoor dispensaries were Rs. 25,319·53, against Rs. 20,534·55 in 1907. The cost of medicines issued to the Estates Branch of the Department amounted to Rs. 135,805·05, against Rs. 128,642·50 in 1907; while the sale of medicines and superfluous articles, Medical College Branch, amounted to Rs. 59,441·05, against Rs. 58,417·87 in 1907. Deducting the receipts under the above specified from the expenditure, the net expenditure was Rs. 1,512,826·38, against

Rs. 1,606,414.47 in 1907. The following statement shows the expenditure and receipts as compared with 1907:—

<i>Expenditure.</i>	1907.		1908.		Increase or Decrease.	
	Rs.	c.	Rs.	c.	Rs.	c.
Personal Emoluments ..	658,031	36	700,990	73	42,959	37 (Increase)
Other Charges ..	106,207	42	85,458	84	20,748	58 (Decrease)
Hospitals and Dispensaries ..	810,564	31	1,016,966	44	76,951	65 (Decrease)
	264,657	22				
	18,696	56				
Total ..	1,200,125	51	1,102,425	28	97,700	23 (Decrease)
Harbour Service (Port and Marine) ..	1,039	59	720	0	319	59 (Decrease)
Plague Precautions ..	6,303	83	9,149	93	2,846	10 (Increase)
Total ..	7,343	42	9,869	93	2,526	51 (Increase)
Grand Total ..	1,865,500	29	1,813,285	94	52,214	35 (Decrease)
<i>Receipts.</i>						
Amounts due by paying patients in hospitals ..	52,088	90	72,976	92	—	—
Collections at dispensaries ..	20,534	55	25,319	53	—	—
Cost of medicines issued to Estates Branch institutions	128,044	50	135,805	5	—	—
Sale of medicines and superfluous articles, College fees, and bills of health ..	58,417	87	59,441	5	—	—
Lunatic Asylum paying patients ..	—	—	6,917	1	—	—
Total ..	259,085	82	300,459	56	—	—
Nett Expenditure ..	1,606,414	47	1,512,826	38	93,588	9 (Decrease)

ESTATES BRANCH.

70. During the year 1908 there were 1,994 estates scheduled to 33 districts and 29 sub-districts, with 21 district hospitals and 29 dispensaries and 14 civil hospitals and dispensaries.

71. The following are the districts and sub-districts with the number of estates scheduled to each:—Avisawella District 49, sub-district Hanwella 15, sub-district Bandaragama 25, sub-district Ragama 1, sub-district Parakaduwa 15; Kalutara District 49, sub-district Horawela 17; Kandy District 68, sub-district Galagedera 11, sub-district Kadugannawa 19, sub-district Hangurankota 5; Elkaduwa District 20, sub-district Wattedagama 34; Kellebokka District 40; Dikoya District 61, sub-district Bogawantalawa 28, sub-district Watawala 39; Maskeliya District 66; Gampola District 60, sub-district Pussellawa 36; Lindula District 54, sub-district Agrapatna 43; Dimbula District 52; Matale District 101, sub-district Rattota 34, sub-district Gammaduwa 21; Teldeniya District 31, sub-district Rangalla 28; Deltota District 44; 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 62; Dolosbage District 34; Kotmale District 19; Morawak Korale District 26; Balapitiya District 28; Udugama District 19; Badulla District 54, sub-district Namunakula 22, sub-district Passara 10; Lunugala District 25, sub-district Madulsima 29; Monaragala District 12; Haputale District 19, sub-district Bandarawela 9, sub-district Haldumnulla 25, sub-district Koslanda 29; Kurunegala District 60, sub-district Rambukkana 6; Ratnapura District 31; Balangoda District 45; Rakwana District 26; Kegalla District 50; Karawanella District 89, sub-district Kitulgala 23, sub-district Aranayaka 16, sub-district Bulatkohupitiya 7, sub-district Nelundeniya 6.

72. To attend to the medical wants of the above the following were employed:—Medical Officers Second Grade 15; Medical Officers Third Grade 14; and Apothecaries 62.

73. During 1908 there were 17,091 estate labourers treated in the district hospitals and civil constituted district hospitals, against 15,590 in 1907. Of these, 3,627 died, a death-rate of 21.22 per cent. Of the mixed races 30,568 were treated, of whom 2,447 died, a death-rate of 8.00 per cent.

74. In the civil hospitals worked partly as district hospitals the death-rate of estate labourers was 26.32 per cent., whilst in the district hospitals it was 21.75 per cent. The highest death-rate (33.09) among the estate labourers occurred in the district hospital at Ratnapura, and the lowest (5.26 per cent.) in the Civil Hospital at Colombo. The admissions into the former were 831, into the latter 19.

75. The total number of days the estate labourers stayed in hospital was 404,579, an average of 23.67 days each. Of these, 304,337 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 350,334, an average of 11.13 days.

76. The total number of estate labourers treated at the outdoor dispensaries was 70,605. The total number of estate labourers treated on estates was 34,169.

77. The total number of births reported from estates was 16,180, of which 8,084 were males, 7,529 were females, and 507 were stillbirths.

78. The number of deaths reported from estates was 12,636, of whom 6,149 were males, 6,474 were females, and in 13 cases the sex was not stated.

79. *Medical Aid.*—The expenditure under the Medical Aid Ordinance amounted to Rs. 621,386.66 and the receipts to Rs. 375,926.15, leaving a deficit of Rs. 255,460.51.

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

dug for the draining of collections of water. Oiling the surface of large pools has been carried out in some instances.

The lines on which improved sanitation has proceeded have been confined to minor works; no large works on an expensive scale have been attempted, but His Excellency the Governor has included a large sum for such works in his future programme.

In May I submitted a letter to the Hon. the Colonial Secretary recommending the establishment of "mosquito brigades" in the following terms:—

With reference to the subject of malaria prevention and the extermination of mosquitoes, I have the honour to suggest that the Chairmen of the several Municipalities, Local Boards, &c., be communicated with, with the object of establishing "mosquito brigades" for the various towns.

The mosquito brigade consists of a head overseer and as many subordinates as are necessary for the work; the pay should be generous. It is necessary that the overseer be a man of high character and respectability, and that the whole "brigade" is honest and of good character. Its duty is to go into the compound of every house and collect all broken bottles, tins, broken flower pots, coconut shells, &c., and anything likely to contain water in which mosquitoes can breed; to look for the larvæ of mosquitoes in tanks, wells, cisterns, in the ends of bottles placed on dividing walls, &c., and to remove everything that is of no value and deposit it where hollows require filling up.

The "brigade" should, in addition to the above, empty all small collections of water, by the free use of a broom, and fill up the small hollows with earth or gravel.

Wells should be protected by a mosquito-proof cover with a wire gauze grating for the bucket.

The edges of streams and tanks near or in a town to be kept free from sedges and grass, and all rank vegetation which harbours mosquitoes should be cleared.

In Sierra Leone it was found that a gang of six men with one large mule cart were able to clear fifty houses daily and to remove ten cartloads of broken material and rubbish, *i.e.*, one cartload for every five houses. The medical officer in most of the towns is able to train the brigade as to their duties, and to point out the distinguishing features of the *culex* and *anopheles* mosquitoes and their larvæ and their likely breeding grounds.

This letter was sent by the Government to the Chairmen of each Local Board. Of the 24 replies, I regret to say that only three—Colombo, Galle, and Negombo—have promised to take any serious action towards exterminating mosquitoes. The reasons given by the others fall under two heads: (a) The Boards do not consider any action necessary, and (b) that no funds are available.

In my report to Government on these replies it was suggested that the extermination of the malarial mosquito in towns and villages should be made compulsory by law; subsequently I was directed to frame some draft regulations on the matter, which have been submitted for consideration.

The employment of prisoners where they are available for the carrying out of works for the extermination of the breeding places of the malarial mosquito has been suggested.

6. (c) *Quinine as a Prophylactic.*—Apothecaries, headmen, and others have been employed in distributing quinine *gratis* in all parts of the Island, and large quantities of the drug have been expended. Returns as to the amount expended by each distributor have not been called for on the ground put forward by Professor Ronald Ross that "detailed returns cause much trouble, which will result only in decrease of the issue." No records have been kept as to the incidence of the disease in those undergoing protective treatment by quinine and those who did not take the prophylactic. The compulsory preventive treatment by quinine has been carried out in the schools and jails in malarious districts, with marked success. The sick-rate from malaria has been very low in the prisons, and the regular attendance of children in schools has not been seriously interrupted by outbreaks of malaria among them.

7. The amount of quinine issued for all purposes from the Medical Stores was 71,456 ounces.

8. Acting on the suggestion of Professor Ronald Ross in his "Report on the Prevention of Malaria in Mauritius," orders were issued for a spleen census to be taken towards the end of 1908.

The subjects examined were the children in schools and young persons and children attending the dispensaries. As this is the first occasion on which such an inquiry has been made here, and some of the observers may not be quite familiar with enlarged spleens, and particularly into what category the enlargement should be put, and on account of the few number examined considering the population, some allowance for inaccuracy must be given to the figures and to the deductions drawn from them, but the results give an indication as to the amount of malaria in Ceylon. The total estimated population of children under 15 years of age for the Island at the end of 1908 was 1,622,766; of this number, 92,258 were examined, and enlargement of the spleen was reported to be present in 31,421, a percentage of 34.05 as the "spleen rate." There was no "enlargement" in 60,837. The "average spleen" works out at 2.14 for Ceylon children. The statistical errors in the above calculations have not been estimated.

The accompanying table gives the numbers examined, the total enlarged spleens, the sizes of enlargement, the spleen rate, and average spleen by Provinces; and the figures support the observations that have been made for years as to those Provinces which have always borne a reputation for a large amount of malaria:—

Province.	No. Examined.	Total Enlargement.	Enlargement of Spleen.			Spleen Rate.	Average Spleen.
			Small.	Medium.	Great.		
Northern	11,371	4,538	2,567	1,194	777	39.91	2.52
Southern	15,022	2,847	1,794	600	453	18.95	1.67
Eastern	6,476	2,266	1,449	572	245	34.99	2.19
North-Western	17,024	9,064	4,675	2,975	1,414	53.25	3.08
North-Central	5,987	3,215	1,491	1,100	624	63.20	3.64
Uva	5,177	2,291	1,088	686	517	44.25	2.88
Southern Uva	7,154	2,046	1,049	527	470	28.60	2.18
Central	14,362	2,804	1,631	817	356	19.52	1.70
Western	10,585	2,350	1,867	417	66	22.20	1.59
Total	92,258	31,421	17,611	8,888	4,922	34.05	2.20

II.—REPORT ON THE LUNATIC ASYLUM FOR 1908.

ASYLUM.

At the beginning of the year 549 patients (349 males, 200 females) remained. During 1908 the number admitted was 234 (154 males, 80 females). The total number treated was 783 (503 males, 280 females). 112 patients (77 males, 35 females) were discharged, and 104 (67 males, 37 females) died. The number remaining at the end of the year was therefore 567 (359 males, 208 females), an increase of 18 (10 males, 8 females) during its course. The average daily number resident was 558.19 (males 352.20, females 205.98), an increase of 25.20 (males 17.40, females 7.79) as compared with the number in 1907.

The largest number of males resident on any one day was 364, of females 213, and the largest total number 572. These numbers are higher than the corresponding numbers in 1907 by 13, 6, and 19 respectively. The lowest numbers during the year were: males 335, females 197, both together 541. The minimum total represents an increase of 31 over the number for 1907.

HOUSE OF OBSERVATION.

At the beginning of 1908 there were 15 persons (10 men, 5 women) in the house of observation. During the year 231 persons (172 males, 59 females) were admitted to it, making the total treated 246 (182 males, 64 females).

The number of cases as distinguished from persons was 398 (279 males, 119 females). In most of the cases the re-admissions were due to a technicality, a person taken to court and brought back having to be reckoned as discharged and re-admitted.

The number of patients transferred from the house of observation to the asylum was 117 (75 males, 42 females). The number discharged without passing into the asylum was 110 (96 males, 14 females), *i.e.*, about half the cases sent to the house of observation were not so insane as to need asylum treatment. The total number discharged was thus 227 (171 males, 56 females). 10 persons (7 males, 3 females) died. The number remaining at the end of 1908 was therefore 9 (4 males, 5 females). The daily average number resident was 13.87 (males 9.67, females 4.19). The maximum number of males simultaneously resident was 16, that of females 10, and the total maximum 25. The minimum numbers were: males 3, female 1, both together 4.

In the house of observation, as in the asylum, the numbers tend steadily upwards. The following table shows the combined numbers for the whole institution:—

			Males.		Females.		Total.
Remained	..	..	359	..	205	..	564
Admitted ..	..	..	251	..	97	..	348
		Total treated	610		302		912
Discharged	..	..	173	..	49	..	222
Died ..	..	..	74	..	40	..	114
Remaining	..	..	363	..	213	..	576
Increase in 1908	..	..	5	..	8	..	13

The increase is not great, but its smallness is mainly due to exceptional circumstances, which will afterwards be referred to. The average daily number of residents in the institution was: males 361.87, females 210.17, both together 572.06.

The maximum number of males resident at one time in the asylum and house of observation taken together was 376, that of females 219, and of both together 584.

ADMISSIONS.

The number of admissions to the asylum exceeded that of any previous year by 46, the increase in the number of males admitted being 34 and of females 12. The total 234 is a very large number in relation to the average daily population of the asylum (558.19), but when the whole institution is taken into account, the admission-rate (348) is seen to be enormous in relation to the average daily number (572.06). Not only has each of these cases to be examined carefully on admission, but very many of them have to be reported on in court—some of these at Panadure or Kalutara—and this involves much loss of time on the part of the medical staff. As long as the system of combining the house of observation with the asylum persists, the strain is likely to increase rather than to diminish.

The character of the mental affections present in those admitted was very much as usual. In Ceylon the types of insanity are fewer and less clearly differentiated than they are in Western countries generally. Of the admissions to the asylum, 137 (80 males, 57 females) were classed under mania; 54 (37 males, 17 females) under melancholia; 7 (6 males, 1 female) under dementia; 4 (2 males, 2 females) under idiocy or imbecility; 1 male under general paralysis of the insane; 8 (6 males, 2 females) under epileptic insanity; 1 male under delusional insanity; and 22 (21 males, 1 female) as "apparently not insane."

DISCHARGES.

The number of patients discharged was with one exception (*i.e.*, in 1906) the highest on record, both in males and females. The results as regards recovery are not so good as those of some previous years, and the proportion of "not improved" cases seems very high; but that is accounted for chiefly by the undue proportion of "not insane" persons admitted, and partly also by the transfer to Madras of certain chronic cases.

The ratio per cent. of recoveries to admissions was 22·07 in males, 28·75 in females, 25·21 in both together; to the total number treated the ratios were: in males 6·75 per cent., in females 8·21 per cent., in both 7·27 per cent.

The discharges from the house of observation do not call for special remark; some of them (an unduly small proportion as I have already said) were transfers to the asylum, the rest were persons who did not appear to be so insane as to need to be detained in the asylum or for whom provision was made elsewhere.

DEATHS.

The death-rate was high, the total number of deaths being the highest on record, though the ratio per cent. to the whole number of patients treated and to the average daily number has been exceeded. To the total number the ratios were: in males 13·32 per cent., in females 13·21 per cent., in both 13·28 per cent.; to the average daily number: in males 19·02 per cent., in females 17·96 per cent., and in both 18·63 per cent. The causes of death have been detailed elsewhere; they were for the most part of the usual type, but in three cases choleraic diarrhoea proved fatal here, and that affliction was the cause of death in 9 other cases, which had been transferred on that account to the Infectious Diseases Hospital. One of these was an attendant who had long been in charge of the male infirmary ward. Some sporadic cases of smallpox occurred during November, and were sent to the Kanatta hospital. Of these 1 died.

The only death from injury received in the asylum occurred in the case of a suicidal patient, who succeeded in stealing a knife from the pocket of an attendant's coat. He inflicted a rather severe wound on his throat with the knife, but that was not immediately fatal, and his death was contributed to by brain disease and tubercular disease of the lung.

The number of deaths in the house of observation (10: 7 males, 3 females) was unusually high. One was a case of general paralysis of the insane, who died a few days after he was brought here; most of the others were greatly debilitated before their admission.

ADMINISTRATION.

The year under review was probably the worst in the history of the institution; the death-rate was high, the recovery-rate low, and the occurrence of several forms of epidemic disease, one after another, added considerably to the difficulties which had to be faced.

In June a number of cases of choleraic diarrhoea occurred. I still entertain a doubt as to their being cases of true Asiatic cholera, but whatever it was, the malady was about as rapid in its course, and about as deadly as cholera, and the symptoms were very similar. No adequate explanation of its occurrence has been found, and it did not appear to be communicated by contact in the ordinary way; in many instances the victims were just the persons who appeared to be most completely isolated. A suggestion to the effect that poisoning by dried fish might be the cause led to the discontinuance of that article of diet, although the theory did not completely explain the facts. The prohibition of dried fish was decidedly unpopular, especially among the attendants, of whom a certain number were rather panic-stricken already. A few male attendants deserted their posts, but I am glad to say the majority proved faithful, and I consider the staff as a whole deserving of much praise for their conduct in a very trying time. In compliance with a general desire expressed by the attendants a religious ceremony was performed, and whatever effect it may have had on subsequent events (a point on which opinions are likely to differ), I believe it did much to restore courage to the faint-hearted. Apart from belief in its efficacy as an instrument, its picturesqueness and solemnity impressed the imagination powerfully.

Almost equally difficult to explain was the occurrence of smallpox in a few patients. I am glad to say the disease never became really epidemic. In this case also the persons affected seemed precisely the most unlikely, and the first victims were a man and a woman occupying parts of the building about as far apart as possible, both isolated as completely as any one could well be. Here also the transmission of the disease was apparently not by direct contact. Cases occurred singly or by two together in different and widely separated wards; the other occupants of the ward, although in close and continual contact with them, escaping entirely. Almost the only case probably due to direct contact was that of a nurse who had been re-vaccinated (unsuccessfully) shortly before. Fortunately her case was an extremely slight one. These and other facts connected with outbreaks of diseases usually regarded as epidemic suggest doubts as to the efficacy of quarantine as a preventive, and as to the accuracy of some existing theories of transmission of such diseases.

EXPENDITURE.

I regret to report that the amount voted under most of the different heads proved insufficient. Under "Wages" there was a considerable credit balance, but most of this saving was only apparent, and was due to a change in the method of accounting, charges formerly paid from the Wages vote being transferred to the vote for Contingencies, under which there is a rather large deficit. The unusual death-rate led to an over-expenditure under the heading "Funeral Expenses"; the increased number of patients and the added cost of food stuffs, due to the discontinuance of dried fish and the substitution for it of articles of diet costing much more, have led to a considerable deficit under "Diets and Extras." I believe the abandonment of the use of dried fish has been beneficial to the general health of the inmates, and that therefore the increased cost is justified.

No important addition to the building has been made during the year, and even on upkeep little has been spent. In the near future a rather large expenditure on painting and on locks and other fittings will be required.

INDUSTRIAL DEPARTMENT.

owing to a recent decision that certain of its revenues must be credited to Government, the Industrial Department is financially a moribund institution, and its extinction seems to be merely a matter of time. The accounts have already been submitted. They show that while the amount invested in Ceylon Stock (Rs. 13,020·85) remains the same, the amount of the fixed deposit in bank has increased from Rs. 3,610 to Rs. 4,006, while the sum at current account has fallen from Rs. 3,730·28 to Rs. 668·61, and the cash in hand from Rs. 95·85 to Rs. 57·01.

The erection of a wire fence round the greater part of the ground of the Department accounts for the large expenditure and consequent reduction of the sum at current account.

STAFF.

The changes in the staff have been very numerous. I was absent on leave during the first three months of the year, and Dr. L. A. Prins continued to act in my place. I desire to express here my sense of obligation to him, and my very high appreciation of the care, ability, and success of his administration. As regards the junior medical staff, Mr. V. A. Goonetilleke was replaced in July by Mr. J. B. A. Raux, who died in August, and whose loss I greatly deplore. He was succeeded by Mr. W. Wijegoonewardena, M.R.C.S. Many members of the staff were incapacitated by illness for duty for longer or shorter periods.

In trying circumstances the majority of the staff worked very well indeed, and I wish specially to acknowledge their services.

In conclusion, I desire also to acknowledge with gratitude the kindness shown me and the assistance given me by the official visitors of the asylum.

J. B. SPENCE,
Medical Superintendent.

III.—REPORT ON THE LEPER ASYLUM, HENDALA.

In submitting my annual report I have the honour to remark that as I relieved Dr. Heynsbergh on January 1, 1909, I am not in a position to make a detailed report, except to give bare statistics as regards the admission and discharge of patients. I have barely had time to look into the internal administration of the asylum to enable me to judge what are the immediate requirements for its improvement.

1.—STATISTICS.

The general statistics of the year are as follows:—

	Males.	Females.	Total.
Remained on January 1, 1908 ..	238	82	320
Admitted during the year ..	132	27	159
Total treated ..	370	109	479
Discharged ..	76	16	92
Died ..	51	11	62
Remaining on December 31, 1908 ..	243	82	325

The total number admitted was 159, 11 more than the previous year. The largest number resident was 350, the lowest 319, and the daily average was 246·47 males and 86·46 females, total 332·93. The number of beds available for males 280, females 102, total 382. There was no overcrowding.

Admissions.—The number admitted was 159 (132 males and 27 females); 102 were new admissions and 57 re-admissions. Of the former, 17 were of tubercular, 50 of anæsthetic, and 35 of the mixed form of leprosy. The Western Province, including Colombo and Colombo District, contributed the largest number of admissions, viz., 54, Southern Province 24, Province of Uva 3, Province of Sabaragamuwa 3, Central Province 6, North-Western Province 1, and Southern India 11. Of the admissions, the number of new cases was 18 more than the previous year.

Discharges.—92 were discharged, 6 of whom were allowed home isolation, 4 were discharged under special circumstances by the authority of the Principal Civil Medical Officer, 37 were given temporary leave sanctioned by Government, 12 were sent to India, and 33 absconded, of whom 4 are still at large.

Deaths.—There were 62 deaths during the year, the percentage to total treated being 12·94, a decrease on the death-rate of 1·25, the mortality being, as usual, due to exhaustion.

2.—ADMINISTRATION.

There were no changes in the administration of the asylum; the staff remained the same as in the previous year.

3.—WATER SUPPLY, &c.

The water supply, dietary, and sanitation were satisfactory.

4.—GARDEN FUND.

	Rs.	c.
Balance on January 1, 1908 ..	217	17
Receipts from garden during the year ..	1,379	50½
Government allowance due for December, 1907 ..	75	57
Interest on Rs. 3,470·58 in fixed deposit ..	121	0
Total ..	1,793	24½
Expenditure on betel, &c. ..	1,850	86
Deficit ..	57	61½

The editors of the various newspapers in Colombo have kindly continued to forward copies of their respective issues of their papers free of charge: on behalf of the inmates of the asylum I desire to thank the kind donors. Also to the number of general public for many gifts made during the year.

R. PESTONJEE,
Superintendent.

