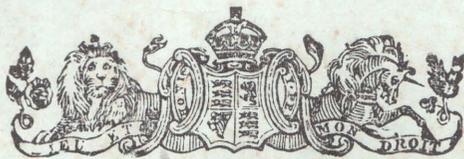


CEYLON.



# ADMINISTRATION REPORTS, 1912-13.

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PART V.—PUBLIC WORKS.

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PUBLIC WORKS DEPARTMENT.

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REPORT OF THE HON. MR. T. H. CHAPMAN, M.I.C.E.,

*Member of the Institute of Water Engineers,*

*Director of Public Works.*



## PART V.—PUBLIC WORKS.

## PUBLIC WORKS DEPARTMENT.

## REPORT OF THE DIRECTOR OF PUBLIC WORKS FOR 1912-13.

I HAVE the honour to submit the following report on the operations of the Public Works Department during the period July 1, 1912, to December 31, 1913.

2. The following statement gives the amounts voted and the expenditure under the respective headings in the Supply Bill for the financial period July 1, 1912, to June 30, 1913 :—

	Voted.		Spent.	
	Rs.	c.	Rs.	c.
Personal Emoluments (inclusive of Clerical Service) ..	795,850	0	736,674	33
Other Charges (inclusive of stationery, &c.) ..	137,000	0	112,728	69
Public Works Recurrent (inclusive of days' labour) ..	3,560,330	0	3,406,677	6
Public Works Extraordinary ..	2,680,481	0	2,368,184	34
Works chargeable to Surplus Balances and Loans ..	2,295,228	0	1,592,059	1
Total ..	9,468,889	0	8,216,323	43

3. The difference between the amounts voted and the expenditure incurred under the following headings is accounted for as follows :—

*Public Works Recurrent*, Rs. 153,652·94.—This amount represents the savings on 904 different estimates. The sum not spent is about 4 per cent. of the amount voted.

*Public Works Extraordinary*, Rs. 312,296·66.—A considerable proportion of this amount is accounted for by the inclusion of amounts in the Supply Bill for buildings which it was subsequently decided should stand over for future consideration; in other cases building operations were not commenced till late in the year owing to sites not being available, or because detail plans and estimates had not been prepared for them prior to the Supply Bill being passed. The sum not spent is about 11 per cent. of the amount voted.

*Works chargeable to Surplus Balances and Loans*, Rs. 703,168·99.—Owing to the delay in obtaining plant and materials from England, expenditure on the Colombo Lake Development Scheme fell short of that anticipated by Rs. 350,000. The further extension of the Medical College was postponed, and Rs. 135,000 consequently lapsed. The water supply scheme for Batticaloa was not commenced till late in the year, owing to delay in the acquisition of land and in the arrival of pipes; and the schemes for other supplies to minor towns, with the exception of Mannar, had not reached a stage to allow of work being proceeded with. Rs. 165,000 at the end of the year remained unexpended. Expenditure on the Colombo Customs quay wall and jetties also fell short of expectations, owing to the postponement of work on the baggage rooms at the passenger jetty and interference with the working of the Customs. In addition, the proposed leper asylum at Batticaloa was not proceeded with.

4. The following tabular statement shows the expenditure under the headings Recurrent, Extraordinary, and Miscellaneous, including Loans and Surplus Balances, during the last eighteen years, and is inserted for purposes of comparison :—

Year.	Recurrent.		Extraordinary.		Miscellaneous, including Loans, &c.	Total.
	Rs.		Rs.		Rs.	Rs.
1895 ..	1,756,001	..	1,286,889	..	—	3,042,890
1896 ..	1,823,558	..	1,219,106	..	—	3,042,664
1897 ..	1,726,669	..	1,838,650	..	—	3,565,319
1898 ..	1,900,307	..	1,510,143	..	369,324	3,779,774
1899 ..	2,040,684	..	1,707,119	..	1,250,125	4,997,928
1900 ..	2,029,279	..	1,610,261	..	1,074,665	4,714,205
1901 ..	2,112,905	..	1,348,032	..	666,028	4,126,965
1902 ..	2,163,394	..	1,448,491	..	572,143	4,184,028
1903 ..	2,240,086	..	1,339,699	..	1,275,968	4,855,753
1904 ..	2,286,812	..	1,858,657	..	619,275	4,764,744
1905 ..	2,324,805	..	1,595,612	..	370,431	4,290,848
1906 ..	2,582,398	..	1,901,588	..	133,083	4,617,069
1907 ..	2,648,741	..	1,929,416	..	227,081	4,805,238
1908 ..	2,684,811	..	1,781,145	..	1,080,706	5,546,662
1909 ..	2,796,779	..	1,637,134	..	1,203,400	5,637,313
1910-11 ..	4,511,611	..	2,313,423	..	3,048,443	9,873,477
1911-12 ..	3,211,341	..	2,017,577	..	2,022,372	7,251,290
1912-13 ..	3,406,677	..	2,368,184	..	2,471,462	8,216,323

5. In Appendix No. 1 will be found the expenditure on Public Works Annually Recurrent classified under the several sub-heads in the Supply Bill, and in Appendix No. 1A that charged to commutation and private contribution funds. In Appendix No. 2 will be found the expenditure on Public Works Extraordinary charged against votes in the Supply Bill and Supplementary Supply Bill, and in Appendix No. 2A that charged against private contribution funds. The total expenditure classified under the several headings of account in each Province, including that charged to loans and other funds, is shown in Appendix No. 3.

6. The total expenditure in the several Provinces was as follows:—

Province.	Public Works Annually Recurrent.		Public Works Extraordinary, including Surplus Balances, Loan Works, &c.		Total.	
	Rs.	c.	Rs.	c.	Rs.	c.
Western	1,038,544	9*	2,132,655	52*	3,171,199	61*
Central	534,356	49	353,085	69	887,442	18
Southern	289,190	20	115,859	33	405,049	53
Northern	205,420	53	155,350	65	360,771	18
Eastern	224,401	14	114,593	63	338,994	77
North-Western	330,460	36	231,994	34	562,454	70
North-Central	181,456	48	52,291	75	233,748	23
Uva	315,802	0	385,477	87	701,279	87
Sabaragamuwa	287,045	77	418,934	57	705,980	34
	3,406,677	6	3,960,243	35	7,366,920	41
			Establishment		736,674	33
			Other Charges		112,728	69
			Total		8,216,323	43

\* Including expenditure under heading 'Miscellaneous' (see Appendix No. 3).

#### MAINTENANCE AND IMPROVEMENT OF ROADS.

7. The roads of the Colony are classified under the following descriptions:—Metalled, Track Metalled, Gravelled, and Natural. The total length maintained during the period under review is as follows:—

Province.	Metalled. Miles.	Track Metalled. Miles.	Gravelled. Miles.	Natural. Miles.	Total. Miles.
Western	389.67	—	21.78	—	411.45
Central	605.38	—	63.42	56.38	725.18
Southern	300.60	—	23.59	—	324.19
Northern	326.58	33.03	64.13	77.15	500.89
Eastern	104.92	128.25	104.48	26.25	363.90
North-Western	323.10	40.50	104.29	29.00	496.89
North-Central	138.29	115.90	72.18	—	326.37
Uva	272.88	30.50	22.92	97.40	423.70
Sabaragamuwa	293.98	5.77	35.54	17.25	352.54
Total	2,755.40	353.95	512.33	303.43	3,925.11

8. In Appendix No. 4 will be found a return giving the name of each road, its length, description, and particulars in regard to the cost of maintenance.

9. The average cost per mile of road maintenance in the several Provinces of each of the descriptions was as follows:—

Province.	Metalled. Rs. c.	Track Metalled. Rs. c.	Gravelled. Rs. c.	Natural. Rs. c.	General Average. Rs. c.
Western	987 38	—	501 33	—	961 65
Central	1,088 10	—	362 2	77 14	946 0
Southern	1,227 34	—	496 37	—	1,174 15
Northern	613 71	787 72	358 12	110 25	514 91
Eastern	1,079 47	795 29	508 69	193 81	751 55
North-Western	661 18	588 40	321 74	10 0	546 0
North-Central	534 67	625 60	238 97	—	501 56
Uva	898 29	538 75	304 49	87 33	653 87
Sabaragamuwa	792 32	722 78	390 65	80 43	715 86

The general average throughout the Colony was:—Metalled, including track metalled roads, Rs. 880 per mile; gravelled roads, Rs. 377 per mile; and natural roads, Rs. 93 per mile.

10. It will be noted that there are now 3,925 miles of road in charge of the Public Works Department. Speaking generally, these roads were maintained in satisfactory condition during the period under review. There were, however, certain lengths of road in several of the Provinces the condition of which left much to be desired.

11. Roads that were quite suitable for the slow-moving bullock cart and horse traffic of a few years ago are not suitable for the faster and heavier traffic of to-day, and quickly go to pieces under it. This has been particularly noticeable in the roads over which motor coaches ply in the Southern and North-Western Provinces and in the roads leading out of Colombo, as well as on those roads in the Province of Uva on which the steam lorries and trailers of the Ceylon Planters' Transport Company, Limited, run.

12. In not a few instances considerable damage was done to roads by the unprecedented floods of 1913, and the work involved in putting these damages right retarded roadwork generally, and was in a large measure accountable for the poor condition of the roads in certain districts during part of the year.

13. The average cost of maintenance per mile of metalled roads as noted above was Rs. 880 per annum, and an increase on this figure may be looked for in future, for the supplies of suitable metal are becoming increasingly difficult to obtain, the rate of wages is rising, and last, but not least, a better and more lasting road surface is required to withstand the traffic that now uses the roads.

14. The rapid development of motor traffic, and the gradual but certain substitution of mechanical transport for the bullock cart, have set up conditions which necessitate wider and better roads, and a greater amount of attention and care on the part of those in charge of them.

15. The roads which mechanical transport will chiefly affect are those in the Western, Central, Southern, North-Western, Uva, and Sabaragamuwa Provinces, some 2,000 miles in all. Most of these roads run through mountainous or hilly country, and are narrow, tortuous, and steep, and to widen them throughout would take years to accomplish, and be a task manifestly out of the question in point of cost.

16. The construction of passing places at short intervals and within sight of each other along these roads is a practical solution of the difficulty, and one that can be expeditiously carried out. Work with this end in view is now in hand on 65 roads, and it is anticipated that all the more important Government roads, in distinction from branch roads in the planting districts, will be available for motor lorry traffic up to the 6-ton limit within the next two years, provided difficulties in regard to the granting of land for the widening of such roads are not raised by the owners of property abutting on them.

17. Permission has already been granted, to those applying for it, to use motor lorries of a gross weight of 6 tons on 18 roads and lorries up to 3 tons on 44 roads.

18. In order to secure better and closer attention to the care of roads and more efficient supervision of work generally, new districts were established in the Western and Sabaragamuwa Provinces, at Panadure and Pelmadulla respectively, from July 1, 1913, the charges of the other District Engineers in these Provinces being thereby considerably reduced.

19. A similar re-distribution of work is necessary in most of the other Provinces; the work in the districts has increased by the addition from time to time of new roads and buildings, and in many cases it is no longer possible for the officer in charge to efficiently and economically supervise it.

20. The more general use of steam rollers continues to give satisfactory results. There are now fifty of these rollers in use, and it is proposed to increase the number at the rate of twelve a year until they are generally available for the repair of all metalled roads.

21. Portable stone crushers are being introduced in certain districts where the demands for metal can no longer be supplied by cooly labour.

22. Among the more important roads the improvement of which has been in hand the following may be mentioned:—Ruwanwella-Veyangoda road; Kosgama-Pugoda road; Palapatwela-Galawela road; Hatton-Norwood road; North road, Matale District; Tawalantenna-Watagoda road; Matale-Rattota road; Underbank-Barrack Plain road, Nuwara Eliya; Galawela-Kalawewa road; Kandy-Haragama road; Lindula-Agras road; Vavuniya-Parayanalankulam road; Liyangahatota road; Tangalla-Hambantota road; Muppene-Pottuvil road; Narammala-Dummalasuriya road; Dankotuwa-Giriulla road; Bibile-Muppene road; Badulla-Bandarawela road; Wellawaya-Muppene road; Madampe-Hambantota road; and Pelmadulla-Balangoda road.

#### NEW ROADS.

23. The following have been completed during the period under review:—Pimbura-Kalawellawa road; Wattagama-Ukuwela road; St. Andrews-Pedro road, Nuwara Eliya; High Forest-Bramley road; road from Mannar market to South Bar; Bandarawela-Welimada road; and Kukul korale road.

24. *In the Western Province.*—The construction of the Kalawellawa-Bellapitiya road has been proceeded with, and the work is well in hand up to the 20th mile. This work has proved considerably more expensive than was originally anticipated, owing to alterations required to keep the road above recently ascertained flood levels.

25. *In the Central Province.*—Good progress has been made with the construction of the St. Margarets-Kirklees road, and 2 miles should be completed by May 31 next. The work on the Watagoda-Talawakele road has been well in hand, and the road is opened from Talawakele to Watagoda Factory, 3.16 miles.

26. *In the Southern Province.*—No progress has been possible with the construction of the Hakmana-Timbulketiya road, as the land required has not yet been acquired, and the owners object to their lands being entered pending acquisition.

27. *In the Northern Province.*—The Paranthan-Karachchi road construction was continued, the Pandichuddan-Kandavali road has been nearly completed, and the Puliyadi-irakkam-Madhu road opened to traffic. Progress has been made with the Talladi-Pappamodai road and the Manthai-Illuppaikadavai road.

28. *In the North-Western Province.*—Fair progress was made with the Alawwa-Dampelessa road, while work on the Mallowapitiya-Rambodagala road has made, on the whole, satisfactory progress.

29. *In the Province of Uva.*—The Taldena-Alutnuwara road has been completed to the 16th mile-post, and the cutting has been done for 1½ mile further. Progress has been slow owing to the large quantity of rock met with and the unhealthiness of the climate.

The Muppene-Pottuvil road has been completed to the 37th mile, and cut to the 38th milestone. The progress made has been satisfactory. The progress of work on the extension of the Bandarawela-Leangahawela road to Poonagala has been good, and the work is nearing completion. Work is in progress on the upper or Passara end of the Passara-Nakkala road construction, 3 miles being in hand. Labour from this road was taken to deal with more urgent work in connection with the repair of flood damages, and the progress made has in consequence been retarded.

30. *In the Province of Sabaragamuwa.*—The third and last section of 4½ miles of the Kukul korale road was completed, and the construction of the Woodend-Hunugewatta road commenced. Good progress is being made with the latter work. The construction of the Karandupone-Rambukkana road is being gradually proceeded with.

## INLAND NAVIGATION.

31. The Colombo-Kalutara and Colombo-Puttalam canals have been maintained in fair condition. Considerable silting up occurred after the floods of January and October in the latter near its junction with the rivers it crosses, but dredging was systematically carried out and the silt removed. The gradual adoption of boats of greater draught on these canals is worthy of notice, and is in a measure accountable for the complaints that have from time to time been made of the insufficient depth of water. The further deepening of these canals would involve widening them, as they run through sandy soil, and can only be carried out at considerable expense.

32. In the Eastern Province dredging operations have been continued in the channel between Batticaloa and Kiddanki, the whole length having been gone over by the dredger, the required depth of water being maintained.

## PUBLIC BUILDINGS.

33. The usual repairs have been effected, and the buildings generally maintained in a satisfactory condition.

## NEW BUILDINGS.

34. The construction of new buildings and additions to buildings throughout the Colony was energetically prosecuted during the period under review, no less than 485 different works being in hand.

35. There has been a marked increase in the cost of building materials generally, due to the demand being in excess of the supply. This has been particularly the case in and around Colombo, where building operations have been very active, both public and private.

36. The use of imported timbers from South India, the Straits Settlements, and Australia continues to increase; they can be more readily obtained than indigenous timbers, are better seasoned, and lower in price.

37. Tests are being made with Poilite tiles—a light roof covering prepared from asbestos—which, if successful in this climate, will result in a material reduction in the cost of roofing.

38. *In the Western Province.*—The following more important buildings have been completed:—District Engineer's quarters and office, Negombo; District Judge's quarters, Kalutara; anatomical block, Medical College, Colombo; Modara and Wellawatta police stations, Colombo; new Royal College, Colombo; Treasury extension, Colombo; and headquarters for Ceylon Engineer Volunteers.

39. The new hospital at Ingiriya has been practically completed, and progress has been made with the following works:—Quarters for District Engineer and the Assistant Superintendent of Police, Kalutara; dispensary at Mirigama; constables' quarters, Negombo; Laboratory Assistant's quarters, Colombo; quarters for nursing staff, Leper Asylum, Hendala; overseers' quarters, Welikada Jail; temporary wards, General Hospital, Colombo; warehouses on old coaling grounds, Colombo Customs; Master Attendant's Office, Colombo; and other buildings of minor importance.

40. *In the Central Province.*—The following new buildings have been completed:—Court-house, Teldeniya; quarters for chauffeur, Queen's Cottage, and for Assistant Provincial Registrar's clerk, Nuwara Eliya; a roller and cattle shed and powder magazine at Dimbula; and an infectious diseases hospital at Dikoya. In addition to the above, permanent coolie lines aggregating 43 rooms have been erected on various roads.

41. Work on the following buildings is in hand:—Public Works Department store, Gampola; quarters for matron and nurses, Deltota hospital; residence for the Colonial Secretary, Nuwara Eliya; quarters for (junior) clerks, Nuwara Eliya; District Judge's quarters, Hatton; quarters for District Engineers' clerks, Kandy and Dimbula; quarters for draughtsman, Peradeniya Gardens; quarters for Medical Officer, Maskeliya; and 40 rooms of permanent coolie lines on various roads.

42. *In the Southern Province.*—Quarters for the Forest Ranger at Yala, and ten rooms of permanent coolie lines on the Galle-Udugama and Galle-Akuressa roads were completed.

43. The Tissamaharama hospital was practically completed by the end of 1913, and the following buildings were in course of erection, satisfactory progress being made with most of them:—Quay wall and shed, Galle Customs; quarters for Police Magistrate, Matara; dispensary, Kamburupitiya; and quarters for Inspector of Police, Galle.

44. *In the Northern Province.*—The construction of the following buildings has been proceeded with:—Dispensary at Chempianpattu; police office and Inspector's quarters, Jaffna; and a post office at Jaffna Kachcheri.

45. *In the Eastern Province.*—The dispensaries at Tiriyai and Tanglegam and the plague camp at Trincomalee have been completed.

46. The following buildings were in progress:—A dispensary at Batticaloa and permanent coolie lines in the Trincomalee and Batticaloa Districts.

47. *In the North-Western Province.*—Quarters for the town overseer, Kurunegala, and for the Chief Clerk, Marawila Police Court, have been completed.

48. Steady progress has been made with the construction of quarters for clerks at Puttalam, where they are much needed, and a commencement has been made with the building of quarters for the Provincial Surgeon and police barracks, Kurunegala.

49. *In the North-Central Province.*—The quarters for the Assistant Conservator of Forests, the dispensary at Kahatagasdigiliya, and a metal-breaking shed at Anuradhapura jail were completed.

50. The extension of the Kachcheri, Anuradhapura, is nearing completion, and progress has been made with quarters for native writer and clerks.

51. *In the Province of Uva.*—A temporary ward to accommodate 36 beds was erected at Badulla hospital, and 45 rooms of permanent coolie lines on different roads were completed during the year.

52. The construction of the Passara hospital and infectious diseases hospital, Badulla, was in progress.

53. *In the Province of Sabaragamuwa.*—The hospital at Kendangamuwa was completed. This hospital provides accommodation for 50 patients, and, including the connected quarters and other necessary buildings, cost Rs. 1,253·83 per bed. A police station and barracks at Balangoda and quarters for four clerks at Ratnapura were completed.

54. Difficulties in connection with the site of the Undugoda hospital prevented this building from being completed, but it will be shortly ready for occupation. Progress was made with the new resthouse at Ratnapura. Considerable delay has taken place in the acquisition of the site for the Kitulgala hospital and the dispensary at Mawanella, but work has now been commenced on the latter building, and will be shortly put in hand on the former.

#### ADDITIONS AND IMPROVEMENTS TO BUILDINGS.

55. In addition to the minor alterations and improvements carried out under the general votes, the following have been carried out under separate provision :—

56. *In the Western Province.*—Additions to infectious diseases hospital, Kalutara; latrines, Negombo hospital. Connecting the following buildings in Colombo with the city sewers: Quarters of the Medical Superintendent, General Hospital; Technical Schools; Public Works Office; Surveyor-General's Office; Colombo Kachcheri; administration block, General Hospital; Victoria Memorial Eye Hospital; Queen's House servants' latrines; anatomical block, Medical College; all Government offices in Queen's street and Prince street; and Telegraph Office. Additions have also been completed: A science room, Training College; a new ward at the Soysa Lying-in Home; fixing a Keith rotary compressor, Analyst's laboratory; sickroom, &c., Women's Department, Training College; water supply, General Hospital; common room, Medical College; office and lavatory, Bacteriological Institute; 52 new kitchens, police barracks, Slave Island; record presses, Registrar-General's office; extension, Colombo Observatory; alterations to post office, Cinnamon Gardens; sunshades, Telephone Exchange; latrines and mortuary, Lunatic Asylum; ceilings, Court of Requests, Colombo; and roofs, Welikada Jail.

57. *In the Central Province.*—Additions have been completed to the following buildings :—Public Works Department office, Pussellawa; covered ways, Lindula hospital; Magistrate's and proctors' rooms, Police Court, Kandy; conversion of two houses at Nawalapitiya into post office and quarters; operating room, stores, &c., Teldeniya hospital; new roof and floors, Mulhalkele hospital.

58. Among the more important works in hand the following may be mentioned: (a) Medical officer's quarters, additional wards, and a mortuary, Nawalapitiya hospital (progress on these works has been slow owing to the extensive buildings in hand at Nawalapitiya in connection with the railway, on which rates for work considerably exceeded those allowed for on the hospital extension); (b) Nuwara Eliya hospital (satisfactory progress was made with the extensive alterations, which comprise new wards to accommodate 34 patients, new quarters for nurses, new mortuary, and the conversion of several of the old buildings to other purposes); (c) Kandy hospital (accommodation for lunatics, consisting of a block of cells with connected latrines); (d) Dimbula hospital (new female ward and kitchen); and (e) Kandy Kachcheri (tiffin room for clerks).

59. *In the Southern Province.*—Additions to the Weligama dispensary and the construction of an operating room at Hambantota hospital have been completed, while the following works are in hand :—Additional jetty, Galle Customs; warehouse accommodation, Customs, Galle; operating room, Balapitiya hospital; husk-beating shed, Galle prison; additions, Police Court, Matara; and improvements to record rooms, Hambantota Kachcheri.

60. *In the Northern Province.*—Wooden ceilings were fixed in several buildings which have Calicut-tiled roofs. The work is still in progress. Cement concrete floors have been laid to the grain sheds at Kankasanturai Customs, and improvements have been carried out to the police barracks and infectious diseases hospital, Jaffna, and court-house, Point Pedro.

61. *In the Eastern Province.*—Additions and improvements, including a new operating room, were completed at Trincomalee hospital, and also additions to the dispensary at Tiriyai and to the Provincial Engineer's office, Batticaloa.

62. *In the North-Western Province.*—The following works were carried out :—Improvements, Kurunegala hospital, comprising a ward of 14 beds, operating room, kitchen block, office for Provincial Surgeon, and connected covered ways; hospital ward, Chilaw jail; enlargements, court-house, Marawila; improvements, Magistrate's quarters, Chilaw.

63. *In the North-Central Province.*—Improvements to the Revenue Officer's quarters, Tamankaduwa; Cadet's quarters; and Survey Department premises, Anuradhapura, were completed, while the following are in hand: Store and additional rooms to Public Works Department premises, Maradankadawala; drains and well, District Engineer's quarters, Anuradhapura; drains round certain clerks' quarters, Anuradhapura; and additions to Assistant Land Clerk's quarters, Anuradhapura.

64. *In the Province of Uva.*—The following works of improvement were carried out: Medagama hospital, new kitchen and store; Badulla hospital, new operating room; water service and drains, District Engineer's quarters and office, Koslanda; re-roofing two wards, Buttala hospital; ceilings and drains, Badulla hospital; concrete flooring, draining, and improving Survey Camp, Diyatalawa; additional room and store, police station, Bandarawela; improving Rose Bank, Badulla, to render it suitable as quarters for the Provincial Surgeon.

65. *In the Province of Sabaragamuwa.*—The male and female parangi wards of the Kolonna hospital were improved by the substitution of brickwork for the old wattle and daub walls; the compound was also fenced with wire fencing. Two temporary wards each containing 24 beds were erected at Avissawella hospital, while the nurses' quarters at Karawanella hospital were added to. A maternity ward and a new kitchen and store were built at Kegalla hospital, and the old resthouse at Kegalla was converted into Kachcheri offices. The construction of a ward of 20 beds for females at Kegalla hospital was proceeded with.

#### BRIDGES.

66. The iron and timber bridges, exceeding 50 feet in span, the maintenance of which is not included in the provision for roads, were maintained in satisfactory order.

67. In the Province of Sabaragamuwa the cost of maintenance of timber platform bridges averaged Rs. 5.52 per lineal foot of span, against an average of 55 cents for bridges with permanent platforms. Much the same proportion holds good in the other Provinces, and the policy adopted in recent years of replacing obsolete and expensive timber platforms by permanent platforms as quickly as possible is thoroughly justified. During the period under review 4,926 lineal feet of bridges were converted or were in process of conversion from timber to permanent platforms.

68. Among the more important bridges which will have to be replaced shortly by a stronger and more permanent structure is the Gampola bridge across the Mahaweli-ganga, which has a clear span of 200 feet. Plans for this work are being prepared.

69. Among the new bridges completed or in course of erection were the following: (a) Ja-ela bridge, Colombo-Negombo road, 2 spans of 55½ feet on concrete cylinder foundations; (b) bridge, 14th mile, Madawala-Teldeniya-Nugatenna Gap road; (c) Kuru-oya bridge, Matale District, consisting of 2 spans of 20 feet and 1 of 25 feet; (d) Sudu-ganga bridge, Matale District, consisting of the removal of the ironwork of the old bridge, span 80 feet; (e) conversion of the timber bridge on the 62nd mile, Ginigathena road, into an iron one; (f) Elephant Pass bridge, Northern Province, 4 spans of 22½ feet on concrete cylinder foundations and reinforced concrete deck; (g) reconstruction of Kallar bridge, Madawachchi-Mannar road, 3 spans of 30 feet; (h) Tuntota bridge, Marawila-Dummalasuriya road, 4 spans of 25 feet and 1 of 80 feet span, including half a mile of embanked approaches; (i) bridges, Toppu-Battuluoya road—one bridge of 2 spans of 25 feet and 1 of 4 arched spans of 6 feet each; (j) Hed-oya bridge, Muppene-Pottuvil road, 7 spans of 30 feet; (k) bridges, 24th and 44th miles, Batticaloa-Trincomalee road, one bridge of 5 spans of 30 feet and another of 4 spans of 30 feet; (l) Kananke bridge, Galle-Akuressa road, 1 span of 150 feet; (m) Kitulgala bridge, Avissawella-Ginigathena road, 2 spans of 60 feet; (n) Maha-oya bridge, Kegalla-Polgahawela road, 2 spans of 60 feet and 6 of 30 feet; (o) We-ganga bridge, 1 span of 80 feet and 1 of 30 feet.

#### FLOODS.

70. The year 1913 will be remembered as one of flood. Three abnormal and, as far as can be ascertained, unprecedented floods occurred during the year, in January, October, and December, doing an immense amount of damage.

71. The extent of the additional work thrown on to the Department may in a measure be gauged by the estimated cost of the repairs necessary in the several Provinces, which was as follows: Western, Rs. 88,620; Central, Rs. 383,540; Southern, Rs. 17,987; Northern, Rs. 43,815; Eastern, Rs. 110,096; North-Western, Rs. 78,421; North-Central, Rs. 18,701; Uva, Rs. 386,011; Sabaragamuwa, Rs. 183,770.

72. The most serious damage occurred in the Western, Central, Eastern, North-Western, Uva, and Sabaragamuwa Provinces. Many important bridges were washed away, and roads were blocked by landslips and washaways of magnitude, while the surface metal was in many instances torn off for long distances by the rush of water.

73. In most instances the roads were quickly made passable for traffic by the prompt action of the officers in charge of them, and by the ready assistance of planters, who willingly lent the labour necessary. On some roads, owing to their difficult and extensive nature, the repairs required have taken and will take considerable time to execute. Every effort is being made to complete these repairs as soon as practicable, and it is hoped to have most of them done before the setting in of the south-west monsoon.

74. The period has been a trying one for the roads and for the officers in charge of them.

#### COLOMBO LAKE SCHEME.

75. Owing to delay in the arrival of plant from England work on this scheme did not make the progress hoped for, the expenditure for the twelve months July 1, 1912, to June 30, 1913, being Rs. 277,000. During the latter half of 1913 excellent progress has however been made, the total expenditure for the eighteen months being Rs. 796,276.

76. A considerable amount of land has been reclaimed. The spill at Galle Face with emergency sluices has been practically completed, the bridge over the overflow channels is well advanced, and the outlet to the sea completed.

The lakeside walling in the Galle Face lake is well in hand, and the Parsons road bridge has been started. Work has also been begun on the canal from the lake to the harbour.

78. The walls of the San Sebastian canal are practically complete from Norris road to the new locks; the locks are in hand, the lock sluices are being made, and the new bridge at San Sebastian has been started. The canal north of the bridge is also in hand, the eastern wall showing good progress, while coffer dams are being constructed to enable the western wall to be carried out.

79. During the year three dredgers have been constantly at work on the lake, and a fourth, hired from the Colombo Municipal Council, was employed for a time.

80. Connected with the Lake Scheme, but distinct from the general scheme, the following works have been in progress:—

- (a) Surveys of the canal from San Sebastian to Grandpass in connection with proposed improvements.
- (b) Filling in that portion of the old Polwatta ditch at the back of Temple Trees and the construction of surface water drains.
- (c) Erection of caretaker's quarters, Technical Schools.
- (d) Cathedral road deviation, Galle Face.

81. The Lake Scheme project is under the immediate charge of Mr. J. Strachan, Chief Assistant Engineer, assisted by Messrs. E. Human, H. P. G. Young, and B. A. R. Hughes.

#### THE GOVERNMENT FACTORY.

82. The works carried out at the Factory and by the Factory staff have been of the usual varied character, as will be seen from the Factory and Electrical Engineers' reports, which are annexed.

83. The electrical work continues to increase both in importance and quantity, and provision for the enlargement of the staff working under Mr. Rylands, and for a workshop, store, and office outside the Factory premises may have to be made at no distant date.

## GENERAL.

84. Among the more important work carried out in the Head Office, in addition to the checking and revision of plans and estimates received from the Provinces, the following may be mentioned :—

## (a) Preparation of preliminary plans and estimates for—

Additions, Karawanella hospital.	Hospital, Kitulgala.
Medical Research Institute, Colombo.	Extension, Survey Office.
Police Magistrate's quarters, Chilaw.	Leper Asylum, Batticaloa.
Hospital, Chilaw.	Water supply, Negombo.
Kachcheri, Kegalla.	

## (b) The preparation of working drawings and estimates for—

Rebuilding General Hospital, Colombo.	Uma-oya bridge.
Temporary wards, General Hospital, Colombo.	Goiyapana and Pol-oya bridges.
Quarters for Government servants, Colombo.	Kuruwita bridge.
Residence for Colonial Secretary, Nuwara Eliya.	Hangamuwa bridge.
Police buildings, Kurunegala.	Colombo Customs extension.
Hospital, Kegalla.	Kovilam lighthouse.
Police Headquarters, Colombo.	Warehouse, Galle Customs.
Police Training School, Mount Lavinia.	Water supply, Ragama.
Engineer Volunteer Headquarters.	Water supply, Kurunegala.
Office for Director of Education.	Water supply, Batticaloa.
Laboratory for Government Analyst.	Water supply, Nuwara Eliya.
Lunatic Asylum, Angoda.	Water supply, Uda Pussellawa hospital.
Hed-oya bridge.	Cooly camp, Mandapam.

## (c) The preparation of detail drawings for works in progress—

Master Attendant's Office, Colombo.	Medical College, Colombo.
Customs extension, Colombo.	Colonial Secretary's residence, Nuwara Eliya.
Treasury extension, Colombo.	

## (d) The preparation of working drawings for—

Post and telegraph offices at Kahawatta, Ratnapura, Nanu-oya, Jaffna Kachcheri, and Dandagama.	Infectious Diseases Hospital, Moratuwa.
Leper Asylum, Batticaloa.	Revision—type hospital plans.
Leper Asylum, Hendala.	Alterations, Assize Courts, Colombo.
Police Station, Panadure.	Staff quarters, Talaimannar.
Hospital, Buttala.	Drainage of public buildings, Colombo.
Survey Department Office and quarters, Galle.	Hospital, Ratnapura.
	Improvements, Distillery, Kalutara.

## STAFF.

85. The following officers were appointed during the period under review and assumed duties on the dates mentioned :—

Name.	Designation.	Date assumed Duty.
S. T. Carthigasen ..	Assistant Engineer ..	December 13, 1912
P. M. Norris ..	do. ..	January 10, 1913
B. A. R. Hughes ..	do. ..	October 2, 1913
G. Gilchrist ..	do. ..	October 8, 1913
J. D. Hawkes ..	do. ..	October 17, 1913
J. T. Morrison ..	do. ..	October 25, 1913
J. L. Longbottom ..	do. ..	October 30, 1913

86. During the period under review the following senior officers were on leave : Mr. F. A. Cooper, C.M.G., Director of Public Works ; Mr. C. A. Lovegrove, Deputy Director of Public Works ; Mr. H. F. Tomalin, Provincial Engineer ; Mr. Walter C. Price, Provincial Engineer ; Mr. P. M. Bingham, Provincial Engineer ; Mr. C. F. Emerson, Provincial Engineer ; Mr. A. E. Caldicott, Provincial Engineer ; Mr. G. H. M. Hyde, Factory Engineer ; Mr. A. Woodeson, Architectural Assistant ; Messrs. W. R. W. Morgan, E. W. Cade, H. E. de Kretser, H. K. de Kretser, and C. C. Fielder, District Engineers.

87. The office of Provincial Engineer in the several Provinces has been held by—

Mr. A. E. Caldicott	..	} Western Province
Mr. E. H. Vanderstraaten	..	
Mr. W. C. Price ..	..	} Central Province
Mr. H. F. Tomalin	..	
Mr. P. M. Bingham	..	} Eastern Province
Mr. R. G. Carte ..	..	
Mr. A. de C. Carson	..	Northern Province
Mr. A. E. Mayes ..	..	North-Central Province
Mr. A. Rothwell ..	..	North-Western Province
Mr. E. H. Vanderstraaten	..	} Southern Province
Mr. A. H. F. Clarke	..	
Mr. C. F. Emerson	..	} Province of Uva
Mr. H. F. Tomalin	..	
Mr. R. A. Powell	..	} Province of Sabaragamuwa
Mr. R. G. Carte ..	..	
Mr. G. Waddell ..	..	

88. The following retirements took place during the period under review :—

April 22, 1913 ..	Mr. C. A. Lovegrove ..	Deputy Director of Public Works
August 10, 1913 ..	Mr. F. A. Cooper, C.M.G.	Director of Public Works
December 31, 1912 ..	Mr. W. B. Gregson ..	District Engineer
December 27, 1913 ..	Mr. C. C. Fielder ..	District Engineer
November 13, 1913 ..	Mr. D. N. Keith ..	Assistant Electrical Engineer
September 2, 1913 ..	Mr. D. S. Muttiah ..	Assistant Engineer

89. The approaching retirement of Mr. C. A. Lovegrove was recorded and noticed in the Administration Report for 1911-12.

90. Mr. Cooper assumed duties as Director of Public Works, Ceylon, in 1897, having previously held a similar position for some years in Hong Kong. Mr. Cooper's ability as an engineer, capacity for work, and devotion to duty were conspicuous. During his tenure of office the expenditure on public works rose from Rs. 3,565,000 in 1897 to Rs. 8,216,000 in 1913, and many works of magnitude were carried out under his direction. Mr. Cooper was a Member of the Legislative Council, and sat on many of the Commissions appointed from time to time to inquire into and report on important matters. While being a strict disciplinarian, Mr. Cooper had the best interests of his men at heart. By his retirement, on account of ill-health, after a long period of exceptional stress, the Colony has lost the services of a zealous officer, and the Public Works Department a disinterested chief and friend.

91. A loss to the Department took place in the death of Mr. S. T. Carthigasen, Assistant Engineer, who was drowned while doing his duty during the floods at Ratnapura in October, 1913. Mr. Carthigasen was a very promising young officer, and was respected by all who knew him.

92. Mr. T. H. Chapman, Assistant Director of Public Works, was appointed Deputy Director of Public Works on the retirement of Mr. C. A. Lovegrove in April, 1913, and Director of Public Works on the retirement of Mr. F. A. Cooper in August, 1913.

93. Mr. H. T. Creasy, Provincial Engineer, was appointed Assistant Director of Public Works in April, 1913, *vice* Mr. T. H. Chapman, promoted.

94. Mr. A. E. Mayes was promoted Provincial Engineer in April, 1913, *vice* Mr. H. T. Creasy, promoted.

95. Mr. H. T. Creasy acted as Deputy Director of Public Works, Mr. H. B. Lees as Assistant Director of Public Works, and Mr. G. N. Loggin as Second Assistant Director of Public Works from May to December, 1913.

T. H. CHAPMAN,  
Director of Public Works.

April 3, 1914.

#### REPORT OF THE FACTORY ENGINEER FOR 1912-13.

FROM July, 1912, to December, 1913, 824 Factory orders were received for execution, which, together with a balance of 103 orders carried forward from 1911-12, make a total value of Rs. 3,162,275·87.

2. The expenditure during the eighteen months under review has been Rs. 2,136,932, divided as follows on the different votes :—

<i>Recurrent.</i>		Rs.	c.			Rs.	c.
Maintenance of roads ..	..	14,856	1	Additions and improvements to roads ..	..	74,990	43
Maintenance of inland navigation ..	..	248	47	New bridges ..	..	27,240	30
Maintenance of buildings ..	..	74,429	3	Repair of bridges ..	..	82,874	92
Additions to buildings ..	..	21,175	23	Miscellaneous ..	..	198,578	76
Maintenance of bridges ..	..	2,829	70				
Miscellaneous ..	..	351,968	39			1,430,800	33
		465,506	83	Works chargeable to surplus balances ..	..	49,530	30
				Other funds ..	..	123,021	31
				Works chargeable to loans ..	..	63,092	16
				Branch road funds ..	..	4,961	7
						191,074	54
						2,136,932	0

#### *Recurrent.*

3. The expenditure of Rs. 465,506·83 is for the general maintenance of buildings, bridges, and roads, as well as small additions thereto throughout the eighteen months.

#### *Extraordinary.*

4. *New Works and Buildings.*—Expenditure, Rs. 552,253·22. This expenditure includes the completion of the new Royal College and Principal's bungalow. The College was opened in August last.

5. *Quay Wall and Extension to Jetties and Warehouses, Colombo Customs.*—The quay wall has been completed and carried through the root of the Prince of Wales's jetty. The Titan crane has been dismantled and removed, and the work of paving the quays, fixing the fenders, &c., is practically completed. 14,400 square feet of land has been reclaimed and paved, and is being made full use of for working cargo. Owing to the congestion at the Wharf the extension to the warehouses was not commenced until August, 1913; since then two sheds at a time have been extended, and now five have been finished and handed over. Good progress is being made with the remainder.

It was decided by the Port Commission to provide a covered cartway through the warehouses, and this is now well in hand. Good progress is being made with the remainder of the warehouse extensions and paving.

6. *New Office for the Master Attendant.*—This building was practically completed in October, 1913, but owing to the outlook from the Military directing station being obstructed to the southward, it was decided to make provision for a new Military station on the top of the already finished tower. Instructions were received to put the work in hand on September 8, 1913, and it is now nearing completion. In connection with this building a new time ball has been constructed to designs prepared at the Government Factory. The ball is made of aluminium, is 6 feet diameter, and slides on an iron shaft, at the bottom of which is an apparatus for absorbing the shock of the falling ball. The complete apparatus will be erected at an early date on the top of the new addition to the tower.

7. *Extension of Customs Premises East of Passenger Jetty.*—Instructions were received to put this work in hand on December 18, 1912, and during the period under review 520 lineal feet of 8-ft. cylinders have been sunk to a depth of 20 feet below mean sea level; on the top of these cylinders 372 feet of quay walling have been completed and fitted with fenders, bollards, &c.

63,400 square feet of stone paving have been completed on the yard west of the new canal. The boundary walls, searchers' offices, gates, and drains have also been completed.

A large amount of old plant was taken over from the Harbour Works Department, which had to undergo very extensive repairs before use could be made of it.

Rapid progress has been made in the Government Factory with the ironwork of the warehouses, and the greater part has now been erected on the site; the work of fixing the corrugated sheeting is well in hand.

One of the two jetties has been completed, with the exception of the wooden decking, which is now well advanced.

Two rows of cylinders for the second jetty have been laid, and good progress is being made with the remainder. Cylinder sinking at the seaward end of the canal wall has been greatly delayed by the enormous amount of rubble that had to be cut through; in many instances boulders weighing nearly a ton had to be removed before the foundation cylinders could be properly placed.

8. *East of the Canal.*—The boundary walls, searchers' offices, and exits have been practically completed. 19,300 square feet paving have been finished and 108,000 square feet of concrete on 6-in. patching have been laid ready to be paved.

The 6-ton Titan crane removed from the Customs west of the passenger jetty has been re-erected, and rails have been laid to permit it to travel the whole length of the front quay wall. Rails have also been laid for five 5-ton cranes which were ordered from England in November, 1912. Preparations have been made to start on the construction of the jetties and quay wall immediately the new cranes arrive from England.

Part of the crane track on the east side of the canal has been laid down, and a start has been made with the construction of the quay wall.

9. *Extension to Baggage Room, Passenger Jetty.*—The construction of this extension has been postponed, as Government is now considering an alternative scheme.

10. *Ragama Camp Water Supply.*—A commencement was made in sinking the 50-foot deep well in February, 1913, and the work was completed in November last. Great difficulty was experienced in sinking the brick lining after the depth of 18 feet had been reached. The ground was extremely hard, and had to be quarried out with cutting tools. The reservoir, pipe line, and engine room have all been completed, and now work has been suspended until the arrival of pumps, engines, and filtering machinery.

11. *Additions and Improvements to Buildings.*—Expenditure, Rs. 470,451.75. Under this head is included the cost of widening the shore end of the Prince of Wales's jetty. This work is now completed. The alteration is a great improvement, as traffic to and from the jetty is much less hampered than before the addition was made.

12. *Extension to General Treasury.*—This building is now finished, and forms a handsome addition to Government buildings. A great deal of delay was caused by the very late arrival from England of the vault fittings and doors for strong rooms. The building was occupied by the Treasury staff on September 15, 1913.

13. *Passenger Jetty.*—The extension was completed and opened to the general public in December, 1912. Additional area has been added to the lower platform by filling in the open spaces that occurred in every bay of the original jetty. Wherever possible concrete beams have been used in place of wood, as it was found that the best woods have a very short life in Colombo harbour. Turnstiles and collapsible gates have been erected to control the passenger traffic on busy days.

14. *Kochchikade Jetties.*—The southern jetty was completed and opened to traffic in February, 1913, but owing to congestion at the wharf the reconstruction of the northern jetty was not commenced until May, 1913. Since then 12 iron piles have been removed and 20 concrete cylinders sunk in their place. More than half the total length of the jetty is now finished, complete with decking, bollards, and fenders.

15. *Electric Crane, Kochchikade.*—The crane has been erected on the south jetty, and the Electrical Engineer is now erecting the overhead mains to supply the electric current.

16. *Extension of Electrical Workshop, Government Factory.*—Owing to the increase of electrical work it was found necessary to extend the electrical workshop. This was done by carrying out the present floor over another bay of the machine shop and shifting the partition wall forward. The extension gives another 900 square feet of area to the Electrical Department without affecting the machine shop. The drainage of Factory offices, &c., has also been carried out under this head, and a new 18-seated water-flushed latrine has been constructed to accommodate the Factory workmen. From a sanitary point of view this is an enormous improvement.

17. *Crane Track.*—A permanent way for steam cranes has been laid all round the Factory yard. This has been the means of saving much time and labour in the handling of raw and finished materials used in the Factory.

This head of expenditure also includes the following:—Ironwork for additional jetty and warehouse accommodation, Galle Customs, and a new two-storied plant and pattern store 150 feet by 40 feet at the Factory. All of these works are well in hand.

#### *New Roads.*

18. Expenditure, Rs. 24,410.95. The expenditure under this head is for a number of new iron bridges on these roads, including the bridges on the Kukul korale road.

#### *Additions and Improvements to Roads.*

19. Expenditure, Rs. 74,990.43. The stone paving of the roads to grain sheds at Kochchikade was completed in September, 1912. This has been an enormous improvement, saving much time in working cargo. The paving within the Fort Customs premises remains unfinished still, as no decision has been arrived at with regard to the loop line in front of the Customs offices. It also includes the cost of bridges and improvements on the Hatton-Norwood road, Mirisgama-Beligamuwa road, and Narammulla-Dummalasuriya road.

*New Bridges.*

20. Expenditure, Rs. 27,240·30. The expenditure is for completing Ja-ela bridge, which was opened to traffic in July, 1913, and also includes the following :—Bridge on the Puttalam-Kalaoya road ; bridge on Point Pedro-Unmalai road.

*Repair of Bridges.*

21. Expenditure, Rs. 82,874·92. This expenditure includes the repair and reconstruction of a large number of bridges throughout the Island, the largest being the Kananke bridge on the Galle-Akuressa road, on which work a commencement has been made in the Factory.

*Miscellaneous.*

22. Expenditure, Rs. 198,578·76. The expenditure includes the re-decking of the old railway bridge at Kalutara over the Kalu-ganga and paving the entire length with granite setts. This work was greatly accelerated by the equipment of pneumatic tools that were made use of for drilling and rivetting. A portable air compressor was erected, and compressed air was distributed over the bridge through the hand railing to operate the various tools. The bridge was completed and fully opened to traffic at the end of September, 1913.

Under this head is also included a furnace to destroy notes at the General Treasury, which was recently completed, and proves very effective.

Transport has been considerably improved by the acquirement of a 2-ton Lacre motor lorry. This machine is in daily use, and is found to be a great time saver. A 5-ton steam lorry is now being erected in the Factory, and is to be put into commission at an early date. It is proposed to use this heavy machine for handling and transporting heavy building and engineering materials in and about Colombo.

Another batch of twelve steam rollers has been put on the road, along with fuel and water trucks.

Besides the above, a large number of bridges damaged by the floods, including the renewal of Deduru-oya bridge on the Kurunegala-Dambulla road and other important works, were undertaken.

*Other Funds.*

23. Expenditure, Rs. 123,021·31. This is the cost of work executed for practically all the departments of Government, including Telegraph, Telephone, and Postmaster-General's Department.

The output of castings from the foundry has amounted to 9,744 cwt., showing a considerable increase on that of previous years. Out of this, 5,037 cwt. were supplied to the Railway Department.

Under this head is included the construction of a new barge and boiler for the Clayton steamship disinfecter.

*Works chargeable to Surplus Balances.*

24. Expenditure, Rs. 49,530·30. This expenditure includes that of completing the bridges on the Karandupone-Rambukkana road, St. Andrews to Pedro road, Nuwara Eliya, Passara-Nakkala road, Watagoda-Talawakele road, and Kallawellawa-Bellapitiya road ; ironwork and doors and windows for the Motor Mail Service buildings at Bibile ; electric installation at Nuwara Eliya.

*Works chargeable to Loans.*

25. Expenditure, Rs. 63,092·16. The expenditure under this head covers the cost of two iron pontoons for dredgers for the Lake Development Scheme. One of these is finished, and is now being re-erected for launching into the lake. The second pontoon is well in hand. In addition to these are included large sluices for the locks and spill, and the ironwork for reconstructing the bridge. The plant for the Karaiur Reclamation Scheme was completed and handed over at Jaffna on March 31, 1913.

*Branch Road Funds.*

26. Expenditure, Rs. 4,961·07. This includes the cost of completing two bridges of 30 feet and 40 feet span each, besides three smaller bridges on the Mallawapitiya-Rambadagalla road.

*Electrical.*

27. This branch of the Government Factory represents an expenditure of Rs. 230,702·29, which has been included under the afore-mentioned headings, and I attach a separate report from the Electrical Engineer.

*Machinery.*

28. A long-felt want has been met by the replacing of most of the old-fashioned, inefficient machine tools by modern high speed machinery. Several of these tools have already been installed and are being made full use of.

As the engine for driving the machine shop was too small to cope with the increased load, a new 44-H.P. suction gas engine was installed in August. This engine has proved very successful. It is very compact and takes up but little space, besides which it provides power for driving the machine shop at half the cost of the steam engine. I consider it advisable to replace all the steam engines in the Factory with gas engines, considering the great saving in fuel and space that can be effected.

*General.*

29. The amount of work executed and the expenditure incurred during the eighteen months under review have been the largest on record, being much in excess over those of former years.

Mr. W. T. Cox arrived and took up duties as Factory District Engineer on November 1, 1912.

Mr. D. N. Keith resigned his post and left the Island on November 1, 1913.

Mr. G. H. M. Hyde, Factory Engineer, went home on ten months' leave on September 23, 1913, and Mr. Gray took up duties as Acting Factory Engineer on the same date.

Mr. J. C. Cooper is still attached to the Government Factory, in charge of the supervision of outworks and buildings.

30. I attach return showing that 23 bridges over 30 feet span and 88 bridges 30 feet and under have been constructed during the eighteen months. (See Table No. 5 in Appendix.)

Colombo, February, 1914.

J. GRAY,  
Acting Factory Engineer.

## REPORT OF THE ELECTRICAL ENGINEER FOR 1912-13.

FROM July, 1912, to December, 1913, the total expenditure on new works and extensions to electrical installations has been Rs. 130,316·49, and for electricity Rs. 100,385·80, making a total of Rs. 230,702·29.

	Rs.	c.
<i>Maintenance.</i>		
Electric lights, fans, motors, electric cranes, and other apparatus ..	47,687	14

<i>New Works and Additions.</i>		
Electric lighting and apparatus, Railway Department ..	14,567	46
Do. Nuwara Eliya ..	16,399	22
Do. Medical Department ..	11,829	87
Do. Education Department ..	8,549	21
Do. Customs Department ..	6,695	47
Do. Prisons Department ..	3,056	70
Do. Post and Telegraph ..	2,368	63
Do. Police Department ..	1,414	48
Do. Judicial Department ..	1,386	69
Do. Survey Department ..	1,353	49
Do. General Treasury ..	942	66
Do. Public Works Department ..	1,009	24
Do. Forest Department ..	706	7
Do. Colombo Kachcheri ..	658	10
Do. Audit Office ..	519	19
Do. Volunteer Department ..	468	48
Do. Registrar-General ..	395	39
Do. Miscellaneous ..	455	83

<i>Telegraph Instruments.</i>	
Repairs, alterations, &c., have been executed to 818 instruments, relays (P. O. standard and Siemen's), sounders (P. O. local and direct working, portable Indian pattern, and Vyle's polarized) rheostats, galvanometers (differential and single current), Key's double current and S. C. translators, commutators, lightning discharges (plate pattern), switchboards, test boards, induction coils, testing sets, alarm bells, &c. ..	5,018 98

<i>Telephone and Railway Tablet Instruments, &amp;c.</i>	
Repairs and alterations have been executed to 2,659 wall and desk telephone sets, hand combinations, ring-off indicators, indicators with jacks combined, extension bells, operator sets, receivers (D. P. and watch pattern), generators, tablet galvanometers, tablet relays, single repeaters, bell and switch barrels, fuses, switchboards, cords and plugs, carbon dischargers, resistance coils, detectors, block switches, &c. ..	4,834 19

Total .. 130,316 49

*Electrical Installations.*—From July, 1912, to December, 1913, 266 ceiling and desk fans, 564 lamps, 7 arc lamps, 2 motor generators, 1 vacuum cleaner, 1 5-H.P. A.C. motor, 1 stamping machine, and 4 heating apparatus have been installed, making an approximate total for annual maintenance of Government electrical installations in Colombo, Kandy, and Nuwara Eliya of—

1,032 fans	1 C.C. 5 B.H.P. 110 volt motor
5,242 incandescent lamps	1 A.C. 5 " 110 volt motor
57 heating apparatus	3 small 100 volt A.C. motors
1 20-ampère valve rectifier	5 small 100 volt motor generators
4 10-ampère do.	1 C.C. 4 K.W. 220 volt generator
2 5-ampère do.	1 C.C. 6·6 K.W. 100 volt generator
8 electric cranes	1 motor generator 1·1 B.H.P., A.C. direct coupled to ·6 K.W. C.C. generator
3 electric lifts	2 motor generators 1·75 B.H.P., A.C. direct coupled to ·9 K.W. C.C. generators.
5 transformers	1 motor generator 4·8 B.H.P. direct coupled to 3·6 K.W. C.C. generator.
1 C.C. 20 B.H.P. 550 volt motor	1 motor generator 5 B.H.P., A.C. direct coupled to 1-1·2 K.W. and 1-1·1 K.W. C.C. generators
9 " 10·5 " 550 volt motors	1 motor generator 8·5 B.H.P., A.C. direct coupled to 5 K.W. C.C. generator.
2 " 8 " 550 volt motors	1 motor generator 10·5 B.H.P., A.C. direct coupled to 12·6 K.W. C.C. generator.
8 " 3·5 " 550 volt motors	
1 " 3 " 550 volt motor	
2 " 7·5 " 440 volt motors	
1 " 5 " 440 volt motor	
1 " 1 " 440 volt motor	
1 " 3 " 220 volt motor	
1 " 2 " 220 volt motor	
2 " 1 " 220 volt motors	

## Statement of Electricity, Transformer, and Meter Charges of Government Premises in Colombo and Kandy from July, 1912, to December, 1913.

<i>Paid by Public Works Department.</i>				Rs. c.
4 installations	..	..	B. T. U. 14,335·4 at 45c. =	6,450 93
47 do.	..	..	„ 184,476 at 40c. =	73,790 40
1 do.	..	..	„ 32,190 at 35c. =	11,266 50
5 do.	..	..	„ 21,935 at 21c. =	4,606 35
Meter and transformer charges	..	..	—	3,191 62
Cost of electricity for four Government fans at Wharfage Company's premises	..	..	—	1,080 0
Total .. B. T. U. 252,936·4				Total .. 100,385 80

<i>Paid by other Departments.</i>				Rs. c.
8 installations	..	..	B. T. U. 27,149 at 45c. =	12,217 5
15 do.	..	..	„ 130,009 at 40c. =	52,003 60
3 do.	..	..	„ 88,063 at 35c. =	30,822 5
5 do.	..	..	„ 20,095 at 21c. =	4,219 95
Meter and transformer charges, &c.	..	..	—	1,540 7
Total .. B. T. U. 265,316				Total .. 100,802 72

*Supply of Electricity to Government Installations, Colombo.*—The supply for these electrical installations has been under consideration by Government during the past year, and the modified terms offered by the Colombo Electric Lighting and Tramway Company, Limited, have been accepted for a further period of years.

*Talaimannar Electric Lighting.*—The proposal for this installation has been sanctioned and the plant ordered, which consists of 2·50 B.H.P. Semi-Diesel oil engines belted to 2·30 K.W. single phase alternators, 50 periods at 2,200 volts; high tension transmission lines will be carried from the station switchboard on steel poles to transformers at the piers and various points, from which a low tension supply will be delivered to a 3-wire system at 220 volts on the outers for lighting and fans, &c.

*Hydro-Electric Installation, Nuwara Eliya.*—During 1913 the demand for lighting, &c., has considerably increased. The existing plant being now fully loaded, and with an increasing demand, additional plant has been decided on, and a 100 K.V.A. single phase alternator direct coupled to an 120 B.H.P. turbine has been ordered.

*Nanu-oya Lighting.*—The transmission line has been completed and the railway station lighted.

*Badulla Hydro-Electric Scheme.*—This scheme is being investigated; ample water is available on a suitable fall, and it appears likely to prove commercially sound, and would be of great advantage to Badulla.

*Galle Electric Lighting Scheme.*—The details have now been decided on, and the scheme is being drawn up for sanction.

*Assistant Electrical Engineer.*—Mr. D. N. Keith resigned in November, 1913, and another Assistant Engineer is being selected in Europe.

Colombo, February 1, 1914.

F. B. RYLANDS,  
Electrical Engineer.

APPENDIX.

No. 1.—Statement of Expenditure (Public Works Annually Recurrent), 1912-13.

Classification.	Province.												Total.									
	Western.		Central.		Southern.		Northern.		Eastern.		North-Western.			North-Central.		Uva.		Sabaragamuwa.		Miscellaneous.		
	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.		Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	
Maintenance of roads	403,343	26	404,633	48	226,375	30	160,899	3	184,067	78	270,959	55	163,699	75	273,675	29	246,446	19	—	—	2,334,099	63
Maintenance of inland navigation	30,382	18	—	—	—	—	4,448	87	7,073	39	18,123	94	—	—	—	—	—	—	—	—	60,028	38
Maintenance of Government buildings and works, exclusive of police and hospital buildings	35,611	12	15,747	10	12,745	19	10,202	50	9,829	81	12,619	79	7,713	47	6,276	38	4,620	74	—	—	115,366	10
Maintenance of police stations	6,025	69	2,889	65	2,772	50	974	12	531	97	996	99	99	63	499	84	670	73	—	—	15,461	12
Maintenance of hospitals and dispensaries	20,724	6	12,258	32	4,613	39	3,951	99	2,814	55	3,714	79	2,288	65	5,308	25	4,584	64	—	—	60,258	64
Maintenance of, and additions and improvements to, King's houses, Colombo, Kandy, Nuwara Eliya, and Jaffna	6,369	90	4,626	61	—	—	603	73	—	—	—	—	—	—	—	—	—	—	—	—	11,600	24
Maintenance of camp buildings at Diyatalawa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,780	94
Repairs and improvements to Government buildings at Diyatalawa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2,295	16
Maintenance of electric light and fan installations, Colombo, Kandy, and Nuwara Eliya	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25,804	29
Maintenance of Mahara jail	4,828	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,828	50
Maintenance of Customs wharf, jetties, and cranes	19,498	52	—	—	3,885	41	1,903	2	1,351	8	—	—	—	—	—	—	—	—	—	—	26,638	3
Maintenance of plague sheds	150	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	150	0
Maintenance of disinfecting station, Breakwater	499	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	499	15
Maintenance of Trinity House	—	—	—	—	117	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	117	45
Maintenance of southern plague hospital, Galle	—	—	—	—	595	31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	595	31
Maintenance of Bathfield House, Galle	—	—	—	—	189	92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	189	92
Maintenance of disinfecting station and segregation camp, Kayts	—	—	—	—	—	—	75	40	—	—	—	—	—	—	—	—	—	—	—	—	75	40
Special repairs to buildings	—	—	994	76	4,621	42	8,028	90	—	—	—	—	—	—	—	—	—	—	—	—	21,424	15
Additions and improvements to Government buildings and works	20,136	28	4,824	11	2,153	47	1,393	54	1,833	70	1,245	90	600	39	1,437	23	1,763	8	—	—	35,387	70
Additions and improvements to police buildings	2,275	20	1,850	23	621	73	670	86	—	—	543	91	—	—	108	40	790	59	—	—	6,860	92
Additions and improvements to prison buildings	1,445	41	—	—	1,077	36	725	91	760	3	—	—	84	85	687	49	—	—	—	—	4,781	5
Additions and improvements to hospitals and dispensaries	5,815	42	2,347	86	427	47	2,221	40	475	27	1,107	50	2,546	35	1,875	36	378	61	—	—	17,195	24
Additions and improvements to postal buildings	621	55	1,026	67	1,500	0	884	6	—	—	346	11	6	0	—	—	464	61	—	—	4,849	0
Maintenance of iron and timber bridges throughout the Island exceeding 50 feet in length	13,719	75	9,372	74	11,539	36	3,321	83	9,397	40	16,201	5	3,394	53	2,312	4	11,759	68	—	—	81,018	38
Annual painting the Kelani bridge	1,994	74	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,994	74
Urgent repairs to bridges	2,690	50	1,031	42	—	—	722	26	—	—	—	—	—	—	—	—	—	—	—	—	4,444	18
Miscellaneous	118,280	87	27,897	43	12,389	37	4,393	11	6,266	16	4,236	49	1,022	86	10,803	73	4,915	36	318,327	70	508,533	8
Total	694,412	10	489,500	38	285,624	65	205,420	53	224,401	14	330,096	2	181,456	48	313,059	74	281,173	67	344,131	99	3,349,276	70

No. 1 A.—Statement of Expenditure (Public Works Annually Recurrent), 1912-13.

Classification.	Province.										Total.									
	Western.		Central.		Southern.		Northern.		Eastern.			North-Western.		North-Central.		Uva.		Sabara-gamuwa.		
	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.		Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	
<i>Private Contribution spent on Branch Roads.</i>																				
Maintenance of roads ...	—	—	43,511	21	3,475	7	—	—	—	—	364	34	—	—	2,742	26	5,872	10	55,964	98
Miscellaneous ...	—	—	1,344	90	90	48	—	—	—	—	—	—	—	—	—	—	—	—	1,435	38
<b>Total ...</b>	—	—	44,856	11	3,565	55	—	—	—	—	364	34	—	—	2,742	26	5,872	10	57,400	36

No. 2.—Statement of Expenditure (Public Works Extraordinary), 1912-13.

Classification.	Province.										Total.										
	Western.		Central.		Southern.		Northern.		Eastern.			North-Western.		North-Central.		Uva.		Sabara-gamuwa.		Miscellaneous.	
	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.		Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.
New works and buildings ...	137,920	65	46,809	63	27,285	54	9,522	75	12,393	69	32,673	8	17,137	62	27,526	62	—	—	335,267	36	
Additions and improvements to buildings ...	587,787	12	42,316	1	17,030	4	6,893	38	18,907	31	1,149	65	17,816	12	12,710	11	—	—	728,077	16	
New roads ...	—	—	1,418	22	21,641	92	—	—	16,180	6	—	—	109,083	1	65,312	20	—	—	213,635	41	
Additions and improvements to roads ...	71,114	49	40,913	61	5,755	42	9,318	17	50,568	5	4,656	9	22,497	72	13,295	88	—	—	242,456	27	
New bridges ...	24,749	13	—	—	3,570	49	—	—	53,514	88	—	—	—	—	113,397	9	—	—	81,834	50	
Repair of bridges ...	6,287	8	15,701	62	2,197	28	1,153	26	21,963	66	—	—	1,266	31	—	—	—	—	162,120	42	
Lands and buildings to be acquired ...	49,285	95	1,409	90	1,420	43	—	—	913	75	—	—	77,307	15	4,359	60	—	—	52,875	91	
Miscellaneous ...	165,446	75	82,628	31	38,597	28	70,655	60	28,274	21	12,869	61	—	—	—	—	—	—	501,269	65	
<b>Total ...</b>	1,042,591	17	229,779	8	115,301	12	97,543	16	202,715	61	51,348	43	245,107	93	236,601	50	—	—	2,317,536	68	

No. 2 A.—Statement of Expenditure (Public Works Extraordinary), 1912-13.

Classification.	Province.										Total.									
	Western.		Central.		Southern.		Northern.		Eastern.			North-Western.		North-Central.		Uva.		Sabara-gamuwa.		
	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.		Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	
<i>Private Contribution spent on Branch Roads.</i>																				
New works and buildings ...	—	—	1,654	19	—	—	—	—	—	—	7,968	64	—	—	483	23	—	—	483	23
Roads and bridges ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35,370	73	—	—	44,993	56
Additions and improvements to roads ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Repair of bridges ...	—	—	4,938	50	—	—	—	—	—	—	—	—	—	—	232	37	—	—	5,170	87
Miscellaneous ...	—	—	6,592	69	—	—	—	—	—	—	7,968	64	—	—	36,086	33	—	—	50,647	66
<b>Total ...</b>	—	—	6,592	69	—	—	—	—	—	—	7,968	64	—	—	36,086	33	—	—	50,647	66

No. 3.—Statement of Expenditure, 1912-13.

Classification.	Province.												Total.									
	Western.		Central.		Southern.		Northern.		Eastern.		North-Western.			North-Central.		Uva.		Sabaragamuwa.		Miscellaneous.		
	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.		Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	
<i>Public Works Annually Recurrent.</i>																						
Maintenance of roads	403,343	26	448,144	69	229,850	37	160,899	3	184,067	78	271,323	89	163,699	75	276,417	55	252,318	29	—	—	2,390,064	61
Maintenance of inland navigation	30,382	18	—	—	—	4,448	87	7,073	39	18,123	94	—	—	—	—	—	9,876	11	—	—	60,028	38
Maintenance of buildings	93,706	94	35,521	68	24,919	17	17,710	76	14,527	41	17,331	57	10,101	75	19,160	57	4,779	44	25,804	29	268,660	25
Special repairs to buildings	—	—	994	76	4,621	42	8,028	90	—	—	—	—	—	—	2,999	63	3,237	59	—	—	21,424	15
Additions to buildings	30,293	86	10,048	87	5,780	3	5,895	77	3,069	0	3,243	42	3,237	59	4,108	48	3,396	68	—	—	69,073	91
Maintenance of bridges	18,404	99	10,404	16	11,539	36	4,044	9	9,397	40	16,201	5	3,394	53	2,312	4	11,759	68	—	—	87,457	30
Miscellaneous	118,280	87	29,242	33	12,479	85	4,393	11	6,266	16	4,236	49	1,022	86	10,803	73	4,915	36	318,327	70	509,968	46
<b>Total Recurrent</b>	<b>694,412</b>	<b>10</b>	<b>534,356</b>	<b>49</b>	<b>289,190</b>	<b>20</b>	<b>205,420</b>	<b>53</b>	<b>224,401</b>	<b>14</b>	<b>330,450</b>	<b>86</b>	<b>181,456</b>	<b>48</b>	<b>315,802</b>	<b>0</b>	<b>287,045</b>	<b>77</b>	<b>344,131</b>	<b>99</b>	<b>3,406,677</b>	<b>6</b>
<i>Public Works Extraordinary.</i>																						
New works and buildings	137,920	65	46,809	63	23,997	78	27,285	54	9,522	75	12,393	69	32,673	8	17,620	85	27,526	62	—	—	335,750	59
Additions and improvements to buildings	587,787	12	42,316	1	23,467	42	17,030	4	6,893	38	18,907	31	1,149	65	17,816	12	12,710	11	—	—	728,077	16
New roads	—	—	1,654	19	1,418	22	21,641	92	—	—	24,148	70	—	—	144,453	74	65,312	20	—	—	258,628	97
Additions and improvements to roads	71,114	49	40,913	61	24,336	84	5,755	42	9,318	17	50,568	5	4,656	9	22,497	72	13,295	88	—	—	242,456	27
New bridges	24,749	13	—	—	—	—	3,570	49	—	—	53,514	88	—	—	—	—	—	—	—	—	81,834	50
Repair of bridges	6,287	8	15,701	62	2,197	28	1,420	43	1,153	26	21,963	66	—	—	1,266	31	—	—	—	—	162,120	42
Lands and buildings to be acquired	49,285	95	1,409	90	—	—	—	—	—	—	913	75	—	—	77,539	52	4,359	60	—	—	52,875	91
Miscellaneous	165,446	75	87,566	81	21,131	14	38,597	28	70,655	60	28,274	21	12,869	61	—	—	—	—	—	—	506,440	52
<b>Total Extraordinary</b>	<b>1,042,591</b>	<b>17</b>	<b>236,371</b>	<b>77</b>	<b>96,548</b>	<b>68</b>	<b>115,301</b>	<b>12</b>	<b>97,543</b>	<b>16</b>	<b>210,684</b>	<b>25</b>	<b>51,348</b>	<b>43</b>	<b>281,194</b>	<b>26</b>	<b>256,601</b>	<b>50</b>	<b>—</b>	<b>—</b>	<b>2,368,184</b>	<b>34</b>
<b>Total Recurrent and Extraordinary</b>	<b>1,737,003</b>	<b>27</b>	<b>770,728</b>	<b>26</b>	<b>385,738</b>	<b>88</b>	<b>320,721</b>	<b>65</b>	<b>321,944</b>	<b>30</b>	<b>541,144</b>	<b>61</b>	<b>232,804</b>	<b>91</b>	<b>596,996</b>	<b>26</b>	<b>523,647</b>	<b>27</b>	<b>344,131</b>	<b>99</b>	<b>5,774,861</b>	<b>40</b>
<i>Works chargeable to Surplus Balances, Loans, &amp;c.</i>																						
Works chargeable to surplus balances	594,203	33	100,888	25	3,067	57	16,568	94	7,389	15	15,941	99	943	32	95,037	81	181,692	96	—	—	1,015,733	32
Works chargeable to loans	276,925	93	—	—	—	—	15,903	35	—	—	—	—	—	—	—	—	640	11	—	—	293,469	39
Drains, Padiyapellella bazaar	—	—	112	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	112	15
Side drains to Kandapola bazaar	—	—	257	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	257	50
Panadure drainage	1,168	85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,168	85
Drainage of mosquito breeding grounds, Diyatalawa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rain sewer in Duke street, Fort, Colombo	2,773	31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5,378	80
Compensation for Public Works Department contractor, Matara District, on account of breakdown in Ceylon Government Railway	—	—	—	—	250	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	250	0
Making a garden at the new District Judge's residence, Kalutara	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Immigrant cooly camp, Paumben	300	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	300	0
Model distillery at Kalutara	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	245	25
Electric lighting of Nanu-oya	62,274	26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62,274	26
Electric lighting of Nuwara Eliya	—	—	3,731	96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,731	96
	—	—	847	21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	847	21

No. 3.—Statement of Expenditure, 1912-13—contd.

Classification.	Province.										Total.	
	Province.											
	Western.	Central.	Southern.	Northern.	Eastern.	North-Western.	North-Central.	Uva.	Sabara-gamuwa.	Miscellaneous.		
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Works chargeable to Surplus Balances, Loans, &c.—contd.												
Completing iron fencing, motor driver's bungalow, Badulla	—	—	—	—	559 43	—	—	—	—	—	—	—
Drains along Dutch Point road	—	—	8,702 90	—	—	—	—	—	—	—	—	—
Ophthalmic ward, Galle Hospital	—	3,622 63	—	—	—	—	—	—	—	—	—	—
Ophthalmic ward, Kandy Hospital	9,790 33	—	—	—	—	—	—	—	—	—	—	—
Additions to Victoria Memorial Eye Hospital	1,402 40	2,288 63	—	—	—	—	—	—	—	—	—	—
Improvements to Victoria Memorial Eye Hospital	—	454 22	—	—	—	—	—	—	—	—	—	—
Strengthening arch culvert, Rajawela road	—	—	—	—	—	—	—	—	—	—	—	—
Improving Lindula-Agras road	1,282 70	—	—	—	—	—	—	—	—	—	—	—
Boundary walls, District Judge's quarters, Kalutara	138 60	—	—	—	—	—	—	—	—	—	—	—
Dredging of the Talduwa channel	—	—	—	—	474 1	—	—	—	—	—	—	—
Admiralty Establishment, Trincomalee	—	—	—	—	—	—	—	—	—	—	—	—
Painting Royal Naval Commissioner's house, &c., Trincomalee	—	—	—	—	513 97	—	—	—	—	—	—	—
Deviation of Cathedral road	1,106 34	2,255 97	—	—	—	—	—	—	—	—	—	—
Nuwara Eliya electric installation	—	—	—	—	—	—	—	—	—	—	—	—
Port lights at Hambantota and Batticaloa	—	—	4,882 53	6,570 24	8,097 23	—	—	—	—	—	—	—
Lighthouse at Kovilam Point	—	—	—	—	—	—	—	—	—	—	—	—
Repairs to Infectious Diseases Hospital, Kanatta	5,441 98	—	—	—	—	—	—	—	—	—	—	—
Investigating water supply, Cooiy Camp, Mandapam	—	—	—	—	—	—	—	—	—	—	—	—
Investigation in connection with Chilaw water supply scheme	—	—	—	—	—	—	—	—	—	2,889 13	—	—
New kitchens, Slave Island Police Station	7,561 43	—	—	—	—	—	—	—	—	—	—	—
Side drains through Norwood bazaar	—	119 78	—	—	—	—	—	—	—	—	—	—
Side drains through Pussellawa bazaar	—	550 0	—	—	—	—	—	—	—	—	—	—
Memorial to Lady Grotier, de Soysa Lying-in Home	—	—	—	—	—	—	—	—	—	—	—	—
Side drains along Kurunegala and Puttalam roads	3,042 38	—	—	—	—	—	—	—	—	—	—	—
Infectious Diseases Hospital, Badulla	—	—	—	—	—	—	—	—	—	—	—	—
Additions to Infectious Diseases Hospital, Kalutara	1,247 91	—	—	—	—	—	—	—	—	—	—	—
Roads to public latrines, Fort, Colombo	2,669 3	—	—	—	—	—	—	—	—	—	—	—
Alterations to Government Analyst's laboratory	284 45	—	—	—	—	—	—	—	—	—	—	—
Iron shed and store, Bacteriological Institute	387 50	—	—	—	—	—	—	—	—	—	—	—
Medical Department miscellaneous small works	—	—	—	—	—	—	—	—	—	—	—	—
Repairs to launch	1,301 92	—	—	—	—	—	—	—	—	—	—	—
Miscellaneous small works done for Military	—	—	—	—	—	—	—	—	—	—	—	—
Additions to Plague Camp, Galle	—	—	1,547 30	—	—	—	—	—	—	—	—	—
Steam disinfecter, Trinity House, Galle	—	646 0	—	—	—	—	—	—	—	—	—	—
Upkeep of buildings, &c., Ragama Camp	104 35	—	—	—	—	—	—	—	—	—	—	—
Laying new water pipes at Ragama Camp	446 16	—	—	—	—	—	—	—	—	—	—	—
Quarters, cattle sheds, fencing, and clearing lands, L.Ambepussa farm	9,999 28	—	—	—	—	—	—	—	—	—	—	—



No. 3.—Statement of Expenditure, 1912-13—contd.

Classification.	Province.										Miscellaneous.	Total.
	Western.	Central.	Southern.	Northern.	Eastern.	North-Western.	North-Central.	Uva.	Sabara-gamuwa.			
	Rs. c.	Rs. o.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.
<i>Works chargeable to Surplus Balances, Loans, &amp;c.—contd.</i>												
Hand vacuum cleaner, General Post Office	337 94	—	—	—	—	—	—	—	—	—	—	337 94
C. I. plates (electric lighting, Nanu-oya)	—	204 89	—	—	—	—	—	—	—	—	—	204 89
Erecting steam disinfecter (Plague Committee)	232 66	—	—	—	—	—	—	—	—	—	—	232 66
Iron hand carts, General Stores Account	—	—	—	—	—	—	—	—	—	—	—	—
Making and erecting two single shelves, Treasury	717 10	—	—	—	—	—	—	—	—	—	—	717 10
Fifty sets zinc stencil plates, Excise Commission	—	—	—	—	—	—	—	—	—	—	—	—
Furniture for mail room, General Post Office	957 45	—	—	—	—	—	—	—	—	—	—	957 45
Supplying and erecting mains for motor in brass room, Ceylon Government Railway	—	—	—	—	—	—	—	—	—	—	—	—
Making three private box sorting tables for mail room, General Post Office	750 0	—	—	—	—	—	—	—	—	—	—	750 0
Two third class ferry boats (Assistant Government Agent, Kalutara, Village Committee funds)	706 75	—	—	—	—	—	—	—	—	—	—	706 75
Testing cables, H.M.S. "Fox"	267 67	—	—	—	—	—	—	—	—	—	—	267 67
Cooly tickets	—	—	—	—	—	—	—	—	—	—	—	—
Railway castings	—	—	—	—	—	—	—	—	—	—	—	—
Cattle brands	—	—	—	—	—	—	—	—	—	—	—	—
Repairs to private motor cars, &c., of Government officers	—	—	—	—	—	—	—	—	—	—	—	—
Miscellaneous other works	—	—	—	—	—	—	—	—	—	—	—	—
	1,006,312 86	116,713 92	19,310 65	40,049 53	17,050 47	21,310 9	943 32	104,283 61	182,333 7	83,751 49	1,592,059 1	
Total Surplus Balances, Loans, &c.	2,743,316 13	887,442 18	405,049 53	360,771 18	338,994 77	562,454 70	233,748 23	701,279 87	705,980 34	427,883 48	7,366,920 41	
Grand Total												

No. 4.—Return of Roads.

Name of Road.	Length in Miles.			Cost of Maintenance during 1912-13.				Width of Track in Feet.			Average Cost per Mile.				Traffic Average Number of Carts per Diem over portions.				
	Natural.	Gravelled.	Metalled.	Total.	Natural.	Gravelled.	Metalled.	Track Metalled.	Total.	Natural.	Gravelled.	Metalled.	Natural.	Gravelled.	Metalled.	Track Metalled.	Natural.	Gravelled.	Metalled.
<b>WESTERN PROVINCE.</b>																			
<b>COLOMBO DISTRICT.</b>																			
Approach roads to public buildings in the Fort, Colombo		.99	.20	1.19				240 0											
Approach roads to public buildings outside the Fort, Colombo		6.39	.34	6.73		2,274 49	99 50	583 0											
Approach roads to railway stations, Main Line			.45	.45															
Approach roads to railway stations, Sea Coast Line		1	.80	1.80		486 59	493 75												
Approach roads to railway stations, Kelani Valley Line			.39	.39															
Kottie road			6	6			398 32	5,497 30											
Chatham street extension			.63	.63			3,397 98	944 60											
Demagoda to Wellampitiya			1.20	1.20			41,980 23	27,941 21											
Grandpass to 34th mile, Kandy road			31.30	31.30			12,994 0	5,476 28											
Grandpass to Avissawella			27	27			7,188 35	9,996 47											
Hanwella-Nambapana road			15	15			8,996 53	3,898 96											
Kelaniya to Biyagama			8	8			1,892 26	2,576 59											
Urugodawatta road			5	5			4,399 70	1,497 34											
Veyangoda to Bulatweldeniya			11	11			14,007 42	1,611 17											
5½ to 10th miles, Galle road			4.75	4.75			1,145 77	39,548 39											
Labugama road			8.50	8.50				1,598 28											
Pasayala to Attanagalla			4.25	4.25				8,999 70											
Padukka to Bope road			2.56	2.56				23,947 60											
Mipe-Millewa road			7.16	7.16				492 9											
Kosgama-Pugoda road			2.80	2.80				897 6											
Horana to Alutgama		9	21.42	30.42		4,845 40	14,007 42												
Approach roads to railway stations, &c., Kalutara District		1.87	1.56	3.43		1,145 77	1,611 17												
Tenth mile, Galle road, to Bentota			3	3			1,598 28												
Moratwa to junction of Kesbewa road			10.36	10.36			8,999 70												
Katukurunda to Neboda			22.77	22.77			23,947 60												
Panadura to Nambapana				.66				492 9											
Road to Beruwala Customs			1.75	1.75			897 6												
Neboda Hospital road			5	5			3,286 27												
Horawela-Moragalla road																			

No. 4.—Return of Roads—continued.

Name of Road.	Length in Miles.			Cost of Maintenance during 1912-13.				Width of Track in Feet.			Average Cost per Mile.				Traffic Average Number of Carts per Diem over portions.						
	Natural.	Gravelled.	Metalled.	Total.	Natural.	Gravelled.	Metalled.	Track Metalled.	Total.	Natural.	Gravelled.	Metalled.	Track Metalled.	Natural.	Gravelled.	Metalled.	Track Metalled.	Natural.	Gravelled.	Metalled.	
																					Rs.
<b>WESTERN PROVINCE—contd.</b>																					
<b>Approach roads to public buildings, Kalutara District</b>																					
...	1.59	—	—	1.59	—	—	—	482 25	—	—	—	—	—	—	—	—	—	—	—	—	
Nagoda to Kallewellawa road	25.12	—	—	25.12	19,499 7	—	—	19,499 70	—	—	—	—	—	—	—	—	—	—	—	—	
Tebuwana-Anguruwatota road	4.50	—	—	4.50	2,899 67	—	—	2,899 67	—	—	—	—	—	—	—	—	—	—	—	—	
<b>NEGOMBO DISTRICT.</b>																					
<b>Approach road to Henaragoda railway station</b>																					
Mahara prison road	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Grandpass to Toppu	24.30	—	—	24.30	42,149 2	—	—	42,149 2	—	—	—	—	—	—	—	—	—	—	—	—	
Girulla to Pasvala	12	—	—	12	11,992 66	—	—	11,992 66	—	—	—	—	—	—	—	—	—	—	—	—	
Ja-ela to Kotadeniyawa	18.50	—	—	18.50	14,996 29	—	—	14,996 29	—	—	—	—	—	—	—	—	—	—	—	—	
Minuwangoda to Henaragoda	8.11	—	—	8.11	5,789 37	—	—	5,789 37	—	—	—	—	—	—	—	—	—	—	—	—	
Maha Hunupitiya to Mugurugampola	19	—	—	19	13,093 93	—	—	13,093 93	—	—	—	—	—	—	—	—	—	—	—	—	
Negombo to Girulla	23.50	—	—	23.50	24,987 57	—	—	24,987 57	—	—	—	—	—	—	—	—	—	—	—	—	
Veyangoda to Negombo	15.25	—	—	15.25	9,291 10	—	—	9,291 10	—	—	—	—	—	—	—	—	—	—	—	—	
Welisara to Ragama	5	—	—	5	2,894 62	—	—	2,894 62	—	—	—	—	—	—	—	—	—	—	—	—	
Approach roads to public buildings	—	—	—	—	92 10	—	—	92 10	—	—	—	—	—	—	—	—	—	—	—	—	
Ragama station road	—	—	—	—	639 98	—	—	639 98	—	—	—	—	—	—	—	—	—	—	—	—	
Approach roads to railway stations	—	—	—	—	1,443 44	—	—	1,443 44	—	—	—	—	—	—	—	—	—	—	—	—	
Dunagaha-Nilpanagoda road	—	—	—	—	297 52	—	—	297 52	—	—	—	—	—	—	—	—	—	—	—	—	
Total	21.78	389.67	—	411.45	10,919 14	384,755 77	—	395,674 91	—	—	—	—	—	—	—	—	—	—	—	—	
<b>CENTRAL PROVINCE.</b>																					
<b>KANDY DISTRICT.</b>																					
<b>Approach roads to public buildings</b>																					
Approach roads to railway stations	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Ampitiya road	—	—	—	—	1,079 42	—	—	1,079 42	—	—	—	—	—	—	—	—	—	—	—	—	
Kandy-Haragama-Kurundnoya road	—	—	—	—	100 38	—	—	100 38	—	—	—	—	—	—	—	—	—	—	—	—	
Katugastota to Queen's Hotel	—	—	—	—	2,570 86	—	—	2,570 86	—	—	—	—	—	—	—	—	—	—	—	—	
Lower Badulla road, Kandy section	—	—	—	—	5,620 62	—	—	5,620 62	—	—	—	—	—	—	—	—	—	—	—	—	
Peradeniya to Lewella ferry	—	—	—	—	37,924 98	—	—	37,924 98	—	—	—	—	—	—	—	—	—	—	—	—	
Peradeniya-Deltota-Bikligasgoda road	—	—	—	—	6,855 74	—	—	6,855 74	—	—	—	—	—	—	—	—	—	—	—	—	
Gotambe ferry road	—	—	—	—	1,554 94	—	—	1,554 94	—	—	—	—	—	—	—	—	—	—	—	—	
Maturata-Padiyapellella road	—	—	—	—	9,864 29	—	—	9,864 29	—	—	—	—	—	—	—	—	—	—	—	—	
Dumbara Valley approach road	—	—	—	—	33,832 99	—	—	33,832 99	—	—	—	—	—	—	—	—	—	—	—	—	
Total	1.75	—	—	1.75	1,785 90	—	—	1,785 90	—	—	—	—	—	—	—	—	—	—	—	—	
...	—	—	—	—	1,967 87	—	—	1,967 87	—	—	—	—	—	—	—	—	—	—	—	—	
...	—	—	—	—	797 75	—	—	797 75	—	—	—	—	—	—	—	—	—	—	—	—	
...	—	—	—	—	5,022 0	—	—	5,022 0	—	—	—	—	—	—	—	—	—	—	—	—	





DIMBULA DISTRICT.															
Craighead to Somerset	3-75	—	—	—	—	2,755 90	—	—	—	—	—	—	734 90	10	—
Craigie Lea to Lindula	6	—	—	—	—	9,649 62	—	—	—	—	—	—	1,606 84	200	—
Dimbula road, Nawalapitiya to Craigie Lea	20	—	—	—	—	15,043 75	—	—	—	—	—	—	752 18	100	—
Dolobage road	12-12	—	—	—	—	10,767 24	—	—	—	—	—	—	888 38	100	—
Dimbula-Dikoya junction (Dimbula junction to Hatton) ...	6-57	—	—	—	—	4,369 8	—	—	—	—	—	—	665 0	50	—
Holyrood road	3-30	—	—	—	—	571 63	—	—	—	—	—	—	1,905 43	700	—
Lindula to Nuwara Eliya (Lindula to Nanu-oya)	11	—	—	—	—	7,859 22	—	—	—	—	—	—	714 47	100	—
Tispane road	2-72	—	—	—	—	1,108 34	—	—	—	—	—	—	407 47	25	—
Approach roads to public buildings	23	—	—	—	59 95	—	—	—	—	—	—	—	—	—	4
Approach roads to railway stations	44	—	—	—	—	199 47	—	—	—	—	—	—	453 34	50	—
Horton Plains-Agras bridle path	8-10	—	—	—	—	507 75	—	—	—	—	—	—	—	—	—
Approach roads to goods shed, Nawalapitiya ...	23	—	—	—	—	301 47	—	—	—	—	—	—	—	—	300
Branch Roads.															
Lindula to end of Agra road ...	14	—	—	—	—	27,815 61	—	—	—	—	—	—	1,982 97	450	—
Railway Gorge road	3	—	—	—	—	1,657 33	—	—	—	—	—	—	552 44	50	—
Walaha road ...	1-91	—	—	—	—	946 75	—	—	—	—	—	—	495 68	25	—
Glenlyon-Preston road	2-55	—	—	—	—	1,595 96	—	—	—	—	—	—	625 86	20	—
DIKOYA DISTRICT.															
Approach roads to public buildings	1-33	—	—	—	—	496 35	—	—	—	—	—	—	651 16	—	—
Approach roads to railway stations	44	—	—	—	—	328 10	—	—	—	—	—	—	745 68	30	—
Carolina road	1-20	—	—	—	216 35	960 3	—	—	—	—	—	—	800 2	20	—
Dikoya road, Nawalapitiya to Hatton bridge junction	21-70	—	—	—	—	16,659 2	—	—	—	—	—	—	767 70	30	—
Dimbula-Dikoya junction road	1-50	—	—	—	—	3,105 47	—	—	—	—	—	—	2,070 31	450	—
Ginigathena to boundary of Province	7-67	—	—	—	—	5,395 40	—	—	—	—	—	—	703 44	17	—
Strathdon-Fruit Hill road	1-70	—	—	—	—	974 80	—	—	—	—	—	—	573 41	55	—
Dikoya road, Hatton bridge junction to Norwood bridge	4-98	—	—	—	—	17,049 20	—	—	—	—	—	—	3,423 53	450	—
Glenugie-Upoot road	2	—	—	—	—	1,338 78	—	—	—	—	—	—	669 39	5	—
Branch Roads.															
Bathford Valley road	6-60	—	—	—	—	4,250 94	—	—	—	—	—	—	644 8	42	—
Dikoya road, Norwood bridge to Campion	10-05	—	—	—	—	10,494 9	—	—	—	—	—	—	1,044 19	120	—
Maskeliya road, Norwood bridge to Moray	9-73	—	—	—	—	13,484 41	—	—	—	—	—	—	1,385 86	175	—
Maskeliya road, Maskeliya to Cruden	3-60	—	—	—	—	3,205 64	—	—	—	—	—	—	890 46	35	—
Maskeliya road, Brownlow to Lucombe	3-87	—	—	—	—	2,879 44	—	—	—	—	—	—	744 4	25	—
Norton-Carolina road	5-25	—	—	—	—	4,602 62	—	—	—	—	—	—	876 69	30	—
Norwood-Upoot road	7-90	—	—	—	—	7,426 66	—	—	—	—	—	—	941 35	50	—
Wanarajah road	4-50	—	—	—	—	2,998 5	—	—	—	—	—	—	665 23	60	—
Annfield road	3-50	—	—	—	—	2,184 1	—	—	—	—	—	—	624 0	25	—
Total	56-38	63-42	605-38	725-18	4,349 37	22,959 5	658,715 28	686,023 70	77 14	362 2	1,088 10	—	—	—	—





No. 4.—Return of Roads—continued.

Name of Road.	Length in Miles.				Cost of Maintenance during 1912-13.				Width of Track in Feet.				Average Cost per Mile.				Traffic Average Number of Carts per Diem over portions.				
	Natural.	Gravelled.	Metalled.	Track Metalled.	Total.	Natural.	Gravelled.	Metalled.	Track Metalled.	Total.	Natural.	Gravelled.	Metalled.	Track Metalled.	Total.	Natural.	Gravelled.	Metalled.	Track Metalled.	Total.	
<b>EASTERN PROVINCE.</b>																					
<b>BATTICALOA DISTRICT.</b>																					
Coast road north, Batticaloa ...																					
Kalkuda road ...	27			20	47		16,049 39		23,340 65	39,390 4		8		7½	594 42		12		1167 8	54	
Maduru-oya to Eravur ...			44-25	3-50	44-25				3,467 9	3,467 9				7½					990 59	19	
Pankudaveli road ...		1-50			1-50	249 65				249 65		8			166 43		25			86	
Road from the resthouse to the bar, Batticaloa ...				3	3				4,019 17	4,019 17				7½					1,839 72	25	
Kalkuda-Valaichenai road ...				2-75	2-75				1,975 84	1,975 84		8		7½	172 44				718 48	19	
Approach roads to public buildings ...		.75			.75	129 33				129 33											
<b>KALMUNAI DISTRICT.</b>																					
Alkaraipattu-Sagamam road...				11-50	11-50				6,601 95	6,601 95				7½					574 8	10	
Arasadi to Malkompuddi ...		1		3-25	3-25				2,354 48	2,354 48				7½					724 45	50	
Alkaraipattu-Irakkamam road ...						314 32				314 32		10			314 32		15				
Coast road, South ...	26-25	11-25		61	98-50	5,087 51			4,726 15	56,739 38		20		7½	193 81		10		775 34	80	
Karaitivu to Sammanturai and Irakkamam ...				13	13	4,355 72			6,694 48	6,694 48				7½					514 96	50	
Kalmunai-Chadiyantatalawa road ...				7-50	7-50				4,991 69	4,991 69				7½					665 55	30	
Pottuvil-Muppane road ...		19-50		2	21-50		7,791 60		799 14	8,590 74		10		9	399 57		20		399 57	20	
Kalmunai-Sea View road ...				.75	.75				455 20	455 20				7½	131 47				606 94	15	
Approach roads to public buildings ...		.87			.87	114 38				114 38											
<b>TRINCOMALEE DISTRICT.</b>																					
Coast road, Trincomalee District ...		34-19	8-15		42-34		20,290 53			26,925 44				12	593 46		30				
Gravets road, Trincomalee ...		5-40			5-40	1,953 41				1,953 41				16	361 74		200			7	
Road from salt stores, Nilaveli, to the high road ...			.61		.61				473 91	473 91										0	
Trincomalee to Kituluttu ...			29		29				22,837 52	22,837 52				12						25	
Trincomalee towards Anuradhapura ...			22-50		22-50				18,992 41	18,992 41				12						50	
Coast road to Toppur ...		1-61			1-61	1,304 18				1,304 18		14			810 5		10			60	
Approach roads to public buildings ...		.66			.66	294 63				294 63					446 41						
Road to the new salt stores, Nilaveli ...			.21		.21				227 25	227 25				12						25	
Road from Foul Point to Shell Bay ...		.75			.75	301 34				301 34				12	401 79		4				
Approach road to north salt store ...			.20		.20				198 94	198 94										25	
<b>Total</b> ...	26-25	104-48	104-92	128-25	363-90	53,148 48	113,257 59	101,995 84	273,489 42	193 81	508 69	1,079 47	795 29								







No. 4.—Return of Roads—continued.

Name of Road.	Length in Miles.			Cost of Maintenance during 1912-13.				Width of Track in Feet.			Average Cost per Mile.				Traffic Average Number of Carts per Diem over portions.		
	Natural.	Gravelled.	Metalled.	Natural.	Gravelled.	Metalled.	Track Metalled.	Total.	Natural.	Gravelled.	Track Metalled.	Natural.		Gravelled.		Metalled.	
												Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.
<b>PROVINCE OF UVA—contd.</b>																	
Wellaya to Tanamalwila ...	14.4	—	21.5	—	—	13,996 8	—	—	—	—	—	—	—	—	—	—	—
Wellaya to Monargala and towards Pottuvil	—	10.25	47.15	1,747 13	2,374 17	15,006 35	—	—	10	10	—	121 33	231 62	—	—	25	—
Muppene bazaar road ...	—	.28	.28	101 50	—	—	—	—	12	—	—	362 50	—	15	—	75	—
Approach roads to public buildings	—	.72	.72	99 25	—	—	—	99 25	8	—	—	137 85	—	—	—	—	—
<i>Branch Road.</i>																	
Koslanda bazaar to Poonagala factory	—	—	2.75	—	—	1,927 45	—	—	—	10	—	—	—	—	—	6	—
Total ...	97.40	22.92	423.70	8,506 73	6,978 93	245,127 88	16431 88	277,045 42	—	—	—	87 33	304 49	—	—	—	—
<b>PROVINCE OF SABARAGAMUWA.</b>																	
<b>RATNAPURA DISTRICT.</b>																	
Bulutota-Eraporuwa road ...	6	—	6	462 50	—	—	—	462 50	6	—	—	—	—	—	—	—	—
Morawaka-Rakwana bridle road	11	—	11	905 0	—	—	—	905 0	6	—	—	—	—	—	—	—	—
Madampe towards Hambantota	—	21.50	37.50	—	10,672 4	6,066 0	—	16,738 43	10	10	—	—	496 39	10	—	15	—
Pelmadulla to Gilgarron ...	—	29.75	29.75	—	—	18,777 81	—	18,777 81	9.50	—	—	—	—	—	—	40	—
Ratnapura to Halpe	—	45	45	—	—	39,609 24	—	39,609 24	10	—	—	—	—	—	—	60	—
Riverside road, Ratnapura	—	1	1	—	—	806 20	—	806 20	10	—	—	—	—	—	—	100	—
Roads to Government premises, Ratnapura	—	2.75	2.75	—	568 33	—	—	568 33	7	—	—	—	206 66	—	—	—	—
Rakwana-Bulutota road	—	.70	.70	—	—	486 0	—	486 0	—	8	—	—	—	—	—	5	—
Elleerawa-Pinnawala road	—	5	6.50	—	600 0	1,800 0	—	2,400 0	9	9	—	—	400 0	8	—	10	—
Kukul korale road	—	10	10	—	—	7,126 41	—	7,126 41	10	10	—	—	—	—	—	80	—
Approach road to Ratnapura station	—	.30	.30	—	—	227 55	—	227 55	—	18	—	—	—	—	—	100	—
<i>Branch Roads.</i>																	
Ratnapura-Malwala ferry road	—	5	5	—	—	4,118 77	—	4,118 77	—	8	—	—	—	—	—	10	—
Balangoda-Chetnole road ...	—	3	3	—	—	1,733 9	—	1,733 9	—	10	—	—	—	—	—	15	—
<b>AVISSAWELLA DISTRICT.</b>																	
Avissawella-Ratnapura road ...	—	26	26	—	—	23,007 24	—	23,007 24	—	12	—	—	—	—	—	50	—
Nambapana road	—	19.75	19.75	—	—	12,913 98	—	12,913 98	—	9	—	—	—	—	—	50	—
Avissawella towards Ginigathena	—	26.50	26.50	—	—	21,849 24	—	21,849 24	—	12	—	—	—	—	—	100	—
Ferry approaches at Ruwanwella, Karawanella, and Sitawaka	—	.75	.75	—	—	331 49	—	331 49	—	8	—	—	—	—	—	—	—



No. 5.—Bridges constructed at the Government Factory during 1912-13.

Factory Order No.	Number of Spans.	Name.	Spans. Ft. in.	Clear Width. Ft. in.	Weight per ft. run.			Total Dead Weight. Cwt.	Safe live load per square ft. calculated. lb.	Estimated Cost.		Type of Bridge.
					Girders. Cwt.	Flooring. Cwt.	Road Materials. Cwt.			Per ft. run. Rs. c.	Total. Rs. c.	
170 of 1911-12	1 out of 2	Kitulgala, Avissawella District	55 10½	14 0	4.54	3.13	10.09	993.08	120	120 73	6,746 0	Lattice girder and corrugated floor (skew bridge)
290 of 1911-12	{	Kukul korale road (3rd section)	60 0	14 0	4.83	3.02	10.12	1,159.06	120	112 43	6,746 0	Do.
294 of 1911-12	2	Ja-ela	55 6	14 0	3.82	1.77	11.12	568.14	120	69 77	2,093 0	Rolled beams and curved plates
430 of 1911-12	1	Nambapana road	50 0	12 0	4.50	2.81	12.80	2,413.20	120	121 55	13,492 0	Lattice girder and corrugated floor
436 of 1911-12	1	Sudu-ganga, Matale District	80 0	14 0	4.07	2.48	8.02	794.06	120	101 14	5,057 0	Do.
1 of 1912-13	1	Nambapana road	50 0	12 0	5.72	2.91	9.58	1,456.80	120	120 65	9,652 0	Do.
5 of 1912-13	1	Tuntota-oya, Narammulla-Dummala-suriya road	50 0	12 0	4.07	2.48	8.02	794.06	120	101 14	5,057 0	Do.
44 of 1912-13	10	Karandupone-Rambukkana road	79 9	14 0	5.72	2.91	9.58	1,456.80	120	121 02	9,652 0	Do.
71 of 1912-13	1	Alawwa-Dampelessa road	31 0	14 10	3.82	1.77	11.12	5,681.40	120	71 55	22,182 0	Rolled beams and curved plates
108 of 1912-13	1	Bandarawela-Poonagala road	30 0	14 10	3.82	1.77	11.12	568.14	120	69 77	2,093 0	Do.
154 of 1912-13	3	Muppane-Pottuvil road	30 0	11 4	3.10	1.32	8.50	439.28	120	55 10	1,653 0	Do.
195 of 1912-13	1	Kalawellawa-Bellapitiya road	30 0	11 4	3.10	1.32	8.50	1,317.84	120	55 10	4,959 0	Do.
237 of 1912-13	1	Watagoda-Talawakele road	32 0	14 10	3.10	1.32	8.50	439.28	120	55 10	1,653 0	Do.
399 of 1912-13	1	Galmul-oya	30 0	14 10	4.29	1.77	11.12	549.76	120	94 25	3,016 0	Rolled beams and corrugated floor
405 of 1912-13	4	Kalawellawa-Bellapitiya road	30 0	14 10	3.82	1.77	11.12	568.14	120	69 77	2,093 0	Rolled beams and curved plates
425 of 1912-13	3	Deviation, Hatton-Norwood road	30 0	11 4	3.10	1.32	8.50	1,757.12	120	55 10	6,612 0	Do.
				22 0	5.27	2.64	16.49	2,488.80	120	100 0	9,000 0	Rolled beams and curved plates (skew bridge)
454 of 1912-13	1	Deduru-oya, Kurunegala-Dambulla road	60 0	13 5	7.57	3.38	8.25	1,267.30	120	40 50	2,430 0	Pin Warten girder and corrugated floor (converted railway bridge)
464 of 1912-13	2	Do.	40 3	14 0	2.65	3.19	9.31	1,348.34	120	92 82	7,472 0	Lattice girder and corrugated floor
496 of 1912-13	8	Maha-oya, Kegalla-Polgahawela road	40 0	14 0	2.65	3.19	9.31	674.17	120	93 40	3,736 0	Do.
1 of 1913-14	2	Andiambalama	30 0	18 5	4.55	2.21	13.81	5,595.04	120	84 43	20,264 0	Rolled beams and curved plates
	63	Bridges under 30 ft. span	30 0	14 10	3.82	1.77	11.12	1,136.28	120	70 0	4,200 0	Do.
		Fitting corrugated iron platform to Kalutara bridge, 4 spans out of 12, and stone paving 12 spans						16,748.40			57,947 0	
		Girders and tie rods for Galle Face bridge										
		Corrugated iron platform for Kimbulwana-oya bridge									60,933 34	
		Repairs to bridges									33,200 0	
											1,840 0	
											13,951 25	
											317,729 59	



