

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

## **Contributors**

Ceylon. Civil Medical Department.

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MEDICAL.

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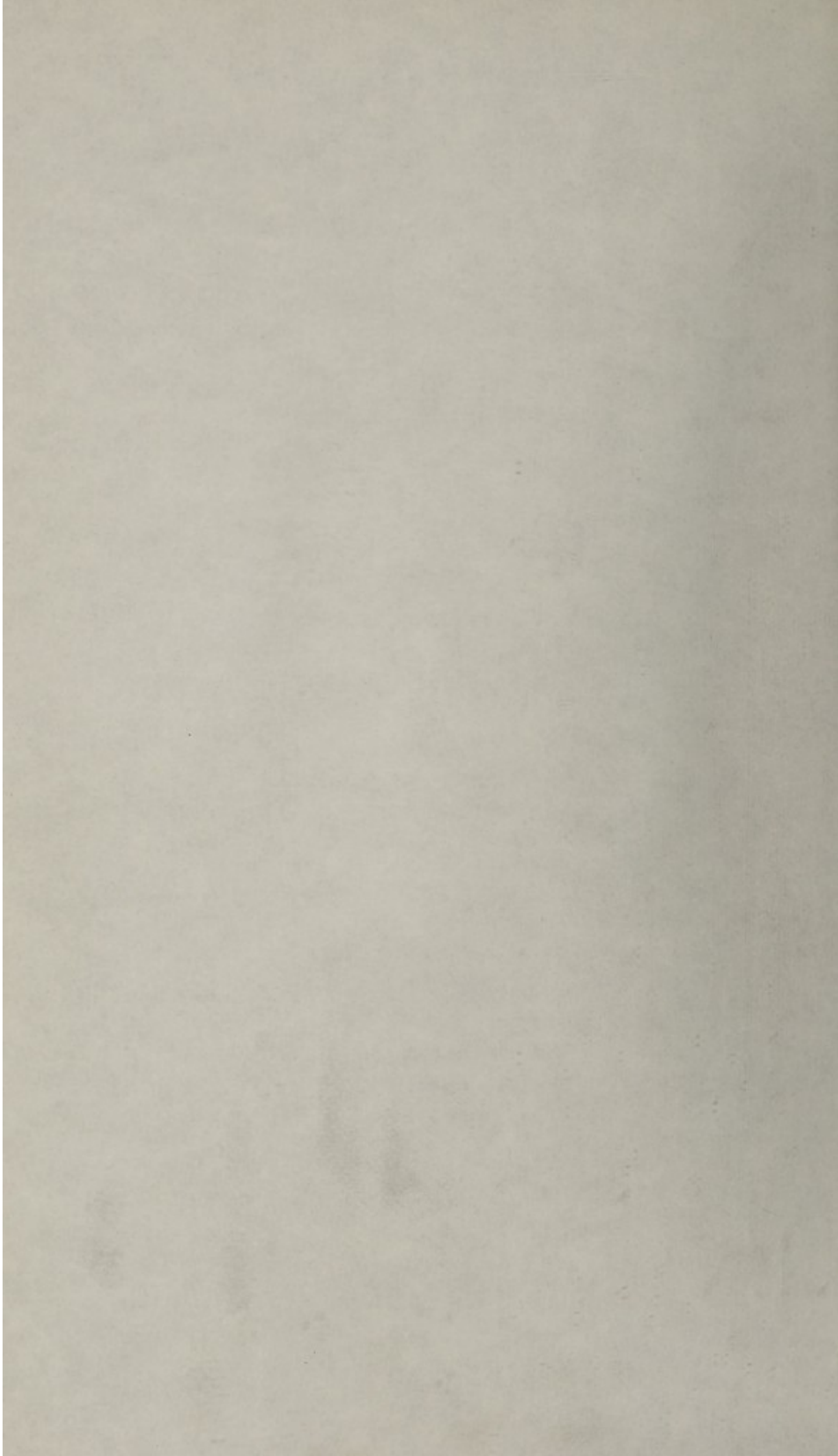
ADMINISTRATION REPORTS, 1909.

PART IV.— EDUCATION, SCIENCE, AND ART.

MEDICAL.

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 1909.

I HAVE the honour to submit for the information of Government the Administration Report of the Medical Department for the year 1909.

2. I was on six months' leave of absence from May 27, during which time the Assistant Principal Civil Medical Officer (Dr. Griffin) performed my duties.

3. At the request of this Government, I attended the International Congress on Alcoholism in London in July and the International Conference on Leprosy at Bergen, Norway, in August, as delegate for the Colony of Ceylon.

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

4. The estimated population of the Island on December 31, 1909 (exclusive of the Military and Shipping population), was 4,082,935. The births registered were 148,891, and the deaths 122,970. The birth-rate was 36.7 per mille, calculated on the estimated population in the middle of the year, and the death-rate was 30.3 per mille, as against 40.1 and 29.4 per mille, respectively, in the previous year.

### SECTION II.—PUBLIC HEALTH.

#### *Vital Statistics.*

5. The public health during the year showed some improvement over the previous year. The amount of malarial fever was less, and the type of this disease was under enteric fever. Smallpox and cholera showed a great decline. Anchylostomiasis, dysentery, leprosy, parangi, and phthisis were in excess of the numbers noted in 1908. The healthiest Province was the Western, and the unhealthiest the Uva and North-Central Provinces. The lowest death-rate occurred in the Negombo and Chilaw Districts, and the highest death-rate in Batticaloa, Ratnapura, and Kurunegala.

6. Under the headings Cerebro-spinal Fever, Simple Continued Fever, Enteric Fever, Influenza, Remittent Fever, and Ague, according to the Registrar-General's returns, there were 23,903 deaths. Under the headings Diarrhoea, Dysentery, Dyspepsia, Enteritis, Obstruction of the Bowel, Hernia, and Appendicitis there were 22,932 deaths, 410 of which were returned under the head of Enteritis, some of which in all probability were deaths due to enteric fever. It is interesting to note that there were 11 deaths only from appendicitis. There were 9,453 deaths from respiratory diseases, which included laryngitis, croup, bronchitis, asthma, pneumonia, pleurisy, and other undefined respiratory diseases (not including phthisis).

There were 4,195 deaths from phthisis. Under the head of Diseases of the Nervous System 14,477 deaths were registered; 488 of these were due to tetanus. There were 755 deaths from diseases of the circulatory system, 1,486 from anchylostomiasis, 182 from diabetes mellitus, 158 from "cancer," 94 from parangi (yaws), 73 from leprosy, 20 from hydrophobia, 8 from cholera, 204 due to suicide, and 189 due to snake-bite.

7. *Deaths due to Preventible Disease.*—Of the 122,970 deaths registered, 17,734 were due to what may be called preventible diseases, or at least diseases that can be controlled by man, and among these I include enteric fever (9,665 deaths), phthisis (4,195 deaths), anchylostomiasis (1,486 deaths), puerperal fever (771 deaths), malaria (852 deaths), tetanus (488 deaths), parangi (94 deaths), leprosy (73 deaths), smallpox (82 deaths), hydrophobia (20 deaths), and cholera (8 deaths). In Colombo enteric fever is controlled by notification, disinfection, and segregation on the part of the Health Department of the Municipality. In other places the control is not so good. There is practically no control over phthisis, but it is hoped that this disease will be lessened after the recommendations of the Tuberculosis Commission now sitting are put in force. There is no control exercised at present over anchylostomiasis, puerperal fever, parangi, tetanus, and hydrophobia. Something has been done with regard to the reduction of malaria, but not sufficient; leprosy is more under control; and the figures for smallpox and cholera are encouraging as pointing to energetic vaccination and hygienic measures.

8. With regard to hydrophobia, I consider 20 deaths from that disease in a year high, although it works out only about 5 per million of the population. There is no record of how many persons were bitten by animals suffering from suspected rabies. The following towns returned deaths from this disease:—Chilaw 5, Kalutara 4, Kandy 3, Kegalla 2, Negombo 2, Kurunegala 2, Galle 1, Colombo 1. Seven dogs were found to be rabid within Colombo Municipal limits. The above facts would suggest the propriety of applying the Rabies Ordinance energetically as regards the destruction of stray dogs and the muzzling of others.



# MEDICAL

## REPORT ON THE CASE OF ...

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A great benefit has been rendered to Ceylon by the establishment of a Pasteur Institute at Coonor in the Nilgiris, to which a fair number of Ceylon people bitten by dogs have gone for treatment.

9. *Infantile Mortality.*—The infant mortality in the 31 principal towns was equal to a rate of 257.7 per 1,000 births registered.

10. *The Health on Estates.*—The mean birth-rate on estates for the four quarters of the year was 36.6 per 1,000 and the death-rate 39.6 per 1,000, as against 34.5 and 36.2 respectively for 1908. The estate population, according to the Census of 1901, was 420,340. The principal causes of deaths were dysentery 2,940, diarrhoea 2,927, debility 2,058, pneumonia 1,517, anchylostomiasis 1,103, convulsions 1,000, fevers 556, phthisis 188.

11. *Total Deaths in the Island.*—The total number of deaths registered in the Island was 122,970. The largest number of deaths occurred in the first quarter of the year, followed by the third and fourth quarters. In the second quarter the fewest number was registered.

#### *Principal Diseases.*

12. *Malaria.*—The total number of persons treated for this disease in hospitals and dispensaries during the year was 512,855, against 513,799 in 1908. 11,117 patients suffering from this disease were admitted to hospital, of whom 612 died. There were 1,050 cases with 10 deaths in the jails. The total amount of quinine issued from the Civil Medical Stores was 76,679 ounces, which cost Rs. 42,273.45. For further remarks on this subject see appendix to this report.

13. *Cholera.*—There were 12 cases of cholera with 7 deaths, as against 51 with 40 deaths in 1908. Of these 12 cases, 3 occurred in the Ragama quarantine camp with one death—all among immigrants from South India; 9 cases occurred at Kattakadu in the North-Western Province, with 6 deaths. The source of infection was not discovered. All the other Provinces were free from outbreaks of cholera throughout the year. Although the Registrar-General shows 8 deaths from this disease, there were 7 only in Government institutions.

14. *Smallpox.*—280 cases of smallpox were treated by the officers of this Department, with 62 deaths, as against 1,446 cases with 321 deaths in the previous year. 244 of these cases, with 55 deaths, occurred in the Western Province, mostly in Colombo; 119 were treated in the infectious diseases hospital, with 46 deaths. It is a significant fact that these 46 deaths were in unvaccinated persons. In the Central Province there were 24 cases with 6 deaths, in the Southern Province there were 9 cases with no death, and in the Eastern Province there were 3 cases with 1 death.

15. *Enteric Fever.*—657 cases of this disease were treated in the seventy-three hospitals of the Colony (excluding the jail hospitals), as compared with 1,029 during the previous year. Of these 657 cases, 429, or over 63 per cent., were treated in the Civil Hospital at Colombo and the Lady Havelock and Police Hospitals, Colombo, with a total mortality of 113. The incidence of enteric in the larger towns, as indicated by the hospital returns, shows that Kandy had 74 cases with 15 deaths, Galle 26 cases with 10 deaths, Nawalapitiya 15 cases with 5 deaths, Kurunegala 13 cases with 5 deaths, Anuradhapura 10 cases with 8 deaths, Kalutara 9 cases with 1 death, Matara 7 cases with 1 death, Matale 7 cases with 1 death, Nuwara Eliya 6 cases with 1 death. The returns from the hospitals in the planting districts and rural hospitals show a small incidence of enteric fever, Dikoya heading the list with 6 cases and 1 death. Compulsory notification of this disease is difficult in the rural districts. It is carried out in the Municipal and some other towns, but many cases are never diagnosed or reported. In the eighteen hospitals attached to the jails there were 4 cases with 2 deaths, as against 12 cases and 2 deaths in 1908.

16. *Dysentery.*—During the year 3,273 cases of this disease were treated in the Ceylon hospitals with a mortality of 31.26 per cent., compared with 3,099 with a mortality of 26.38 in 1908. The disease prevailed in all the Provinces: 837 cases were treated in the Colombo hospitals, 172 in Kandy, 132 in Matale, 113 in Badulla, 111 in Ratnapura, 106 in Avisawella, 70 in Kurunegala, 45 in Galle, 60 in Jaffna, 39 in Nuwara Eliya. In the jails there were 827 cases with 59 deaths, a death-rate of 7.13. In the jails in the Colombo District 318 cases occurred with a mortality of 27, as compared with 312 cases with 33 deaths in 1908.

17. *Chickenpox.*—In the year under review 2,936 cases of this disease with 3 deaths occurred, as against 3,471 with 1 death in the year previous.

18. *Leprosy.*—607 cases of leprosy were treated in Government medical institutions during the year. Of these, 533 were treated in the Leper Asylum at Hendala, at which institution there were 47 deaths; 35 cases, with 7 deaths, were treated at the Leper Asylum, Kalmunai. The remaining 39 cases were treated temporarily in the various medical institutions in different parts of the Island. Plans and estimates are under consideration for a leper colony near Batticaloa. The Leper Asylum at Hendala is now provided with accommodation for police, who have been stationed there since the assault on the Medical Superintendent at the end of 1908. This measure was considered necessary in view of the tendency to insubordination among some of the lepers. Owing to the difficulties attending diagnosis in the less pronounced cases, it is not possible to give definite figures of the exact number of lepers scattered over the Island, but registers are kept by all Provincial Surgeons of all known and suspected cases of leprosy for whom there is not asylum accommodation at present.

The second International Conference on Leprosy confirms in every respect the resolutions adopted by the First International Conference of Berlin, 1897.

#### *Resolutions Passed at the Second International Conference.*

(i.) Leprosy is a disease which is contagious from person to person, whatever may be the method by which this contagion is effected.

(ii.) Every country in whatever latitude it is situated is within the range of possible infection by leprosy, and may, therefore, usefully undertake measures to protect itself.

(iii.) In view of the success obtained in Germany, Iceland, Norway, and Sweden, it is desirable that other countries with leprosy should proceed to isolate their lepers.

1. The first part of the report is devoted to a general survey of the situation in the country, and to a description of the various movements which are taking place.

2. The second part of the report is devoted to a description of the various movements which are taking place in the different parts of the country.

3. The third part of the report is devoted to a description of the various movements which are taking place in the different parts of the country.

4. The fourth part of the report is devoted to a description of the various movements which are taking place in the different parts of the country.

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24. The twenty-fourth part of the report is devoted to a description of the various movements which are taking place in the different parts of the country.

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26. The twenty-sixth part of the report is devoted to a description of the various movements which are taking place in the different parts of the country.

27. The twenty-seventh part of the report is devoted to a description of the various movements which are taking place in the different parts of the country.



(iv.) It is desirable that lepers should not be permitted to follow certain occupations which are particularly dangerous in respect to the contagion of leprosy.

(v.) In every country and in all cases the strict isolation of leprous beggars and vagrants is necessary.

(vi.) It is desirable that the healthy children of lepers should be separated from their leprous parents as soon as possible, and that these children should remain under observation.

(vii.) An examination by a competent physician should be made from time to time of those who have lived with lepers.

(viii.) All theories on the etiology and the mode of propagation of leprosy should be carefully examined to ascertain if they accord with our knowledge of the nature and the biology of the bacillus of leprosy.

(ix.) It is desirable that the question of the transmissibility of leprosy by insects should be elucidated, and that the possibility of the existence of leproid diseases among animals (rats) should receive early study.

(x.) The clinical study of leprosy induces the belief that it is not incurable. We do not at present possess a certain remedy. It is desirable, therefore, to continue the search for a special remedy.

For the purpose of comparison the following are the resolutions passed at the First International Conference on Leprosy at Berlin, 1897 :—

- (i.) In all countries in which leprosy occurs in foci, or is widely distributed, isolation is the best means of preventing the spread of the disease.
- (ii.) The system of compulsory notification, supervision, and isolation, as carried out in Norway, should be recommended to all nations possessing local self-government and an adequate number of physicians.
- (iii.) It must be left to the legally-constituted authorities, after consultation with the sanitary authorities, to determine the special regulations which must be adapted to the special social conditions (of each country).

The following additional resolutions were unanimously approved by the eight British delegates who attended the Conference, and are to be taken in conjunction with the official recommendations passed at the Conference :—

"We, the undersigned delegates from the British and certain Colonial Governments, unanimously approve the resolutions adopted at the Second International Scientific Congress on Leprosy held at Bergen, August 16-19, 1909. At a special meeting held by us on August 20, 1909, we agreed to the following additional resolutions :—

- (i.) Leprosy is spread by direct and indirect contagion from persons suffering from the disease. The possibility that indirect contagion may be effected by fleas, bugs, lice, the itch parasite, &c., has to be borne in mind. Leprosy is most prevalent under conditions of personal and domestic uncleanness and overcrowding, especially where there is close and protracted association between the leprous and non-leprous.
- (ii.) Leprosy is not due to the eating of any particular food, such as fish.
- (iii.) There is no evidence that leprosy is hereditary; the occurrence of several cases in a single family is due to contagion.
- (iv.) In leprosy an interval of years may elapse between infection and the first recognized appearance of disease. It is a disease of long duration, though some of its symptoms may be quiescent for a considerable period and then recur.
- (v.) The danger of infection from leprous persons is greater when there is discharge from mucous membranes or from ulcerated surfaces.
- (vi.) Compulsory notification of every case of leprosy should be enforced.
- (vii.) The most important administrative measure is to separate the leprous from the non-leprous by segregation in settlements or asylums.
- (viii.) In settlements home life may be permitted under regulation by the responsible authorities.
- (ix.) The preceding recommendations, if carried out, will provide the most efficient means of mitigating the leper's suffering and of assisting in his recovery, and at the same time will produce a reduction and ultimate extinction of the disease."

19. *Anchylostomiasis*.—4,896 cases with 1,184 deaths were treated in the different hospitals of the Colony during the year, as against 4,434 in the year before. This disease occurs mainly among the South Indian coolies imported as estate labourers, and is showing a tendency to spread among the indigenous races in the villages in the neighbourhood of estates. The mortality from this disease in the year under review was 24·18, though it is probable (in view of the similarity of certain symptoms) that many so-called cases of malarial cachexia were in reality cases of anchylostomiasis. At the latter end of November, 1909, the Government directed that a systematic examination of dejecta for the presence of the ova of anchylostomes should take place at the Ragama immigration dept. The Medical Officer of that camp, assisted by the Medical Officer of the Mahara Jail, under the supervision of the Acting Provincial Surgeon of the Western Province, examined the dejecta of 864 arrivals from South India. The investigation revealed that, of the 864 specimens examined microscopically, 417 contained the ova of the anchylostome, either alone or with the ova of other intestinal parasites. It was thus demonstrated that 48·26 per cent. of new arrivals, examined over a period of 38 consecutive days, were infected with the parasite, but the extent of its prevalence in the planting districts of Ceylon may be considered to be considerably over that figure, because of the insanitary conditions of estate lines. Coolies from the different recruiting districts in South India, viz., Tinnevely, Madura, Trichinopoly, Salem, North Arcot,





South Arcot, Chingleput, Cuddappah, Madras District, Coimbatore, Vizagapatam, Anantapur, Nellore, the Mysore and Travancore States, were examined, and a certain percentage of infection found in all. The disease being widespread on the neighbouring continent, the daily importation of infection carriers, the continued pollution of the soil and water on estates, and the lack of efficient sanitary precautions against its spread are subjects for grave consideration. It is evident that to control the disease effectually it will be necessary to proceed on the lines indicated in paragraph 9 of the Secretary of State's despatch No. 53 of February 4, 1909, viz. :—

- (a) Wherever necessary laws should be enacted enforcing the provision on estates and elsewhere, where numbers of labourers are collected, of simple, inexpensive, but efficient latrines, in places appropriate both as regards the convenience of the labourers and the health of the public.
- (b) A penalty should be imposed on persons found avoidably defecating in any place where contamination of the soil or water would be likely to cause risk of infection.
- (c) Each colony should be divided into convenient districts, in each of which should be appointed an inspector responsible to the local authority, medical officer, or some other authority, who should be charged with the enforcement of sanitary regulations.
- (d) In all schools object lessons on anchylostomiasis should as far as possible be given. Leaflets containing simple information on the subject should be distributed periodically. The Committee consider that the pamphlet prepared by Dr. Nicholls, of the Leeward Islands, would form a suitable model.
- (e) While the treatment for anchylostomiasis of the whole population is clearly impracticable, arrangements should be made for the distribution from convenient centres, such as schools, post offices, district nurse stations, &c., of anthelmintics at cost price, with simple directions for use. For this purpose beta-naphthol is the most suitable drug, thymol and other toxic anthelmintics being only used under medical supervision.

The practical difficulties in the way of achieving the above requirements are many and great, and without the energetic and intelligent co-operation of the planting interest in Ceylon it is difficult to see any prospect of amelioration. It is significant that the Provincial Surgeon of the Central Province, in which the largest number of estates are situated, states that "all officers report the increased prevalence of this disease on estates." The Provincial Surgeon of the Southern Province states that "the disease is undoubtedly spreading amongst the villages in the neighbourhood of estates." The Provincial Surgeon of the Province of Sabaragamuwa notes that "on the Galatura Group of estates no less than 568 persons out of a total labour force of 1,416 were suffering from anchylostomiasis, and that the disease is undoubtedly on the increase, and unless stringent measures are taken . . . . the disease is bound to spread through the length and breadth of the Island."

20. *Diphtheria*.—There were 3 cases and 2 deaths from this disease during the year: 2 cases occurred at the Buttala hospital with 1 death, and 1 fatal case at the General Hospital, Colombo.

21. *Parangi*.—3,485 cases of this disease were treated in the different hospitals during the year, as against 3,246 the previous year. The Western, Central, and Northern Provinces are comparatively free from the disease, while the North-Western Province, North-Central Province, Province of Uva, and Province of Sabaragamuwa continue to show a considerable prevalence. The special hospital referred to in the Administration Report for 1908 for parangi in the North-Western Province was not established.

22. *Cancer*.—In the Registrar-General's death reports there are 158 cases under the head of cancer returned. The Pathologist of the General Hospital, Colombo (Dr. A. J. Chalmers), received during the year 121 notifications of malignant disease, 9 of which indicated cases of sarcoma and 112 carcinoma. The sarcomata occurred in 4 females and 5 males; the carcinomata in 40 females and 72 males. The provincial distribution is as follows :—

| <i>Sarcoma.</i>   |      | <i>Carcinomata.</i>    |       |
|-------------------|------|------------------------|-------|
| Northern Province | .. 2 | Southern Province      | .. 26 |
| Western Province  | .. 4 | Western Province       | .. 52 |
| Central Province  | .. 2 | Central Province       | .. 14 |
| Southern Province | .. 1 | Northern Province      | .. 9  |
|                   |      | Eastern Province       | .. 1  |
|                   |      | Province of Uva        | .. 3  |
|                   |      | North-Western Province | .. 7  |
| Total ..          | 9    | Total ..               | 112   |

The *carcinomata* are classified as follows :—

| <i>Males.</i>     |       | <i>Females.</i>      |      |
|-------------------|-------|----------------------|------|
| Epithelioma penis | .. 30 | Cancer of the uterus | 20   |
| Do. cheek         | 16    | Do. vagina           | 1    |
| Do. aw            | 7     | Do. labium           | 1    |
| Do. lip           | 5     |                      | 22   |
| Do. tongue        | 8     | Do. breast           | .. 5 |
| Do. soft palate   | 1     | Do. liver            | .. 4 |
|                   | 37    | Jaw                  | .. 2 |
| Do. stomach       | .. 2  | Larynx               | .. 1 |
| Do. thigh         | .. 1  | Lip                  | .. 1 |
| Do. orbit         | .. 1  | Stomach              | .. 1 |
| Laryngeal         | .. 1  | Cheek                | .. 3 |
|                   |       | Tongue               | .. 1 |
| Total ...         | 72    | Total ..             | 40   |

The following tabular statements show a race and sex distribution in the Provinces and a race and age distribution in the sexes.

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Table I.—Race and Sex Table, showing the Distribution in the Provinces.  
[Note.—C = Caste, S = Sarcema, M = Male, F = Female.]

| Province.        | Sinhalese. |    | Tamil. |    | Malabars. |    | Moors. |    | Burghers. |    | Europeans. |    | Total. |    | Grand Total. |    |
|------------------|------------|----|--------|----|-----------|----|--------|----|-----------|----|------------|----|--------|----|--------------|----|
|                  | C          |    | S      |    | C         |    | S      |    | C         |    | S          |    | C      |    | S            |    |
|                  | M.         | F. | M.     | F. | M.        | F. | M.     | F. | M.        | F. | M.         | F. | M.     | F. | M.           | F. |
| Western ..       | 25         | 19 | 2      | 2  | —         | —  | —      | —  | 1         | 1  | —          | —  | 20     | 23 | 4            | 4  |
| Central ..       | 4          | 2  | 2      | 3  | —         | —  | —      | —  | —         | —  | —          | —  | 9      | 5  | 3            | 2  |
| Southern ..      | 15         | 10 | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | 16     | 10 | 1            | 1  |
| Northern ..      | —          | —  | 8      | 1  | —         | —  | —      | —  | —         | —  | —          | —  | 8      | 1  | 2            | 2  |
| Eastern ..       | —          | —  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | —      | —  | —            | —  |
| Uva ..           | 2          | —  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | 1      | —  | —            | —  |
| North-Western .. | 6          | 1  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | 3      | —  | —            | —  |
|                  | 52         | 32 | 13     | 6  | 2         | 2  | —      | —  | 1         | —  | —          | —  | 72     | 40 | 4            | 5  |
|                  | 84         |    | 19     |    | 4         |    | 2      |    | 1         |    | 3          |    | 112    |    | 9            |    |
|                  | 88         |    | 23     |    | 4         |    | 2      |    | 1         |    | 3          |    | 121    |    | 121          |    |

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

| Age.           | Sinhalese. |    | Tamil. |    | Malabars. |    | Moors. |    | Burghers. |    | Europeans. |    | Total. |    | Grand Total. |    |
|----------------|------------|----|--------|----|-----------|----|--------|----|-----------|----|------------|----|--------|----|--------------|----|
|                | C          |    | S      |    | C         |    | S      |    | C         |    | S          |    | C      |    | S            |    |
|                | M.         | F. | M.     | F. | M.        | F. | M.     | F. | M.        | F. | M.         | F. | M.     | F. | M.           | F. |
| 0-5 ..         | —          | —  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | —      | —  | —            | —  |
| 6-10 ..        | —          | —  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | —      | —  | —            | —  |
| 11-15 ..       | —          | —  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | —      | —  | —            | —  |
| 16-20 ..       | —          | —  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | —      | —  | —            | —  |
| 21-25 ..       | 2          | 1  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | —      | —  | —            | —  |
| 26-30 ..       | 1          | 5  | 1      | —  | —         | —  | —      | —  | —         | —  | —          | —  | 3      | 1  | 2            | 2  |
| 31-35 ..       | 11         | 2  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | 2      | 5  | 1            | 1  |
| 36-40 ..       | 7          | 7  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | 12     | 2  | —            | —  |
| 41-45 ..       | 6          | 2  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | 9      | 10 | 1            | 1  |
| 46-50 ..       | 12         | 5  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | 8      | 2  | —            | —  |
| 51-55 ..       | 10         | 4  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | 15     | 10 | 1            | 1  |
| 56-60 ..       | 3          | 5  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | 17     | 4  | 1            | 1  |
| 61-70 ..       | —          | —  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | 6      | 5  | —            | —  |
| 71-80 ..       | —          | —  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | —      | —  | —            | —  |
| 81-90 ..       | —          | —  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | —      | —  | —            | —  |
| 91 and over .. | —          | —  | —      | —  | —         | —  | —      | —  | —         | —  | —          | —  | —      | —  | —            | —  |
|                | 52         | 32 | 13     | 6  | 2         | 2  | —      | —  | 1         | —  | —          | —  | 72     | 40 | 5            | 4  |
|                | 84         |    | 19     |    | 4         |    | 2      |    | 1         |    | 3          |    | 112    |    | 9            |    |
|                | 88         |    | 23     |    | 4         |    | 2      |    | 1         |    | 3          |    | 121    |    | 121          |    |

| Year | Month | Day | Time  | Location | Activity | Remarks |
|------|-------|-----|-------|----------|----------|---------|
| 1975 | 10    | 10  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 11  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 12  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 13  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 14  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 15  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 16  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 17  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 18  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 19  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 20  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 21  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 22  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 23  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 24  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 25  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 26  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 27  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 28  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 29  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 30  | 10:00 | ...      | ...      | ...     |
| 1975 | 10    | 31  | 10:00 | ...      | ...      | ...     |

23. *Phthisis*.—The Registrar-General returned 4,195 deaths from phthisis. During the year there were 1,978 cases of phthisis treated in the Ceylon hospitals, as compared with 1,318 in the year 1908. The following tables show race and sex distribution in the Provinces and race and age distribution in the sexes:—

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

| Provinces.                 | Sinhalese. |     | Indians. |    | Tamils (Ceylon). |    | Moors. |    | Burghers. |    | Malays. |       | Europeans. |       | Bengalis. |       | 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                    | 404        | 323 | 64       | 18 | 140              | 56 | 37     | 8  | 17        | 32 | 3       | —     | 5          | 1     | 6         | —     | 10          | 1     | 686    | 439   | 1,125        |
| Central                    | 76         | 38  | 57       | 26 | 5                | 2  | 5      | 1  | 3         | 2  | 2       | —     | —          | —     | —         | —     | 1           | —     | 149    | 69    | 218          |
| Northern                   | 4          | 2   | 6        | 1  | 53               | 7  | 1      | —  | 1         | —  | 1       | —     | —          | —     | —         | —     | —           | —     | 66     | 10    | 76           |
| Southern                   | 90         | 49  | 1        | 1  | —                | 1  | 2      | 1  | 5         | 5  | —       | —     | —          | —     | —         | —     | 2           | 4     | 106    | 61    | 167          |
| Eastern                    | 2          | 1   | 1        | —  | 13               | —  | 1      | —  | 1         | —  | —       | —     | —          | —     | —         | —     | —           | —     | 18     | 1     | 19           |
| North-Western              | 74         | 31  | 25       | 5  | 18               | —  | 7      | 1  | —         | —  | 1       | 1     | 1          | —     | —         | —     | —           | 1     | 126    | 39    | 165          |
| North-Central              | 17         | 2   | 10       | 2  | 1                | 1  | 1      | —  | 1         | —  | 1       | —     | —          | —     | —         | —     | —           | —     | 30     | 6     | 36           |
| Uva                        | 33         | 10  | 10       | 7  | 7                | 5  | —      | 1  | —         | —  | —       | —     | —          | —     | —         | —     | —           | —     | 49     | 17    | 66           |
| Sabaragamuwa               | 53         | 14  | 24       | 11 | 3                | —  | 1      | —  | —         | —  | —       | —     | —          | —     | —         | —     | —           | —     | 81     | 25    | 106          |
| Racial Sex Totals          | 759        | 470 | 198      | 71 | 238              | 67 | 56     | 11 | 27        | 40 | 8       | 1     | 6          | 1     | 6         | —     | 13          | 6     | 1,311  | 667   | 1,978        |
| Racial Total               | 1,229      | 269 | 305      | 67 | 67               | 67 | 9      | 7  | 6         | 19 | 1,978   | 1,978 | 1,978      | 1,978 | 1,978     | 1,978 | 1,978       | 1,978 | 1,978  | 1,978 | 1,978        |
| General Hospital, Colombo* | 264        | 202 | 25       | 2  | 119              | 44 | 23     | 4  | 16        | 18 | 3       | —     | 4          | 1     | 4         | —     | 10          | 1     | 468    | 272   | 740          |

\* These cases are included in the figures for Western Province.

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

|                   | Sinhalese. |     | Indians. |    | Tamils (Ceylon). |    | Moors. |    | Burghers. |    | Malays. |       | Europeans. |       | Bengalis. |       | 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               | 8          | 7   | —        | 1  | —                | —  | —      | —  | —         | —  | —       | —     | —          | —     | —         | —     | —           | —     | 8      | 8     | 16           |
| 6—10              | 4          | 8   | —        | 1  | 1                | 1  | 1      | 1  | —         | —  | —       | —     | —          | —     | —         | —     | —           | —     | 7      | 11    | 18           |
| 11—15             | 11         | 11  | —        | —  | 7                | 2  | —      | 1  | —         | 4  | —       | —     | —          | —     | —         | —     | 1           | 1     | 19     | 19    | 38           |
| 16—20             | 39         | 51  | 26       | 11 | 34               | 12 | 2      | 2  | 5         | 4  | —       | —     | —          | —     | —         | —     | 1           | —     | 137    | 80    | 217          |
| 21—25             | 88         | 53  | 22       | 6  | 29               | 11 | 9      | 1  | 4         | 6  | 4       | —     | 1          | —     | —         | —     | 4           | —     | 161    | 77    | 238          |
| 26—30             | 135        | 105 | 45       | 18 | 38               | 15 | 10     | 4  | 3         | 6  | 1       | 1     | —          | —     | 4         | —     | 1           | 3     | 237    | 152   | 389          |
| 31—35             | 95         | 51  | 22       | 13 | 24               | 8  | 8      | —  | 3         | 1  | 1       | —     | 2          | —     | —         | —     | 1           | 1     | 156    | 74    | 230          |
| 36—40             | 162        | 58  | 35       | 8  | 34               | 3  | 9      | —  | 3         | 12 | —       | —     | 1          | 1     | —         | —     | 1           | 1     | 185    | 83    | 268          |
| 41—45             | 59         | 18  | 13       | 6  | 11               | 1  | 8      | 1  | 3         | 1  | 1       | —     | —          | —     | 1         | —     | 3           | —     | 99     | 27    | 126          |
| 46—50             | 78         | 58  | 19       | 4  | 19               | 11 | 4      | 1  | 2         | 4  | —       | —     | —          | —     | 1         | —     | —           | —     | 124    | 78    | 202          |
| 51—60             | 79         | 37  | 12       | 2  | 24               | 3  | 2      | —  | 2         | 2  | 1       | —     | 1          | —     | —         | —     | —           | —     | 121    | 44    | 165          |
| 61—70             | 23         | 10  | 4        | 1  | 13               | —  | 1      | —  | 1         | —  | —       | —     | 1          | —     | —         | —     | —           | —     | 43     | 11    | 54           |
| 71—80             | 7          | 3   | —        | —  | 3                | —  | 2      | —  | —         | —  | —       | —     | —          | —     | —         | —     | —           | —     | 12     | 3     | 15           |
| 81—90             | 1          | —   | —        | —  | 1                | —  | —      | —  | —         | —  | —       | —     | —          | —     | —         | —     | —           | —     | 2      | —     | 2            |
| 91 and over       | —          | —   | —        | —  | —                | —  | —      | —  | —         | —  | —       | —     | —          | —     | —         | —     | —           | —     | —      | —     | —            |
| Racial Sex Totals | 759        | 470 | 198      | 71 | 238              | 67 | 56     | 11 | 27        | 40 | 8       | 1     | 6          | 1     | 6         | —     | 13          | 6     | 1,311  | 667   | 1,978        |
| Racial Total      | 1,229      | 269 | 305      | 67 | 67               | 67 | 9      | 7  | 6         | 19 | 1,978   | 1,978 | 1,978      | 1,978 | 1,978     | 1,978 | 1,978       | 1,978 | 1,978  | 1,978 | 1,978        |

24. *Vaccination*.—Mr. Edwin Burgess took up his duties as officer in charge of the Government Vaccine Establishment on February 3, 1909, in his capacity as Assistant Bacteriologist. His duties consist in the manufacture of pure calf vaccine lymph on modern scientific and improved methods. The requisite improvements and alterations to the calf depôt at Kanatta having been effected, and the necessary apparatus procured, satisfactory results have been reported. "Seed" lymph was obtained from Madras and from the Lister Institute, London, the latter being preserved in cold storage on the voyage out to Ceylon to ensure freedom from deterioration. Lymph was, till the establishment of the existing system, despatched from the office of the Provincial Surgeon, Western Province, to vaccinators, but at present the manufacture and despatch of lymph is conducted at the Vaccine Institute. It is prepared and stored in bulk at a suitable temperature, capillary tubes being filled immediately previous to despatch to vaccinators in the various Provinces.

The particulars as to vaccination in the Island are as follows:—During the year 184,534 subjects were vaccinated: 169,470 were primary vaccinations and 15,064 re-vaccinations. Of the former, 145,511 were successful and 11,715 unsuccessful, and in 12,244 subjects the result of the operation was not known, as they failed to report themselves for examination on the appointed days. The percentage of successful cases to total inspected was 92.55 in primary vaccinations, as against 85.22 last year. In the case of re-vaccinations 7,951 were successful and 2,657 were unsuccessful, while in 4,456 cases the results were not known, owing to the subjects not presenting themselves for examination when required. The percentage of successful to unsuccessful operations in those re-vaccinated was 74.95, as against 69.51 last year.

Mr. Burgess reports that the bacteriological examination of the lymph for the last six months of the year showed a marked decrease in the number of extraneous micro-organisms as compared with the lymph



The following table shows the amount of land in the several States and Territories which has been surveyed and patented since the year 1860, and the amount of land which has been surveyed but not patented since that year.

Table I.—Land surveyed and patented since 1860 in the several States and Territories.

| State or Territory | Land surveyed and patented since 1860 (Acres) | Land surveyed but not patented since 1860 (Acres) |
|--------------------|---|---|
| Alabama            | 1,234,567                                     | 876,543   |
| Arizona            | 567,890                                       | 345,678   |
| Arkansas           | 987,654                                       | 654,321   |
| California         | 3,456,789                                     | 2,345,678   |
| Colorado           | 2,345,678                                     | 1,234,567   |
| Connecticut        | 123,456                                       | 78,901  |
| Delaware           | 45,678  | 30,456  |
| Florida            | 789,012                                       | 543,210   |
| Georgia            | 1,567,890                                     | 1,012,345   |
| Idaho              | 678,901                                       | 456,789   |
| Illinois           | 2,109,876                                     | 1,432,109   |
| Indiana            | 1,876,543                                     | 1,210,987   |
| Iowa               | 2,543,210                                     | 1,765,432   |
| Kansas             | 3,210,987                                     | 2,109,876   |
| Kentucky           | 1,432,109                                     | 987,654   |
| Louisiana          | 987,654                                       | 654,321   |
| Maine              | 234,567                                       | 156,789   |
| Maryland           | 345,678                                       | 234,567   |
| Massachusetts      | 156,789                                       | 101,234   |
| Michigan           | 2,109,876                                     | 1,432,109   |
| Minnesota          | 2,876,543                                     | 1,987,654   |
| Mississippi        | 1,234,567                                     | 876,543   |
| Missouri           | 2,543,210                                     | 1,765,432   |
| Montana            | 1,567,890                                     | 1,012,345   |
| Nebraska           | 2,345,678                                     | 1,567,890   |
| Nevada             | 1,234,567                                     | 876,543   |
| New Hampshire      | 101,234                                       | 67,890  |
| New Jersey         | 234,567                                       | 156,789   |
| New Mexico         | 1,567,890                                     | 1,012,345   |
| New York           | 1,234,567                                     | 876,543   |
| North Carolina     | 1,567,890                                     | 1,012,345   |
| North Dakota       | 1,234,567                                     | 876,543   |
| Ohio               | 2,109,876                                     | 1,432,109   |
| Oklahoma           | 1,567,890                                     | 1,012,345   |
| Oregon             | 1,234,567                                     | 876,543   |
| Pennsylvania       | 1,567,890                                     | 1,012,345   |
| Rhode Island       | 67,890  | 45,678  |
| South Carolina     | 1,234,567                                     | 876,543   |
| South Dakota       | 1,234,567                                     | 876,543   |
| Tennessee          | 1,567,890                                     | 1,012,345   |
| Texas              | 2,345,678                                     | 1,567,890   |
| Vermont            | 101,234                                       | 67,890  |
| Virginia           | 1,234,567                                     | 876,543   |
| Washington         | 1,234,567                                     | 876,543   |
| West Virginia      | 1,234,567                                     | 876,543   |
| Wisconsin          | 2,109,876                                     | 1,432,109   |
| Wyoming            | 1,234,567                                     | 876,543   |
| Total              | 45,678,901                                    | 30,456,789  |

The total amount of land surveyed and patented since 1860 is 45,678,901 acres, and the total amount of land surveyed but not patented since that year is 30,456,789 acres.

Table II.—Land surveyed and patented since 1860 in the several States and Territories.

| State or Territory | Land surveyed and patented since 1860 (Acres) | Land surveyed but not patented since 1860 (Acres) |
|--------------------|---|---|
| Alabama            | 1,234,567                                     | 876,543   |
| Arizona            | 567,890                                       | 345,678   |
| Arkansas           | 987,654                                       | 654,321   |
| California         | 3,456,789                                     | 2,345,678   |
| Colorado           | 2,345,678                                     | 1,234,567   |
| Connecticut        | 123,456                                       | 78,901  |
| Delaware           | 45,678  | 30,456  |
| Florida            | 789,012                                       | 543,210   |
| Georgia            | 1,567,890                                     | 1,012,345   |
| Idaho              | 678,901                                       | 456,789   |
| Illinois           | 2,109,876                                     | 1,432,109   |
| Indiana            | 1,876,543                                     | 1,210,987   |
| Iowa               | 2,543,210                                     | 1,765,432   |
| Kansas             | 3,210,987                                     | 2,109,876   |
| Kentucky           | 1,432,109                                     | 987,654   |
| Louisiana          | 987,654                                       | 654,321   |
| Maine              | 234,567                                       | 156,789   |
| Maryland           | 345,678                                       | 234,567   |
| Massachusetts      | 156,789                                       | 101,234   |
| Michigan           | 2,109,876                                     | 1,432,109   |
| Minnesota          | 2,876,543                                     | 1,987,654   |
| Mississippi        | 1,234,567                                     | 876,543   |
| Missouri           | 2,543,210                                     | 1,765,432   |
| Montana            | 1,567,890                                     | 1,012,345   |
| Nebraska           | 2,345,678                                     | 1,567,890   |
| Nevada             | 1,234,567                                     | 876,543   |
| New Hampshire      | 101,234                                       | 67,890  |
| New Jersey         | 234,567                                       | 156,789   |
| New Mexico         | 1,567,890                                     | 1,012,345   |
| New York           | 1,234,567                                     | 876,543   |
| North Carolina     | 1,567,890                                     | 1,012,345   |
| North Dakota       | 1,234,567                                     | 876,543   |
| Ohio               | 2,109,876                                     | 1,432,109   |
| Oklahoma           | 1,567,890                                     | 1,012,345   |
| Oregon             | 1,234,567                                     | 876,543   |
| Pennsylvania       | 1,567,890                                     | 1,012,345   |
| Rhode Island       | 67,890  | 45,678  |
| South Carolina     | 1,234,567                                     | 876,543   |
| South Dakota       | 1,234,567                                     | 876,543   |
| Tennessee          | 1,567,890                                     | 1,012,345   |
| Texas              | 2,345,678                                     | 1,567,890   |
| Vermont            | 101,234                                       | 67,890  |
| Virginia           | 1,234,567                                     | 876,543   |
| Washington         | 1,234,567                                     | 876,543   |
| West Virginia      | 1,234,567                                     | 876,543   |
| Wisconsin          | 2,109,876                                     | 1,432,109   |
| Wyoming            | 1,234,567                                     | 876,543   |
| Total              | 45,678,901                                    | 30,456,789  |

The total amount of land surveyed and patented since 1860 is 45,678,901 acres, and the total amount of land surveyed but not patented since that year is 30,456,789 acres.

The following table shows the amount of land in the several States and Territories which has been surveyed and patented since the year 1860, and the amount of land which has been surveyed but not patented since that year.

The total amount of land surveyed and patented since 1860 is 45,678,901 acres, and the total amount of land surveyed but not patented since that year is 30,456,789 acres.

obtained in the earlier part of the year; that the decrease is to be attributed to the improved conditions of manipulation, and probably to the fact that no straw or similar material was used for bedding the vaccinated calves. The most abundant extraneous micro-organisms found at the time of preparation were the staphylococcus pyogenes albus and the staphylococcus aureus flavus. The staphylococcus pyogenes aureus was isolated on a few occasions; the bacillus mesentericus vulgatus, bacillus subtilis, and a sarcina have also been identified. 58,315 tubes of calf lymph were issued.

25. *Precautions against the introduction of Plague.*—The Plague Committee held meetings during the year. Three ports in Japan, three in China, one in Siam, two in Burma, ten in India, two in Arabia, six in Africa, two in Australia, and one in the Philippines, a total of 29 ports, were regarded as plague infected. 2,815 vessels called at the port of Colombo during the year; 826 healthy vessels from infected ports were placed in modified quarantine, and 15 vessels were placed in strict quarantine. In thirteen of these cases smallpox was the reason for quarantine, in one case it was cholera, and in one case it was suspected plague, which, however, on further observation and investigation, was pronounced not to be a case of that disease. The disinfecting station is fully equipped and worked efficiently. Cargo lighters were systematically fumigated to ensure the destruction of rats.

26. *Lunacy.*—The total number of persons treated at the Colombo Lunatic Asylum during the year was 751, being 32 less than the year previous. There were 54 deaths. In the House of Observation the total number treated was 186, of whom 3 died. The accommodation provided is inadequate for the number of inmates, and the question of increasing it may have to be considered in the near future. For further details of this institution see report of the Medical Superintendent attached.

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

27. The rainfall map kindly supplied to me by the Surveyor-General shows that quite half the Island was comparatively dry, *i.e.*, under 50 inches of rain during the year. The dry area embraces the Northern Province and a large part of the North-Western Province, the Eastern Province, and a large portion of the Southern Province. More rain fell in the western half of the Island than in the eastern. There was a large area in which from 50 to 75 inches were recorded, a smaller area in which there were from 75 to 100 inches, portions of the Southern, Sabaragamuwa, Western, and Central Provinces from 150 to 200 inches, and a small area between Hatton and Digalla where over 200 inches were recorded. It has always been noticed that the malarial seasons are influenced by the two monsoons: in the south-west monsoon the western half of the Island suffers especially from this disease, and the eastern half during the north-east monsoon. Bowel diseases are more prevalent during the rains. Respiratory diseases are more common during the chilly nights and mornings of the north-east monsoon. Enteric fever is more prevalent following a period of dryness, when the surface wells are polluted by washings from the surface of the ground.

Regarding rainfall and malarial outbreaks, our experience here is that very severe outbreaks have been known in dry weather, which is attributed to the want of rain to wash out the pools of water, and thus suitable places are left for mosquitoes to breed undisturbed. Meteorological conditions further affect the health of the people as regards their influence on the quantity of food produced in the Island and on the general condition of the people to resist disease.

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

28. The general sanitary condition of the Colony cannot be regarded as satisfactory; only in the towns having Municipalities and Local Boards is any attempt made at sanitation. In other places there is an absence of proper drains, water supply, conservancy, scavenging, and the proper disposal of refuse. Even in the large towns the drainage is bad, overcrowding exists, and proper water supplies are rare.

29. *Colombo.*—The water supply is not sufficient in quantity or in distribution. In many parts of the town, especially to the south, the pressure is not sufficient to supply the upper storeys of houses. Some improvement is anticipated by the laying down of some larger mains, but the question of another main from Labugama cannot be postponed for very long, because of the tendency to increase the area of the city by including the nearest suburbs and in anticipation of the completion of the new water-carriage system of sewers. The collection of night soil in pails, its transfer to carts in the streets, its conveyance through the thoroughfares to a pitting ground where it is buried, is unsatisfactory from a sanitary point of view, but it is carried out as well as such a system can be. These methods must be continued until the new sewers are completed. Good progress with the work of constructing Mr. Mansergh's sewage scheme has been made. The whole of that section is finished which is to drain the sewage that now finds its way into the harbour; it only requires to be linked up with the dwelling-houses.

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, and watering before sweeping to avoid raising clouds of dust is imperative.

The building of the Municipal infectious diseases hospital has not been begun yet.

Cesspits and polluted wells are being closed, but the wells in general cannot be filled up until a more plentiful water supply is provided.

The surface drainage in many parts of the city is defective.

The average birth- and death-rates per 1,000 of population for the year were 25.27 and 30.77 respectively, as against 25.5 and 36.87 in the year 1908.

Useful work has been carried out to lessen the nuisance arising from the dust caused by motor cars, by covering the surface of the main roads with preparations of tar and oil.

30. In February a special officer was appointed as Rural Medical Officer of Health, whose duty it is to supervise the sanitation of the large villages which immediately surround the confines of the Municipality, and to carry out the provisions of the new Ordinance to control the rural dairies and slaughterhouses. One of his most useful duties is to control the spread of enteric fever by the removal of the patient to a hospital (where practicable) and the disinfection of the premises.

The first section of the report deals with the general conditions of the country and the progress of the various branches of industry and commerce. It is found that the country is generally well supplied with the necessaries of life, and that the various branches of industry and commerce are all in a state of progress.

The second section of the report deals with the state of the various branches of industry and commerce. It is found that the various branches of industry and commerce are all in a state of progress, and that the country is generally well supplied with the necessaries of life.

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Section III - State of the various branches of industry and commerce.

The first section of this part of the report deals with the state of the various branches of industry and commerce. It is found that the various branches of industry and commerce are all in a state of progress, and that the country is generally well supplied with the necessaries of life.

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Section IV - State of the various branches of industry and commerce.

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31. Kandy.—The sanitation of the town was in as satisfactory a condition as possible considering the primitive state of the drainage. The water supply remained plentiful and wholesome. A channel to divert another stream to feed the reservoir is nearing completion, and this will render possible the extension of the water supply to the more outlying parts of the town, hitherto dependent upon wells or river water. The conservancy is satisfactory. The night soil is collected in air-tight drums and conveyed to a trenching ground. Notification of certain infectious diseases, and the registration of dairies, are carried out.

32. Galle.—The Municipal limits of this town cover an area of about  $6\frac{1}{2}$  miles, including five wards and 44 villages. The water supply is limited, serving the Fort only, and the quality of the water is unsatisfactory; it is chiefly used for washing purposes. The drinking water is obtained from wells about 3 miles distant, is of good quality, and sold in the town from casks, which are periodically inspected and flushed. An additional water supply scheme has been taken in hand and is progressing satisfactorily. The scavenging and disposal of refuse have been satisfactorily carried out.

*Drainage.*—The Fort division is provided with a satisfactory system of drainage. Other divisions of the town are being gradually provided with drainage as funds permit. Several swamps were filled in during the year. The registration and inspection of dairies, laundries, and bakeries has resulted in their being kept in a more satisfactory condition. Organized attempts at mosquito extermination were made during the year.

33. Jaffna.—The water supply is entirely from wells, subject to pollution during the rains owing to their proximity to cesspits. The general sanitary condition is gradually being improved by closing as many of these as possible and introducing the dry-earth system. Roads, drains, and public grounds are being kept cleaner. Drainage is bad owing to the flat contour of the land, and those drains that exist are merely earth cuttings incapable of conveying the surface storm water off premises; collections of storm water with its consequences follow the rains. High cadjan and live fences conduce to the stagnation of air. The recommendations made in my Administration Report for 1908 may be repeated, viz., (a) a water supply; (b) improved drainage; (c) building regulations; (d) filling up, or drainage of borrows and pits along the railway and oiling of surfaces of large sheets of water that cannot be drained; (e) limitation of height of cadjan fences, the lower portion being left open for  $1\frac{1}{2}$  ft. above surface of ground; (f) closing of cesspits and of polluted wells, and extension of night soil conservancy, with proper burial of dejecta. Two additional public latrines, in addition to the five existing, have been sanctioned by the Local Board, and will be erected in 1910.

34. Batticaloa.—The water supply is entirely from wells and therefore unsatisfactory, as all are more or less open to pollution. Some trial wells with pumping plant at the bar for the supply of the town have been established. Drainage is defective. Extensive low-lying tracts in the town are converted into pools after a small fall of rain, and stagnate, providing breeding places for mosquitoes and giving off offensive odours. The scavenging and conservancy are insufficient. Only a few houses have adopted the dry-earth system of conservancy. Cesspits are numerous; the surface pollution of the soil and the high cadjan fences are insanitary features.

35. Anuradhapura.—The sanitary state of the town was good during the year. Three *pokunas* or tanks were cleaned out and a large amount of impurity removed. The water supply, as the result of the drought, was poor both in quantity and quality. The Local Board effected some improvement by filling up hollows. Overcrowding in the native quarters continues. A water scheme for this town has been under consideration.

36. Kurunegala.—The water supply is still unsatisfactory. It is expected that the new scheme for a proper supply now under consideration will be taken in hand shortly. The Local Board has effected some improvements in the matter of drainage and latrines, but paucity of funds renders the progress slow. The town retains its reputation for malaria, which is conducted by the extensive paddy cultivation. Cesspits are in dangerous proximity to wells.

37. Badulla.—A separate water supply was constructed for the hospital during the year, and an improved supply to the town is desirable. Scavenging and drainage are satisfactory.

38. Ratnapura.—A water supply from a reservoir has been carried out during the year; it is good in quality, and meets the requirements of a fair number of the residents. Wells open to pollution are common. Drainage leaves much to be desired. An additional public latrine is to be shortly erected, making three in all.

#### SECTION V.—GENERAL.

39. *Medico-legal.*—The Government Analyst submitted 229 reports on examinations made by him during the year in connection with 601 specimens. There were 171 judicial cases involving the examination of 465 productions. Of these, 95 were cases of poisoning or suspected poisoning, in 44 of which some poison was found. Arsenic was found in 23 instances, mercury salts in 12. 161 articles were examined for blood stains, in 56 of which they were found; seminal stains were found in 5. Concerning substances sent for examination as to the presence of opium and ganja, 47 specimens were analysed and opium was found in 12 and ganja in 9. The Government Analyst reports the discovery of a poison in the tuberous root *hondala* (*Moddeca balmata*), which is used as an article of diet by the natives. It contains a cyanogenic glucoside, which explains the occasional fatal effect following its use.

40. *Opium.*—At the end of the year the members of the Opium Commission submitted their report, in which it was recommended that the sale of opium should be a Government monopoly; that the sale should be undertaken by officers of the Medical Department; that all consumers of the drug should be registered and allowed only a certain amount of the drug a month; that the persons practising medicine according to native methods (called *vedaralas*) should be registered and allowed a definite amount of opium for *bona fide* native medical practice every six months. A new draft Opium Ordinance was taken in hand.

41. *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

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The second part of the report deals with the specific details of the ...

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The fourth part of the report deals with the personnel aspects of the ...

The fifth part of the report deals with the technical aspects of the ...

The sixth part of the report deals with the legal aspects of the ...

The seventh part of the report deals with the administrative aspects of the ...

The eighth part of the report deals with the miscellaneous aspects of the ...

The ninth part of the report deals with the concluding remarks of the ...

The tenth part of the report deals with the appendixes of the ...

The eleventh part of the report deals with the references of the ...

The twelfth part of the report deals with the index of the ...



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; 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.

There were 73 hospitals and asylums in working, 400 Government dispensaries, and 220 estate dispensaries. No new hospitals were completed during the year, but the Lady Ridgeway Memorial Hospital for children subscribed for by the public, a hospital at Veyangoda to be established by the munificence of Mrs. J. P. Obeyesekere, another at Moratuwa by the munificence of Mr. Charles de Soysa, were in course of construction. New Government hospitals were commenced at Koslanda and Muppane. Extensive reconstruction of the hospitals at Kelebokka and Medagama were carried out, and several other hospitals in connection with His Excellency the Governor's five-year programme have been under consideration. New dispensaries were opened at Ambalangoda in the Southern Province, Padukka in the Western Province, and Mampuri in the North-Western Province. Two new operating rooms with sterilizing and anæsthetizing rooms for the pauper section and a new operating room for the paying section of the General Hospital were completed during the year.

The building of a new out-patient department for Colombo was commenced in September.

The latrines and kitchens of many of the hospitals have been rendered fly-proof, and the hospitals in malarious districts have been provided with mosquito-proof wards for male and female patients.

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

43. *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 16 European qualified matrons and sisters, 37 European Roman Catholic sisters (untrained), 32 matrons (trained locally), 26 nurses (trained locally), and 33 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 nine 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.

44. *Numbers treated.*—The total number of in-patients treated in all the hospitals and asylums of the Colony was 78,065. The deaths amounted to 9,046, giving a death-rate per cent. of 11.58 of the hospital population. At the Government dispensaries 1,414,030 new cases were treated; the number of individual visits paid to Government dispensaries was 1,954,036.

45. *Surgical Operations.*—3,487 operations in general surgery were performed in all the hospitals, with 99 deaths, a death-rate of 2.83 per cent. Operations on the eye, not included in the above, amounted to 867.

46. *General Hospital, Colombo.*—During the year under review 12,726 cases (including 448 remaining on December 31, 1908) were under treatment: 700 of these were admitted into the paying section and 11,578 into the pauper section. Of the total number treated, 10,823 were discharged, 1,847 died, and on December 31, 1909, 416 remained in hospital. The percentage of deaths to number treated was 11.68. The daily average number of patients in hospital was 482.40. Of these, 32.22 were in the paying section and 450.16 in the pauper section. 1,871 surgical operations were performed by the surgeons of the hospital (1,650 in the pauper section and 221 in the paying section), with a total mortality of 36, or 1.92 per cent. The percentage of deaths to total treated in the pauper section was 12.5, as against 10.5 last year, and in the paying section the percentage of deaths to total treated was 5.5, as against 10.8 in 1908.

The receipts in the pauper section amounted to Rs. 230.10, and the expenditure (not including upkeep of buildings, equipment, medical attendance, nursing, drugs, and surgical appliances) was Rs. 106,178.02. The receipts in the paying section were Rs. 56,296.90, and the expenditure (not including medical attendance, upkeep of buildings, nurses, drugs, and surgical material) was Rs. 43,180.57, showing a credit balance of Rs. 13,116.33. Owing to the increased rates charged to patients, authorized in January, 1909, this year is the first in which the paying section of the hospital has not been conducted at a very great loss.

Dr. G. Thornton, M.D., M.R.C.P., was appointed Resident Medical Superintendent of the General Hospital at the end of 1908. In October Dr. H. M. Fernando, M.D., resigned his appointment as Senior Physician, which he had filled with conspicuous ability and success for ten years. He was on the staff of the hospital for nineteen years altogether. The Government marked its appreciation of Dr. H. M. Fernando's services by appointing him to the consulting staff of the hospital on his retirement.

47. *Houses of Observation for suspected Lunatics.*—There are four of these institutions in the Island: one in Colombo, one in Kandy, one in Galle, and one in Jaffna. 277 patients were admitted under observation.

48. *De Soysa Lying-in Home.*—The total number of patients treated in this institution in 1909 was 1,112, as against 1,074 the year previous. Of these, 1,039 were discharged cured and relieved, 12 were removed by relatives, 22 were transferred to the General Hospital for the treatment of intercurrent disease, 17 died, and 22 were remaining at the end of the year. The percentage of deaths to total treated was 1.53, as against 1.48 the year previous.

The Medical Superintendent of the Lying-in Home has reported on the gravity of anchylostomiasis and a complication of pregnancy, 2 cases out of 19 having succumbed at the institution during the year



The first part of the report deals with the general situation of the country and the progress of the various branches of industry and commerce. It is found that the country has made considerable progress in the last few years, and that the various branches of industry and commerce are all flourishing.

The second part of the report deals with the financial situation of the country. It is found that the country has a strong financial position, and that the various branches of industry and commerce are all well supplied with capital. It is also found that the country has a large and increasing population, and that the various branches of industry and commerce are all well supplied with labor.

The third part of the report deals with the social situation of the country. It is found that the country has a high standard of living, and that the various branches of industry and commerce are all well supplied with the necessary facilities. It is also found that the country has a large and increasing population, and that the various branches of industry and commerce are all well supplied with labor.

The fourth part of the report deals with the political situation of the country. It is found that the country has a strong and stable government, and that the various branches of industry and commerce are all well supplied with the necessary facilities. It is also found that the country has a large and increasing population, and that the various branches of industry and commerce are all well supplied with labor.

The fifth part of the report deals with the military situation of the country. It is found that the country has a strong and well-equipped military, and that the various branches of industry and commerce are all well supplied with the necessary facilities. It is also found that the country has a large and increasing population, and that the various branches of industry and commerce are all well supplied with labor.

The sixth part of the report deals with the naval situation of the country. It is found that the country has a strong and well-equipped navy, and that the various branches of industry and commerce are all well supplied with the necessary facilities. It is also found that the country has a large and increasing population, and that the various branches of industry and commerce are all well supplied with labor.

The seventh part of the report deals with the international situation of the country. It is found that the country has a strong and well-equipped international position, and that the various branches of industry and commerce are all well supplied with the necessary facilities. It is also found that the country has a large and increasing population, and that the various branches of industry and commerce are all well supplied with labor.

In the Lying-in Home 37 pupil midwives received training during the year, of whom 20 obtained certificates after passing a satisfactory examination. Of these, 16 were Sinhalese, 3 Burghers, and 1 European. No Tamils were trained.

The desirability of providing estate labourers with trained Tamil midwives is obvious, and the adoption of measures to secure this is a matter for consideration, and would doubtless be conducive to reducing the infant mortality on estates, in addition to ensuring modern scientific and aseptic methods of treatment of parturition and the puerperium.

156 obstetric operations were performed at this institution during the year.

49. *The Lady Havelock Hospital.*—The total number of patients treated during 1909 was 808, as compared with 913 the year before. The mortality rate was 6·8 per cent. Thirty-four surgical operations were performed, with one death. The daily average sick was 29·84.

The number of attendances at the female outdoor dispensary during the year was 32,244, with a daily average of 103.

50. *The Victoria Memorial Eye Hospital and Grenier Outdoor Dispensary.*—There were 709 admissions to the eye hospital during the year, 31 of whom were paying patients. The daily average sick was 43·40. The expenditure was Rs. 10,755·29, and the receipts Rs. 2,739·16; the nett cost for the year was therefore Rs. 8,016·13. The number of operations performed on in- and out-patients was 867. The institution is growing in repute and popularity, and at times its accommodation is severely taxed.

51. *Police Hospital, Colombo.*—636 patients were treated in this hospital, as compared with 505 the year previous. One patient died. The daily average of sick was 12·16, as compared with 8·57 in 1908.

52. *Branch Hospitals at Colombo and Galle for the Treatment of Women suffering from Venereal Diseases.*—445 patients were treated in the Colombo institution, showing an increase of 60 over the return for the previous year. The average daily sick was 18·70. At the Galle Branch Hospital 119 patients were treated, as compared with 160 the year previous. The daily average sick was 8·41.

53. *Jail Hospitals and Sick Prisoners.*—In 1909 15,971 prisoners were admitted into the different jails of the Island. The average daily strength of prisoners was 3,348·21. The number treated in jail hospitals during the year was 8,319, as compared with 5,667 the year previous. The total number of deaths was 346 in 1909, as against 205 in 1908. The following table gives the number of admissions, number of deaths, average strength, death-rate to admission to jail hospitals, and to average strength during 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. |
|---------|-------------------------|-------------------|--------------------------------------|-------------------------------------|---|
| 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                                     |
| 1909 .. | 8,319 ..                | 346 ..            | 3,348·21 ..                          | 4·15 ..                             | 103·33                                    |

Of the diseases which caused so much increased sickness and high death-rate, bowel diseases head the list with 3,015 admissions and 140 deaths for diarrhoea, and 827 admissions with 59 deaths for dysentery. There were 1,050 admissions for malaria, with 10 deaths; 206 cases of injury, with 1 death. Admissions for all other diseases totalled 3,221, with 136 deaths. The only bright spot in the above gloomy record is that there were only 4 cases of enteric fever, 2 of which died.

#### Colombo Jails.—

|               | Average Daily Strength. | Average Daily Sick. | Per Cent. Sick to Strength. | Total Deaths. | Per Cent. Deaths to Strength. |
|---------------|-------------------------|---------------------|-----------------------------|---------------|-------------------------------|
| Welikada ..   | 759·74 ..               | 49·26 ..            | 6·48 ..                     | 117 ..        | ·042                          |
| Mutwal ..     | 387·63 ..               | 24·94 ..            | 6·43 ..                     | 46 ..         | ·033                          |
| Hulftsdorp .. | 149·22 ..               | 2·53 ..             | 1·70 ..                     | 7 ..          | ·013                          |
| Mahara ..     | 597·70 ..               | 25·59 ..            | 4·28 ..                     | 34 ..         | ·016                          |

Welikada, Mutwal, and Mahara are "hard labour" jails, and the increase in the sick- and death-rates was among the "hard labour" prisoners. The sick-rate at Mutwal was 50 per cent. over the previous year, and the death-rate three times as much. At Mahara the sick- and death-rates were double those of 1908. The health is somewhat better at present, which may be attributed to a concession granted to the Jail Medical Officers to recommend a better diet to prisoners who appeared to be not getting sufficient nourishment, and to recommend fractions of the tasks allotted to prisoners who were too weak to perform whole tasks. A further alteration in the diet of prisoners was made in November by the introduction of the No. 1 penal diet (bread and water) for the first fortnight of a prisoner's sentence, but a good diet was allowed after the second month.

54. *Kanatta Infectious Diseases Hospital.*—956 cases of infectious diseases were treated at this institution during the year, as against 1,739 in the year previous. The diseases included smallpox 192, with 46 deaths; chickenpox 614, with 2 deaths; acute diarrhoea 4, all of which died; measles 106, with 1 death; mumps 26, without mortality; cases under observation 14, with 1 death.

55. *The Victoria Home for Incurables, Colombo.*—At this institution 60 remained on December 31 of the previous year, 20 were admitted during the year, making a total of 80 cases, of whom 6 were discharged and 8 died; 66 remained on December 31, 1909.

56. *Bacteriological Institute and Clinic for Tropical Diseases.*—The total number of specimens sent for bacteriological examination was 2,000. The fees collected were Rs. 581. The building used as a clinic for tropical diseases is not very suitable for this purpose. It is a portion of the old lunatic asylum converted to its present use. For purposes of research it will be necessary to provide a new clinic in the

The first section of the report deals with the general condition of the country during the year. It mentions the various crops and the state of the weather. It also refers to the state of the treasury and the public debt.

The second section contains a detailed account of the various departments of the government. It describes the work done in each department and the progress made during the year.

The third section is devoted to a description of the various public works and improvements that have been carried out during the year. It mentions the construction of roads, bridges, and other public buildings.

The fourth section contains a list of the various public officers and their names. It also mentions the names of the various public institutions and their heads.

The fifth section is a summary of the various public accounts and the state of the treasury. It mentions the various sources of revenue and the amount of the public debt.

| Year | Revenue   | Expenses  | Balance |
|------|-----------|-----------|---------|
| 1875 | 1,000,000 | 800,000   | 200,000 |
| 1876 | 1,200,000 | 900,000   | 300,000 |
| 1877 | 1,500,000 | 1,000,000 | 500,000 |
| 1878 | 1,800,000 | 1,200,000 | 600,000 |
| 1879 | 2,000,000 | 1,400,000 | 600,000 |
| 1880 | 2,200,000 | 1,600,000 | 600,000 |

The sixth section is a summary of the various public works and improvements that have been carried out during the year. It mentions the construction of roads, bridges, and other public buildings.

| Year | Revenue   | Expenses  | Balance |
|------|-----------|-----------|---------|
| 1881 | 2,500,000 | 1,800,000 | 700,000 |
| 1882 | 2,800,000 | 2,000,000 | 800,000 |
| 1883 | 3,000,000 | 2,200,000 | 800,000 |
| 1884 | 3,200,000 | 2,400,000 | 800,000 |
| 1885 | 3,500,000 | 2,600,000 | 900,000 |

The seventh section is a summary of the various public works and improvements that have been carried out during the year. It mentions the construction of roads, bridges, and other public buildings.

The eighth section contains a list of the various public officers and their names. It also mentions the names of the various public institutions and their heads.

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near future. The most convenient locality would be in the grounds of the General Hospital, when the rebuilding of that institution is decided upon.

Research work was carried out by the Director (Dr. Castellani) in the following subjects:—

- (1) Tropical diseases of the respiratory organs, bronchomycosis and bronchial spirochaetosis.
- (2) A peculiar kind of diarrhoea due to a new species of *Spirillum*, *S. indicum* (Castellani).
- (3) Several skin diseases not yet described, such as *Keratoma plantare sulcatum*, *Chloasma bronzinum*, *Acro-dermatitis*, *Vesiculosa*, &c.
- (4) A new species of fungus causing dhoby itch.

The details of the above investigations will be found described in the reports to the Advisory Committee of the Tropical Diseases Research Fund.

57. *Total Hospital Deaths.*—The total deaths numbered 9,046, as compared with 9,352 in 1908. A table showing the death-rate per centum in the various hospitals and asylums of the Island for the year, as compared with the last year, is given below, the death-rates among mixed races and immigrant Indians being shown separately:—

| Hospitals.         | Mixed Races. |             | Indians.     |              | Total.       |              |
|--------------------|--------------|-------------|--------------|--------------|--------------|--------------|
|                    | 1908.        | 1909.       | 1908.        | 1909.        | 1908.        | 1909.        |
| Civil ..           | 7.87         | 8.60        | 18.41        | 19.44        | 10.47        | 10.88        |
| Field ..           | 4.77         | 4.88        | 13.55        | 11.71        | 6.29         | 5.95         |
| Immigrant ..       | 4.32         | 4.09        | 6.12         | 8.44         | 4.74         | 5.52         |
| District ..        | 6.44         | 6.22        | 21.59        | 21.24        | 16.64        | 16.62        |
| Asylums ..         | 15.66        | 7.22        | 7.36         | 10.81        | 14.87        | 7.31         |
| Other Hospitals .. | 7.71         | 21.99       | 9.64         | 4.37         | 7.98         | 2.58         |
|                    | <u>7.68</u>  | <u>7.72</u> | <u>19.41</u> | <u>19.78</u> | <u>11.64</u> | <u>11.58</u> |

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

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. 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 hospital. Doulton's earthenware squatting plates have been introduced into most of the hospitals.

59. *Inspection.*—The hospitals and dispensaries were regularly inspected by myself and the Provincial Surgeons of the respective Provinces. The number of these visits of inspection are given in the return of each institution. The books were produced when called for and generally were found complete and kept up to date. The reports of these inspections were forwarded to Government when necessary.

60. *Food Supply.*—The provisions for the various hospitals were supplied by contractors approved by Government. The system works satisfactorily. The food is inspected by the medical officers of the hospitals before it is served to patients, and any samples not approved are rejected. Contractors offering inferior samples are fined.

61. *Dispensaries.*—There are 400 dispensaries in the Island: 347 of these are civil dispensaries and 53 district dispensaries in the planting districts. Besides the latter, there are 220 estate dispensaries, being 24 in excess of the previous year. In the Western Province there are 43 dispensaries, in the Central 62, in the Northern 50, in the Southern 48, in the Eastern 43, in the North-Western 48, in the North-Central 38, in Uva 36, and in Sabaragamuwa 32. In these dispensaries 1,414,630 patients were treated, who paid 1,954,036 visits, against 1,321,002 patients with 1,902,715 visits in 1908.

62. *Port Duties and Immigration.*—2,815 vessels called at the port of Colombo during 1909, as compared with 2,774 the previous year.

The total number of deck passengers from South Indian ports during the year was 1,555,196, as compared with 177,550 the previous year. The number of estate coolies was 79,497, as compared with 88,788 the year previous. The number of miscellaneous deck passengers was 75,609 in 1909, as compared with 88,762 in 1908. Of these arrivals, 12,670 were vaccinated at the vaccine station at the root of the Breakwater. Estate coolies are vaccinated at Ragama.

No case of plague was landed. Cases of smallpox, cholera, and scarlet fever were sent to the infectious diseases hospital. Disinfection of infected clothes was carried out satisfactorily.

63. *The Ragama Camp.*—The total number of estate coolies who passed through the Ragama Camp in 1909 was 80,526, as compared with 89,751 in 1908. Of these, 21,837 were from cholera-infected districts in South India or were cholera contacts, 1,648 were from smallpox-infected districts, 333 persons from plague-infected areas, being mostly Sepoys of the 98th Native Infantry sent to the camp by the Military Authorities for detention under observation during the required quarantine period, making a gross total of 23,818.—30,375 estate coolies were vaccinated, as compared with 31,619 in 1908. There were 3 cases of cholera in the camp during the year, one case proving fatal. No case of smallpox occurred in the camp during the year. The general health of the camp was good. The excreta were incinerated: a new incinerator on the lime-kiln pattern was introduced during the year and worked satisfactorily, supplementing the smaller one in use previously. The water service was improved by the installation of a powerful steam pump.

The first part of the report deals with the general situation of the country and the progress of the work done during the year. It is followed by a detailed account of the work done in each of the various departments of the Government.

The second part of the report deals with the financial statement of the Government for the year. It shows the total receipts and expenditure and the balance carried forward to the next year.

| Particulars             | 1911-12     | 1910-11     |
|-------------------------|-------------|-------------|
| Receipts                | 1,20,00,000 | 1,10,00,000 |
| Expenditure             | 1,15,00,000 | 1,05,00,000 |
| Balance carried forward | 5,00,000    | 5,00,000    |

The third part of the report deals with the various departments of the Government and the work done in each of them. It is followed by a detailed account of the work done in each of the various departments of the Government.

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64. *Medical College.*—The College consists of lecture hall, students' library, laboratories for chemistry, physiology, pathology, and biology, a dissecting room, offices, photographic rooms, museum, the Colonial Medical Library, and a separate building for lady students. There were 181 students in attendance at the end of the year, of whom 147 were registered medical students and 34 apothecary students, as compared with a total of 155 students during 1908. Ten students qualified in medicine and surgery and received their diplomas licensing them to practice, as compared with 16 in 1908. Seven apothecaries passed out, as against 10 in the previous year. A new medal for operative surgery has been endowed in perpetuity to commemorate Dr. Garvin's long connection with the College.

The number of students entering and passing out of the College is shown in the following table :—

| Examination.                 | Number of Candidates entering. | Number passed. | Percentage of Passes. |
|------------------------------|--------------------------------|----------------|-----------------------|
| Medical Preliminary          | 32                             | 17             | 53                    |
| First Professional           | 55                             | 25             | 45                    |
| Second Professional          | 20                             | 7              | 35                    |
| Third Professional, Part I.  | 13                             | 6              | 46                    |
| Third Professional, Part II. | 24                             | 10             | 42                    |
| Apothecaries' Entrance       | 29                             | 13             | 44                    |
| First Apothecaries           | 18                             | 13             | 72                    |
| Second Apothecaries          | 23                             | 7              | 30                    |

To encourage the apothecary students to enter the College and to join the Ceylon Medical Department, Government has abolished the fees that were formerly paid by them, and no certificates of having passed the final examination will be given in future.

The work at the College and the number of students have outgrown the accommodation; the rebuilding of the premises is now under consideration.

The fees collected during the year amounted to Rs. 34,362, and the nett cost of the institution to the revenue was Rs. 17,707. The nett cost to the Government per year for each student was about Rs. 90.

*Post-Graduate Lectures.*—This course of lectures to medical officers of outstations (for the seventh year) was held for a fortnight in March.

65. *The Medical Council.*—The work of the Council during the year 1909 was considerable, in connection with business of the College and the registration of medical practitioners, and the many petitions and inquiries with regard to applicants for registration occupied much time. Twenty practitioners were registered in 1909.

66. *Civil Medical Stores.*—The total cost of drugs, chemicals, and instruments in 1909 was Rs. 225,763.10, as against Rs. 244,215.78 in 1908, showing a saving of Rs. 18,452.68, notwithstanding that with the yearly extension of the Department more drugs, &c., were used. This saving is due to the fact that the Crown Agents now submit our requisitions to tender in the open market. 76,679 ounces of quinine were issued, which cost Rs. 42,273.45. The cost of repairing surgical instruments was Rs. 1,055.99. The cost of transport was Rs. 6,743.51. The sale of medicines to Government Departments and others was to the value of Rs. 953.61, and the sale of medicines, &c., to estates realized Rs. 1,859. The sale of unserviceable articles realized Rs. 468.75, and the value of instruments sold, lost, and paid for by officers of the Department amounted to Rs. 605.08.

67. *Strength of the Medical Department.*—The following was the strength of the Medical Department during the year :—1 Principal Civil Medical Officer, 1 Assistant Principal Civil Medical Officer, 1 Registrar of the Ceylon Medical College, 1 Director of the De Soysa Bacteriological Institute, 1 Assistant Bacteriologist, 1 Professor of Chemistry, 1 Professor of Physics, 1 Government Analyst, 9 Provincial Surgeons, 1 Superintendent of the General Hospital, Colombo, 1 Superintendent, Leper Asylum, 3 Medical Women, 30 Medical Officers Grade I., including 1 Medical Woman, 33 Medical Officers Grade II., 64 Medical Officers Grade III., including 1 Medical Woman, 6 Health Officers, 243 Apothecaries, 1 Chief Storekeeper, 1 Chief Inspector of Vaccination, 8 Inspectors of Vaccination, and 130 Vaccinators.

68. *Changes in the Department.*—Dr. Margenout, who had been appointed Office Assistant to this office in January, 1909, was transferred to Jaffna as Acting Provincial Surgeon in May; Dr. Brohier succeeded him. Dr. Brohier was appointed Acting Provincial Surgeon, Western Province, in June. Dr. H. Bawa was transferred from the Port Surgeoncy, Colombo, to the Office Assistancy in November. Dr. van Langenberg from Tuticorin to the Port Surgeoncy of Colombo. Dr. L. A. Prins to Tuticorin, as Quarantine Medical Officer. The resignation of Dr. H. M. Fernando in November resulted in Dr. F. Grenier, Second Physician, being appointed First Physician of the General Hospital. Dr. L. A. E. de Zilwa succeeded Dr. Grenier as Second Physician. Dr. Garvin Mack to be Third Physician on his return from leave in Europe.

The following officers were promoted :—

- Dr. H. Huybertsz, Medical Officer Grade I., to Provincial Surgeon, North-Central Province.
- Dr. W. Margenout, Medical Officer Grade I., to Provincial Surgeon, Northern Province.
- Dr. A. de Saram, Medical Officer Grade I., to Provincial Surgeon, Province of Sabaragamuwa.
- Dr. L. C. Brohier, Medical Officer Grade I., Acting Provincial Surgeon, Western Province.
- Dr. A. Kalenberg, Medical Officer Grade I., to Acting Provincial Surgeon, Eastern Province.

The following officers were promoted from Grade II. to Grade I. :—Drs. W. C. Peiris, E. P. Aserappa, S. C. Paul, G. W. van Twest, R. F. La Brooy, C. S. Ratnam, F. R. Alles, E. N. Jan, and L. A. Ekanayaka.

The following officers of Grade III. were promoted to Grade II. during the year :—Drs. Kylasapillai, S. F. G. Danforth, R. C. Seenicutty, A. Chinniah, A. E. Weinman, J. S. Amerasekera, K. Chittampalan, J. R. Jeremiah, A. Ludowyk, C. Diekman, and L. de La Harpe.

The following officers retired from the Medical Service during the year :—Dr. F. G. Spittel, Dr. O. Johnson, and Dr. J. W. de Hoedt, all Provincial Surgeons; Dr. E. E. Modder, Medical Officer Grade I.; and Dr. J. W. Wright, Medical Officer Grade III.



The following table shows the number of alienations in each of the four categories of alienations in 1964. The total number of alienations is 1,234. The number of alienations in each category is as follows:

| Category   | Number of Alienations |
|------------|-----------------------|
| Category 1 | 345                   |
| Category 2 | 234                   |
| Category 3 | 456                   |
| Category 4 | 200                   |
| Total      | 1,234                 |

The following table shows the number of alienations in each of the four categories of alienations in 1965. The total number of alienations is 1,345. The number of alienations in each category is as follows:

| Category   | Number of Alienations |
|------------|-----------------------|
| Category 1 | 356                   |
| Category 2 | 245                   |
| Category 3 | 467                   |
| Category 4 | 277                   |
| Total      | 1,345                 |

The following table shows the number of alienations in each of the four categories of alienations in 1966. The total number of alienations is 1,456. The number of alienations in each category is as follows:

| Category   | Number of Alienations |
|------------|-----------------------|
| Category 1 | 367                   |
| Category 2 | 256                   |
| Category 3 | 478                   |
| Category 4 | 355                   |
| Total      | 1,456                 |

The following table shows the number of alienations in each of the four categories of alienations in 1967. The total number of alienations is 1,567. The number of alienations in each category is as follows:

| Category   | Number of Alienations |
|------------|-----------------------|
| Category 1 | 378                   |
| Category 2 | 267                   |
| Category 3 | 489                   |
| Category 4 | 433                   |
| Total      | 1,567                 |

The following officers resigned during the year:—Dr. H. M. Fernando Grade I.; Dr. (Miss) W. Nell Grade II. (to join the Registrar-General's Department); and Drs. J. W. E. Mendis, J. S. R. Guna-wardene, H. P. Wijesinghe, C. A. Amarasuria, D. W. Perera, H. J. Hazari, all of Grade III.

The deaths in the Department were Dr. W. Wijesekera, Dr. P. S. Wijesinghe, and Dr. W. A. Joshua.

69. *Expenditure.*—The expenditure of the Department under votes, exclusive of expenditure under the Medical Aid Ordinance, amounted to Rs. 1,852,285.71, against Rs. 1,803,416.01 in the previous year. Under Personal Emoluments the expenditure was Rs. 716,631.13, against Rs. 700,990.73 in the previous year. The expenditure under Other Charges was Rs. 1,135,654.58, against Rs. 1,102,425.28 in the previous year. The receipts on account of paying patients in hospitals amounted to Rs. 82,318.84, against Rs. 72,976.92 in 1908. The collections at the civil outdoor dispensaries were Rs. 27,348.36, against Rs. 25,319.53 in 1908. The cost of medicines issued to the Estates Branch of the Department amounted to Rs. 139,128.89, against Rs. 135,805.05 in 1908; while the sale of medicines and superfluous articles, Medical College fees, &c., amounted to Rs. 45,529.85, exclusive of bills of health and rent, against Rs. 59,441.05, inclusive of bills of health and rent in 1908. The Port Surgeon's expenses are no longer paid through this Department. Deducting the receipts under the heads above specified from the expenditure, the nett expenditure, exclusive of Harbour Service and Plague Precautions, was Rs. 1,551,247.70, against Rs. 1,502,956.45 in 1908. The following statement shows the expenditure and receipts as compared with 1908:—

| <i>Expenditure.</i>           | 1908.     |    | 1909.     |    | Increase or<br>Decrease.<br>Rs. c. |
|-------------------------------|-----------|----|-----------|----|------------------------------------|
|                               | Rs.       | c. | Rs.       | c. |                                    |
| Personal Emoluments ..        | 700,990   | 73 | 716,631   | 13 | 15,640 40 (Increase)               |
| Other Charges ..              | 85,458    | 84 | 92,487    | 46 | 7,028 62 (Increase)                |
| Hospitals and Dispensaries .. | 1,016,966 | 44 | 1,043,167 | 12 | 26,200 68 (Increase)               |
| Total ..                      | 1,102,425 | 28 | 1,135,654 | 58 | 33,229 30 (Increase)               |
| Grand Total ..                | 1,803,416 | 1  | 1,852,285 | 71 | 48,869 70 (Increase)               |

#### *Credits.*

|   |           |    |           |     |                      |
|---|-----------|----|-----------|-----|----------------------|
| Amounts due by paying patients in hospitals ..  | 72,976    | 92 | 82,318    | 84  | —                    |
| Collections at dispensaries ..  | 25,319    | 53 | 27,348    | 36  | —                    |
| Cost of medicines issued to Estate Branch institutions  | 135,805   | 5  | 139,128   | 89  | —                    |
| Sale of medicines and superfluous articles, Medical College fees, and miscellaneous recoveries .. | 59,441    | 5* | 45,529    | 85† | —                    |
| Lunatic Asylum paying patients ..   | 6,917     | 1  | 6,712     | 7   | —                    |
| Total ..  | 300,459   | 56 | 301,038   | 1   | —                    |
| Nett Expenditure ..   | 1,502,956 | 45 | 1,551,247 | 70  | 48,291 25 (Increase) |

\* Inclusive of bills of health.

† Exclusive of bills of health and rent.

#### ESTATES BRANCH.

70. During the year 1909 there were 2,052 estates scheduled to 33 districts and 31 sub-districts, with 21 district hospitals and 30 dispensaries and 14 civil hospitals and dispensaries: to attend to the medical wants of which the following medical officers were employed:—Medical Officers First Grade 3, Medical Officers Second Grade 11, Medical Officers Third Grade 16, and 67 Apothecaries.

71. During 1909 there were 16,829 estate labourers treated in the district hospitals and civil constituted district hospitals, against 17,091 in 1908. Of these, 3,480 died—a death-rate of 20.67 per cent. Of the mixed races 18,310 were treated, of whom 1,475 died—a death-rate of 8.03 per cent.

72. In the civil hospitals, worked partly as district hospitals, the death-rate of estate labourers was 21.25 per cent., whilst in the district hospitals it was 20.40 per cent. The highest death-rate (38.50) among the estate labourers occurred in the Civil Hospital at Ratnapura, and the lowest (nil death-rate) in the Civil Hospital at Mulhalkele. The admissions into the former were 670 and into the latter 18.

73. The total number of days the estate labourers stayed in hospital was 410,880, an average of 24.41 days each; of these, 292,291 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 234,649, an average of 12.81 days.

74. The total number of estate labourers treated at the outdoor dispensaries was 73,320. The total number of estate labourers treated on estates was 34,659.

75. The total number of births reported from estates was 16,376, of which 7,940 were males 7,776 were females, and 660 were still births.

76. The number of deaths reported from estates was 14,028, of whom 6,901 were males, 7,120 were females, and in 1 case the sex was not stated.

The first section of the report deals with the general situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved.

The second section contains a list of the various projects and the results achieved. It is followed by a detailed account of the various projects and the results achieved.

| No. | Name of Project | Start Date | End Date | Status      |
|-----|-----------------|------------|----------|-------------|
| 1   | Project A       | 1/1/50     | 12/31/50 | Completed   |
| 2   | Project B       | 1/1/50     | 12/31/50 | In Progress |
| 3   | Project C       | 1/1/50     | 12/31/50 | Not Started |
| 4   | Project D       | 1/1/50     | 12/31/50 | Completed   |
| 5   | Project E       | 1/1/50     | 12/31/50 | In Progress |
| 6   | Project F       | 1/1/50     | 12/31/50 | Not Started |
| 7   | Project G       | 1/1/50     | 12/31/50 | Completed   |
| 8   | Project H       | 1/1/50     | 12/31/50 | In Progress |
| 9   | Project I       | 1/1/50     | 12/31/50 | Not Started |
| 10  | Project J       | 1/1/50     | 12/31/50 | Completed   |

The third section contains a list of the various projects and the results achieved. It is followed by a detailed account of the various projects and the results achieved.



77. *Medical Aid.*—The expenditure under the Medical Aid Ordinance amounted to Rs. 716,530·94 and the receipts to Rs. 390,359·90, leaving a deficit of Rs. 326,171·04:—

Statement of Medical Aid Receipts and Expenditure in the Civil and District Hospitals during 1909, showing the Deficit for the Year.

| RECEIPTS.   |           |            | EXPENDITURE.   |            |            |
|---|-----------|------------|--|------------|------------|
|   | Amount.   | Total.     |  | Amount.    | Total.     |
| <i>District Hospitals.</i>  | Rs. c.    | Rs. c.     | <i>District Hospitals.</i>   | Rs. c.     | Rs. c.     |
| 1. Diets payable by estates at 30 cents per day ..                      | 57,134 10 |            | 1. Diets for estate labourers and "others" ..  | 150,917 77 |            |
| 2. Diets payable by Government for "others" at 50 cents per day ..      | 48,542 0  |            | 2. Medicines supplied from Civil Medical Stores ..   | 40,894 49  |            |
| 3. Funeral expenses of "others" ..                                      | 1,357 55  |            | 3. Funeral expenses of estate labourers and "others" ..                                      | 4,687 49   |            |
| 4. (a) Medicines sold and prescriptions compounded at dispensaries ..   | 14,469 99 |            | 4. Salaries and allowances of medical officers, apothecaries, nurses, clerical staff, &c. .. | 142,000 23 |            |
| (b) Collections at dispensaries ..                                      | 2,461 08  |            | 5. Travelling expenses of medical officers, apothecaries, nurses, clerical staff, &c. ..     | 39,555 31  |            |
| (c) Medicines used by "others" in hospitals ..                          | 12,884 99 |            | 6. Construction, maintenance, and repairs to buildings ..                                    | 106,852 46 |            |
| (d) Medicines used by "others" in dispensaries ..                       | 7,031 59  |            | 7. Rent of outdoor dispensaries and hospitals ..   | 9,378 0    |            |
| 5. Due by estates for visits ..   | 24,535 0  |            | 8. Transport of medicines ..   | 5,587 62   |            |
| 6. Sale of drugs, unserviceable articles, garden produce, rents, &c. .. | 5,359 75  |            | 9. Equipment ..  | 18,080 97  |            |
| 7. Amount due for maintenance of "others" ..                            | 404 90    |            | 10. Wages of attendants, &c. ..  | 30,547 91  |            |
|   |           | 174,181 55 | 11. Contingencies ..   | 8,313 13   |            |
|   |           |            | 12. Printing ..  | 3,085 65   |            |
|   |           |            | 13. Medicines supplied to district dispensaries ..   | 19,977 10  |            |
|   |           |            |  |            | 579,887 13 |
|   |           |            | <i>Civil Hospitals.</i>  |            |            |
|   |           |            | 1. Diets for estate labourers ..   | 48,909 16  |            |
|   |           |            | 2. Medicines used by estate labourers in—  |            |            |
|   |           |            | (a) Hospitals ..   | 6,837 9    |            |
|   |           |            | (b) Dispensaries ..  | 796 14     |            |
|   |           |            | 3. Funeral expenses of estate labourers ..   | 1,844 12   |            |
|   |           |            |  |            | 53,386 51  |
|   |           |            | Medicines supplied to estate dispensaries ..   |            | 78,257 30  |
|   |           |            |  |            |            |
|   |           |            | Total ..   |            | 716,530 94 |
|   |           |            |  |            |            |
| Export duty ..  | —         | 209,765 50 |  |            |            |
| Deficit ..  | —         | 180,594 40 |  |            |            |
|   |           | 326,171 4  |  |            |            |
| Total ..  |           | 716,530 94 |  |            |            |

Colombo, May 26, 1910.

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

## APPENDICES.

### I.—REPORT ON MALARIA FOR 1909.

THE actual amount of malaria existing during 1909 may be gauged by the number of persons suffering from that disease who attended Government medical institutions for treatment. These institutions may be divided into two classes, the outdoor dispensary and the hospital. At the outdoor dispensaries 501,738 cases were treated, as against 502,307 in 1908; at the hospitals there were 11,117, as against 11,492 in 1908. The total numbers treated in dispensaries and hospitals were 512,855 in 1909 and 513,799 in 1908. The deaths from malaria in hospitals numbered 612 in 1909, as against 718 in 1908. There is no record of the numbers who died while under treatment at the outdoor dispensaries. The malarial cases treated in the jail hospitals and dispensaries are not included in the above figures.

2. The measures taken to eradicate malarial fever in 1909 were similar to those employed during the previous year, viz., (a) education, (b) improved sanitation, (c) quinine prophylaxis.

Under (a) the Provincial Surgeons when on inspection tours, the medical officers in charge of hospitals, and apothecaries in charge of dispensaries gave simple lectures on the cause and prevention of malaria to the villagers. Thirty-seven school teachers attended a course of sanitary instruction with special reference to malaria at the Medical College, Colombo. Four of the teachers were unable to complete the course; of the remainder, all but one obtained over 50 per cent. of marks in the examination held at the conclusion of the course. A simple syllabus on sanitation has been drawn up for the use of pupils in grant-in-aid vernacular training schools.

There was a wide distribution of pamphlets in the vernacular languages, setting forth in a simple manner the cause of malaria and its prevention.

3. Improvement in the general sanitation of small towns has been noticed during 1909: surface drains have been introduced into places where there was no drainage previously and extension of existing drains in others, brushwood has been cut down in the neighbourhood of dwellings, latrines have been

| Element      | Atomic Weight | Symbol | Atomic Number |
|--------------|---------------|--------|---------------|
| Hydrogen     | 1.008         | H      | 1             |
| Helium       | 4.003         | He     | 2             |
| Lithium      | 6.941         | Li     | 3             |
| Beryllium    | 9.012         | Be     | 4             |
| Boron        | 10.811        | B      | 5             |
| Carbon       | 12.011        | C      | 6             |
| Nitrogen     | 14.007        | N      | 7             |
| Oxygen       | 15.999        | O      | 8             |
| Fluorine     | 18.998        | F      | 9             |
| Neon         | 20.180        | Ne     | 10            |
| Sodium       | 22.990        | Na     | 11            |
| Magnesium    | 24.305        | Mg     | 12            |
| Aluminum     | 26.982        | Al     | 13            |
| Silicon      | 28.086        | Si     | 14            |
| Phosphorus   | 30.974        | P      | 15            |
| Sulfur       | 32.065        | S      | 16            |
| Chlorine     | 35.453        | Cl     | 17            |
| Argon        | 39.948        | Ar     | 18            |
| Potassium    | 39.098        | K      | 19            |
| Calcium      | 40.078        | Ca     | 20            |
| Scandium     | 44.956        | Sc     | 21            |
| Titanium     | 47.88         | Ti     | 22            |
| Vanadium     | 50.942        | V      | 23            |
| Chromium     | 51.996        | Cr     | 24            |
| Manganese    | 54.938        | Mn     | 25            |
| Iron         | 55.845        | Fe     | 26            |
| Cobalt       | 58.933        | Co     | 27            |
| Nickel       | 58.71         | Ni     | 28            |
| Copper       | 63.546        | Cu     | 29            |
| Zinc         | 65.38         | Zn     | 30            |
| Gallium      | 69.723        | Ga     | 31            |
| Germanium    | 72.63         | Ge     | 32            |
| Arsenic      | 74.922        | As     | 33            |
| Selenium     | 78.96         | Se     | 34            |
| Bromine      | 79.904        | Br     | 35            |
| Krypton      | 83.80         | Kr     | 36            |
| Rubidium     | 85.468        | Rb     | 37            |
| Strontium    | 87.62         | Sr     | 38            |
| Yttrium      | 88.906        | Y      | 39            |
| Zirconium    | 91.224        | Zr     | 40            |
| Niobium      | 92.906        | Nb     | 41            |
| Molybdenum   | 95.94         | Mo     | 42            |
| Technetium   | 98.906        | Tc     | 43            |
| Ruthenium    | 101.07        | Ru     | 44            |
| Rhodium      | 102.905       | Rh     | 45            |
| Palladium    | 106.363       | Pd     | 46            |
| Silver       | 107.868       | Ag     | 47            |
| Cadmium      | 112.411       | Cd     | 48            |
| Indium       | 114.818       | In     | 49            |
| Tin          | 118.710       | Sn     | 50            |
| Antimony     | 121.757       | Sb     | 51            |
| Tellurium    | 127.603       | Te     | 52            |
| Iodine       | 126.905       | I      | 53            |
| Xenon        | 131.29        | Xe     | 54            |
| Cesium       | 132.905       | Cs     | 55            |
| Barium       | 137.327       | Ba     | 56            |
| Lanthanum    | 138.905       | La     | 57            |
| Cerium       | 140.12        | Ce     | 58            |
| Praseodymium | 140.908       | Pr     | 59            |
| Neodymium    | 144.24        | Nd     | 60            |
| Europium     | 151.964       | Eu     | 61            |
| Gadolinium   | 157.25        | Gd     | 62            |
| Terbium      | 158.925       | Tb     | 63            |
| Dysprosium   | 162.50        | Dy     | 64            |
| Ho           | 164.930       | Ho     | 65            |
| Er           | 167.259       | Er     | 66            |
| Tm           | 168.930       | Tm     | 67            |
| Yb           | 173.054       | Yb     | 68            |
| Lu           | 174.967       | Lu     | 69            |
| Hafnium      | 178.49        | Hf     | 72            |
| Tantalum     | 180.948       | Ta     | 73            |
| Tungsten     | 183.84        | W      | 74            |
| Rhenium      | 186.207       | Re     | 75            |
| Osmium       | 190.23        | Os     | 76            |
| Iridium      | 192.222       | Ir     | 77            |
| Platinum     | 195.084       | Pt     | 78            |
| Gold         | 196.967       | Au     | 79            |
| Mercury      | 200.59        | Hg     | 80            |
| Thallium     | 204.38        | Tl     | 81            |
| Lead         | 207.2         | Pb     | 82            |
| Bismuth      | 208.980       | Bi     | 83            |
| Polonium     | 209           | Po     | 84            |
| Astatine     | 210           | At     | 85            |
| Radium       | 226           | Ra     | 88            |
| Actinium     | 227           | Ac     | 89            |
| Thorium      | 232.038       | Th     | 90            |
| Protactinium | 231.036       | Pa     | 91            |
| Uranium      | 238.029       | U      | 92            |
| Np           | 237           | Np     | 93            |
| Pu           | 244           | Pu     | 94            |
| Am           | 243           | Am     | 95            |
| Cm           | 247           | Cm     | 96            |
| Bk           | 247           | Bk     | 97            |
| Cf           | 251           | Cf     | 98            |
| Es           | 252           | Es     | 99            |
| Fm           | 257           | Fm     | 100           |

Table of elements with names and symbols.

Table of elements with names and symbols.



filled up, and pools of water drained, but no large works for the destruction of the malarial mosquito have been undertaken. I regret that the suggestion for the formation of "mosquito brigades" has not been followed.

It may be said that the attitude shown by the large majority of the people towards malaria is one of apathy; on the part of local authorities it is to a great extent due to want of money to carry out the necessary propaganda for the extermination of the anophelinae. In my opinion some legislative enactment is necessary to compel Municipalities, Local Boards, and the general public to carry out the ordinary simple means by which the eradication of malaria may be accomplished.

All Government hospitals in malarial districts are being provided with mosquito-proof wards for the reception of malarial fever patients.

4. The principal means in use in this Colony for the reduction of malaria is by the distribution of free quinine. This has had a marked effect in reducing the amount of this disease, particularly in the jails and schools; in other words, where it is given to people under discipline. The Manager of the C. M. S. Schools writes: "I have just returned from a tour round our schools, and though I could not in all cases get a report showing names of patients and dates when quinine was given with results of treatment, yet I did get these figures in one or two schools, and I am perfectly satisfied that the results of administering quinine regularly are not only beneficial, but acknowledged to be so by the people, so that they actually ask for the medicine. At one place in the jungle the attendance for the week preceding my visit was 31.2 per cent. of the possible total, which is splendid for this season. The teacher affirmed that had not quinine been administered regularly these results would have been impossible at this time of the year."

5. We have not tried here the effect on malaria of the introduction into large collections of water of small fish, which destroy the mosquito larvæ. Serious outbreaks of malaria in dry years have been noticed frequently in this country, and a probable reason for these outbreaks is the destruction of fish during droughts, as suggested by Lieut.-Col. J. Chaytor-White, I.M.S., at the Imperial Malaria Conference at Simla last year.

6. The total amount of quinine issued from the Civil Medical Stores was 76,679 ounces, which cost Rs. 42,273.45.

7. As in the previous year, a "spleen census" was taken towards the end of 1909. The estimated population of children under fifteen years of age was 1,633,711; in 1908 this population was estimated at 1,622,766. This year 317,694 persons were examined, and enlargement of the spleen was found in 66,141, as against 92,258 persons and 31,421 enlargements found in the 1908 census. The spleen rate this year was 20.81 and the average spleen 1.75; last year the spleen rate was 34.05 and the average spleen 2.29.

The following table gives in detail the number of people examined, the spleen enlargements, average spleen, and spleen rate by Provinces, and corroborates our constant experience in practice as to which Provinces are the most malarious:—

| Province.        | Number examined. | No. enlargement. | Total Enlargement. | Enlargement of Spleen. |         |        | Spleen Rate. | Average Spleen. |
|------------------|------------------|------------------|--------------------|------------------------|---------|--------|--------------|-----------------|
|                  |                  |                  |                    | Small.                 | Medium. | Great. |              |                 |
| Western ..       | 72,571           | 65,376           | 7,195              | 5,597                  | 1,302   | 296    | 9.91         | 1.27            |
| Central ..       | 43,263           | 38,768           | 4,495              | 2,786                  | 1,199   | 510    | 10.38        | 1.36            |
| Northern ..      | 34,646           | 24,330           | 10,316             | 6,231                  | 2,657   | 1,428  | 29.77        | 2.07            |
| Southern ..      | 57,534           | 52,232           | 5,302              | 2,851                  | 1,786   | 1,065  | 9.21         | 1.38            |
| Eastern ..       | 12,435           | 8,971            | 3,464              | 2,085                  | 882     | 497    | 27.85        | 2.00            |
| North-Western .. | 39,001           | 20,719           | 18,282             | 10,611                 | 5,690   | 1,981  | 46.87        | 2.67            |
| North-Central .. | 12,976           | 4,966            | 8,010              | 4,085                  | 2,345   | 1,580  | 61.72        | 3.50            |
| Uva ..           | 16,657           | 10,803           | 5,854              | 3,156                  | 1,856   | 842    | 35.14        | 2.34            |
| Sabaragamuwa ..  | 28,611           | 25,388           | 3,223              | 1,753                  | 797     | 673    | 11.26        | 1.45            |
| Total ..         | 317,694          | 251,553          | 66,141             | 38,755                 | 18,514  | 8,872  | 20.81        | 1.75            |

ALLAN PERRY, M.D.

## II.—REPORT ON THE LUNATIC ASYLUM, COLOMBO, FOR 1909.

I HAVE the honour to submit the annual report on this institution for the year 1909.

2. As it consists of two parts, technically distinct, though not physically separate, viz., the Asylum and the House of Observation, it is necessary to present the figures for the two parts separately. The asylum figures will be given first.

### A.—ASYLUM.

3. The number of patients remaining at the beginning of the year was 587 (359 males, 208 females).
4. During 1909 the number admitted was 184 (117 males, 67 females).
5. The total number under treatment was thus 751 (476 males, 275 females).
6. During the year 111 patients (81 males, 30 females) were discharged, and 54 (38 males, 16 females) died.



The first part of the report deals with the general situation of the country and the progress of the work during the year.

The second part of the report deals with the results of the work during the year and the progress of the work during the year.

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The eighth part of the report deals with the results of the work during the year and the progress of the work during the year.

| Year | Total |     | Male |    | Female |    |
|------|-------|-----|------|----|--------|----|
|      | No.   | %   | No.  | %  | No.    | %  |
| 1910 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1911 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1912 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1913 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1914 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1915 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1916 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1917 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1918 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1919 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1920 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1921 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1922 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1923 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1924 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1925 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1926 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1927 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1928 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1929 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1930 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1931 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1932 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1933 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1934 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1935 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1936 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1937 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1938 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1939 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1940 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1941 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1942 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1943 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1944 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1945 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1946 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1947 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1948 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1949 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1950 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1951 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1952 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1953 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1954 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1955 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1956 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1957 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1958 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1959 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1960 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1961 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1962 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1963 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1964 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1965 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1966 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1967 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1968 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1969 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1970 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1971 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1972 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1973 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1974 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1975 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1976 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1977 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1978 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1979 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1980 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1981 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1982 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1983 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1984 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1985 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1986 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1987 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1988 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1989 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1990 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1991 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1992 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1993 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1994 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1995 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1996 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1997 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1998 | 100   | 100 | 50   | 50 | 50     | 50 |
| 1999 | 100   | 100 | 50   | 50 | 50     | 50 |
| 2000 | 100   | 100 | 50   | 50 | 50     | 50 |

The following table shows the results of the work during the year and the progress of the work during the year.

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7. The number remaining at the end of the year was 586 (357 males, 229 females), an increase of 19 during the year. In the male division there was a decrease of 2; in the female division an increase of 21.

8. The daily average number of patients was 581·91 (males 360·15, females 221·76), an increase of 23·72 in the total number, and of 7·95 in males and 15·78 in females, as compared with the figures for 1908.

9. The largest number of males resident at one time was 375, of females 233, of both together 601. These maxima exceed those of 1908 by 11 in the case of males, by 20 in that of females, and by 29 in the total number.

10. The smallest numbers simultaneously resident were :—Males 350, females 208, both together 558. Compared with the minima in 1908, there was an increase of 15 in males, of 11 in females, and of 19 in both combined.

11. The actual increase is not large, but the overcrowding already existing renders it far more important than it would otherwise be.

#### B.—HOUSE OF OBSERVATION.

12. At the beginning of 1909 there were 9 persons (4 men, 5 women) in the House of Observation.

13. During the year 186 persons (132 males, 54 females) were admitted.

14. The total number treated was 195 (136 males, 59 females).

15. Of these, 103 (63 males, 40 females) were transferred to the Asylum; 75 (65 males, 10 females) were discharged, and 3 (all females) died.

16. The number remaining at the end of the year was 14 (8 males, 6 females).

17. Many of the cases were admitted and discharged more than once for technical reasons. The total number of cases, as distinct from persons, was 328 (227 males, 101 females).

18. The daily average number resident was 10·96 (7·01 males, 3·95 females). The greatest number resident at one time was 20 (of males 14, of females 8), and the smallest number 4. For brief periods there have been no male patients or no female patients in the House of Observation, but the periods have never coincided in the two divisions.

#### C.—THE WHOLE INSTITUTION.

19. It may be convenient to show in tabular form the figures for the Asylum and House of Observation together :—

|                                       |       | Males. | Females. | Total. |
|---------------------------------------|-------|--------|----------|--------|
| Remained                              | .. .. | 363    | 213      | 576    |
| Admitted                              | .. .. | 249    | 121      | 370    |
|                                       |       | <hr/>  | <hr/>    | <hr/>  |
| Total treated                         | .. .. | 612    | 334      | 946    |
|                                       |       | <hr/>  | <hr/>    | <hr/>  |
| Transferred from House of Observation |       |        |          |        |
| to Asylum                             | .. .. | 63     | 40       | 103    |
| Discharged                            | .. .. | 146    | 40       | 186    |
| Died                                  | .. .. | 38     | 19       | 57     |
| Remaining                             | .. .. | 365    | 235      | 600    |
|                                       |       | <hr/>  | <hr/>    | <hr/>  |
| Increase in 1909                      | .. .. | 2      | 22       | 24     |

20. The daily average number of residents in the institution was 592·87 (males 367·16, females 225·71), an increase of rather over 20, as compared with the average for 1908.

21. The greatest number simultaneously resident was 612; the maximum number of males 380 (an increase of 4) and of females 236 (an increase of 17). The aggregate increase was 28, or about 5 per cent. of the previous number; not a great increase in itself, but disproportionate (as already noted) in its effects in an institution already so greatly overcrowded. Fortunately it affected the female division chiefly, and that division is rather less congested than the male.

#### ADMISSIONS—ASYLUM.

22. The characteristics of the cases admitted were very much the same as in former years, and call for no fresh comment now. The total number admitted was just 50 less than in 1908, in which there was an abnormal increase in the admission rate. The diminution is fortunate; had it not occurred it would have been very difficult to find room for the additional number.

23. Of the 184 admissions, 91 (49 males, 42 females) were classed under "Mania"; 67 (45 males, 22 females) under "Melancholia"; 3 males under "Dementia"; 2 males under "Idiocy and Imbecility"; 10 (8 males, 2 females) under "Epileptic Insanity"; and 11 (10 males, 1 female) under the heading "Apparently not Insane."

#### DISCHARGES—ASYLUM.

24. The number discharged (111) was only one less than in 1908, which was the second highest in the history of the Asylum, and included 26 chronic cases sent to the Madras Asylum. The highest number ever attained was 127 in the year 1906, but it included 36 Tamils who were transferred to the Madras Asylum; and the number restored to liberty in 1909 was greater than in any previous year. The number of recoveries was also higher than that of any former year, except 1896.

25. Calculated on the admission rate, the percentage of recoveries was 42·39 (in males 40·15 per cent., in females 35·82 per cent.). This is considerably above the average for the last decade. The ratio to the total number treated was 10·38 per cent. (in males 11·34 per cent., in females 8·72 per cent.)





## DEATHS—ASYLUM.

26. The death-rate was low, the total number (54) being below the average for the previous ten years. The ratio both to the total number treated (7·19 per cent.) and to the average daily number (9·27 per cent.) was lower than in any year since 1900. In males the respective ratios were 7·94 per cent. and 10·55 per cent., in females 5·81 per cent. and 7·21 per cent. The causes of death were of the usual kinds; there were no deaths from suicide, accident, nor injury.

27. Among those who died was an old woman, the oldest patient as regards residence and probably the oldest also in age, who had spent more than half a century in the Asylum.

## DEATHS—HOUSE OF OBSERVATION.

28. Three patients (all females) died in the House of Observation; two of them must have been ailing for a long time prior to admission here.

## ADMINISTRATION.

29. The results in 1909 have been better than in 1908.

30. In last year's report I referred to an alteration in the dietary adopted in consequence of the occurrence of several cases of diarrhoea of a choleraic type. Dry fish was excluded from the list of food stuffs supplied, and a somewhat greater variety of diet introduced, and I believe that the improvement in the general health of the inmates is attributable, at least in part, to these changes. They involved some increase in the expenditure on diet, but I think it was fully justified.

31. In the early part of the year 2 cases of smallpox and 1 of chickenpox occurred among the patients, and 2 cases of smallpox among the attendants. The persons affected were removed to the Hospital for Infectious Diseases and made good recoveries.

32. *Expenditure.*—The amounts voted under the headings "Diets," "Contingencies," and "Funeral Expenses" proved insufficient, while there were small surpluses under "Equipment" and "Wages." A supplementary vote of Rs. 6,500 under "Diets" and of Rs. 3,000 under Contingencies were required; the deficit under "Funeral Expenses" was made up by a transfer of part of the savings under "Equipment."

## BUILDINGS.

33. During the year under review there have been no additions to the buildings, and expenditure on maintenance has been confined to the execution of small repairs. The wood and iron work greatly need re-painting, and the condition of the locks generally has been unsatisfactory for a long time past. The mortuary is in a dilapidated state; steps are being taken to rebuild it.

## INDUSTRIAL DEPARTMENT.

34. As I remarked last year, this department is financially moribund, though its capital is sufficient to ensure it a few more years of life. The accounts for 1909 show a diminution of its funds to the extent of Rs. 1,099·01, the amount at credit having fallen from Rs. 17,695·47 at the beginning of the year to Rs. 16,596·46 at its close. The operations of the department have been curtailed, but some progress has been made with the scheme to render the ground more available for the exercise and recreation of the patients, for which the ground inside the walls is quite insufficient.

## ESCAPES.

35. There were several attempts at escape, but only one was successful. The patient was not re-captured, and has been discharged from the books of the institution. The attendant responsible was dismissed.

J. B. SPENCE,  
Medical Superintendent.

1. The first part of the report deals with the general situation of the country and the progress of the work during the year. It is divided into two main sections: the first dealing with the general situation and the second with the progress of the work.

2. The second part of the report deals with the results of the work during the year. It is divided into two main sections: the first dealing with the results of the work in the various departments and the second with the results of the work in the various branches.

3. The third part of the report deals with the financial statement for the year. It is divided into two main sections: the first dealing with the income and the second with the expenditure.

4. The fourth part of the report deals with the general remarks and conclusions. It is divided into two main sections: the first dealing with the general remarks and the second with the conclusions.

5. The fifth part of the report deals with the recommendations for the future. It is divided into two main sections: the first dealing with the recommendations for the future and the second with the conclusions.

6. The sixth part of the report deals with the general remarks and conclusions. It is divided into two main sections: the first dealing with the general remarks and the second with the conclusions.

7. The seventh part of the report deals with the general remarks and conclusions. It is divided into two main sections: the first dealing with the general remarks and the second with the conclusions.

8. The eighth part of the report deals with the general remarks and conclusions. It is divided into two main sections: the first dealing with the general remarks and the second with the conclusions.

9. The ninth part of the report deals with the general remarks and conclusions. It is divided into two main sections: the first dealing with the general remarks and the second with the conclusions.

10. The tenth part of the report deals with the general remarks and conclusions. It is divided into two main sections: the first dealing with the general remarks and the second with the conclusions.

11. The eleventh part of the report deals with the general remarks and conclusions. It is divided into two main sections: the first dealing with the general remarks and the second with the conclusions.

12. The twelfth part of the report deals with the general remarks and conclusions. It is divided into two main sections: the first dealing with the general remarks and the second with the conclusions.

13. The thirteenth part of the report deals with the general remarks and conclusions. It is divided into two main sections: the first dealing with the general remarks and the second with the conclusions.