ANNUAL PROGRESS REPORT

OF

PUBLIC WORKS

IN THE

BOMBAY PRESIDENCY,

FOR THE YEAR 1864-65.

Bombay:
PRINTED FOR GOVERNMENT
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1865.

The appropriations for the Public Works of the Bombay Presidency during the year 1864-65 were as follows, exclusive of the grant for the purchase of land for Railways :—

Imperial Funds	Rs. 1,27,25,266
Local Funds	,, 25,30,638
Total	Rs. 1,52,55,904

And the approximate gross expenditure in the year, including establishment, has been Rupees 1,21,02,691, showing a difference of Rupees 31,53,213 less than the appropriations.

Of this expenditure the approximate cost of establishment during the year was Rupees 16,16,470, giving a per-centage of 13·35 on the gross expenditure.

PROGRESS REPORT.

MILITARY.

ARMY.

Fortifications.

ARMY.

Oyster Rock Battery.

1. *Bombay.*—The operations were recommenced on the 22nd September 1864, and at the close of the season the state of the work was as follows:—

2. The outer revetments, including piers, arches, and the cut-stone masonry under the arches completed, and the faces of the work generally raised to the level of the terreplein, or to 15 feet above high-water mark.

3. The work remaining to be done consists of the interior revetment of the terreplein of rubble masonry faced with ashlar, the earthen filling in of the terreplein between the outer and inner revetments, and the completion of the parapet, bonnettes, and traverses.

4. The magazine and shell-room, the parapet wall to the gorge, and the racers for the guns have also to be provided.

5. The spandrils over the arches are filled in with concrete faced with ashlar.

6. The parapets are of moorum, with slight retaining walls of masonry.

7. During the year 64,000 cubic feet of ashlar and 970 cubic feet of rubble masonry have been set, 20,000 cubic feet of concrete, and 65,000 cubic feet of moorum filling between the parapet, retaining walls, under the arches, &c.

8. The exact nature of the armament of this battery, and the necessary additions and alterations to meet the requirements of modern artillery not being yet decided upon, renders it difficult to name the period required for its completion; but in all probability the year 1867 will see the Oyster Rock Battery armed, and completed as far as the most essential points are concerned.

Middle Ground Battery.

9. During the monsoon months of July, August, and September 1864 very little was done.

10. In October 1864 the work was fairly started.

11. In December 1864 a space 60 feet by 20 was raised to about 5 or 6 feet above high-water mark, levelled, covered with moorum, and a temporary office erected for the officer in charge of the work.

ARMY.

12. In February 1865 a gang of work-people was entertained to carry up the stone from the sides towards the interior of the filling, as the boats could not get sufficiently near to unload.

13. In March 1865 an elliptical figure 400 feet by 300 feet, to serve for the platform of a battery 300 feet by 200 feet, with a berm of 50 feet clear all round, had been filled in.

14. In May all operations were stopped for the monsoon.

15. The elliptical figure, 400 feet by 300 feet of an area of nearly two acres, is about 6 or 7 feet above the irregular space between it and low-water mark, and with the exception of the site for the office, averages 3 feet below high-water spring tides.

16. 2,98,699 cubic yards of stone have been thrown down over the shoal from the commencement of work up to 30th April 1865.

17. The area visible at low-water springs is 14,910 square yards or 3$\frac{1}{7}$ acres.

Cross Island Battery

18. Completed and armed; some trifling work in connection with the approach has been carried out.

Colaba Point Battery.

19. Completed and armed.

Butcher's Island Battery.

20. Completed.

Kennery Island Quarry.

21. The bay on the north-east side of the island has been improved, and piers built.

Pau Pir Quarries.

22. The two piers have been strengthened and improved, tramways laid down, magazine, store-room built, and officer's bungalow completed.

23. The quarries are now in good working condition.

24. The expenditure on the Bombay Defences for the year has been—

	Rupees.	Rupees.
Oyster Rock Battery	3,27,933	
Middle Ground Battery	6,11,702	
Cross Island Battery	2,520	
Colaba Point Battery	920	
Butcher's Island Battery	294	
Expended on the Batteries	....	9,43,369
Pau Pir Quarries	1,26,797	
Kennery Island Quarry	27,622	
Tools, Plant, and Stores	1,26,016	
Expended in connection with the Batteries	....	2,80,435
Total expended in 1864-65	....	12,23,804

ARMY.

Removal of the Western Ramparts.

25. The demolition of the Western Ramparts has been completed.

Expended in 1864-65.....Rs. 8,377
Budget allotment ..... „ 9,417

Removal of the Eastern Ramparts.

26. The demolition of the Ramparts from the Mint to Fort George on the Eastern face of the town has been completed, with the exception of a small portion on which some markets abut.

Expended in 1864-65 .....Rs. 9,472
Budget allotment 1864-65 .... „ 10,000

Isthmus Defences.

27. *Aden.*—Three-fourths of the plastering of the parapet and ramparts has been done, and the slopes of the ramparts have been revetted with stone.

Expended in 1864-65 .....Rs. 15,129

Ras Tarshyne Battery.

28. Racer beds have been laid down in the battery this year. Shell-room and magazine completed, and moveable bridge fixed. Pivots have been obtained from Bombay, and the work will be carried out next season.

29. An additional magazine and shell-room are in fair progress, their side walls and roofs having been built this year.

Expended in 1864-65 .....Rs. 6,726
Allotment 1864-65..... „ 7,337

Ras Morbut Mole Battery.

30. The additions referred to in last year's report are completed.

31. A masonry platform has been laid and a traversing gun mounted. A shell-room has been commenced and completed.

Expended in 1864-65.....Rs. 2,936
Allotment 1864-65..... „ 3,285

West Cliff Battery.

32. Shell-room commenced and completed.

Expended in 1864-65..... Rs. 1,390
Allotment 1864-65 ..... „ 1,396

ACCOMMODATION FOR TROOPS.

Upper-storied Barracks, Steamer Point.

33. One Barrack, with Cook-house, Wash-house, a Urinary, Privies, Canteen, Water and Meat Shed, and Quarter Guard have been handed over to the troops; also a Patcherrie with its out-houses for 9 families. Work done this year consists in completing the superstructure, roofing, &c. of one Barrack, roofing in and completing the out-houses to the same, likewise roofing in and completing a Patcherrie with its out-houses, and building the Guard-room and Water and Meat Shed. It is expected that the remainder of the work will be completed next official year if funds are forthcoming.

Expended in 1864-65 ..... Rs. 60,787
Budget allotment 1864-65 .... Rs. 40,170
Further grant ..... „ 20,000
60,170

Four Upper-storied Barracks, Front Bay.

34. One Barrack has been given over to the troops, another made ready for the roofing, leaving two Barracks not yet begun.

Expended in 1864-65 ..... Rs. 34,976
Budget allotment 1864-65 .... „ 35,170

Subsidiary Buildings to Barracks at the Isthmus.

35. Two Patcherries with out-houses, Quarter Guard, Canteen, Library, Hospital with Non-Commissioned Officers' Mess Cook-house, Cookroom to Barracks, 2 Washhouses, 2 Water and Meat Sheds, 1 Privy, 2 Urinaries, Hospital with out-houses, Apothecary's quarters and out-houses, have either been given over or are nearly ready for the troops. During the year the Patcherries and out-houses, Quarter Guard, Canteen, Library, Hospital, and Apothecary's quarters with out-houses have been roofed in, and the superstructure of the Commissariat Stores nearly completed.

Expended in 1864-65 ..... Rs. 70,599
Budget allotment 1864-65. Rs. 20,000
Supplementary do. „ 20,000
Further grant ..... „ 30,000
70,000

Native Infantry Lines.

36. This year 4 Married Men's Pendalls, 4 Non-Commissioned Officers' Quarters, Rear Guard, and Water Shed have been completed. All remaining buildings, except those last year as per margin, have been completed to roofing, namely 6 Pendalls for single men, and 2 Pendalls for married men.

24 Pendalls.
12 Non-Commissioned Officers' Quarters.
1 Quarter Guard.
2 Water Sheds.

Expended in 1864-65 ..... Rs. 19,824
Supplementary Budget allotment 1864-65. „ 20,000

Quarters for Sick Officers at Matheran.

37. *Northern Concan.*—Quarters for three officers are complete, with the exception of glazing, colouring, and ceilings, and the roofing and completing of the out-houses.

Allotment for 1864-65 ..... Rs. 10,435
Expenditure during 1864-65.... „ 9,176
Unexpended balance ..... „ 1,259

38. This deficiency in the expenditure during the year is due to the general pressure on the labour market, and to the scarcity of water on the hill, which interfered with the vigorous prosecution of the masonry work.

39. *Mount Aboo.*—13 out of 16 Barracks are completed and all occupied by the detachment. The remaining 3 Barracks are very nearly completed. All the out-houses are occupied, except one latrine, which will be ready immediately. The subsidiary buildings in connection with the Barracks will now be vigorously pushed on.

Sanctioned allotment for 1864-65—

For Barracks and Out-houses .... Rs. 80,885
For Hospital, Patcherries, &c..... „ 18,000

Amount expended in 1864-65 .... Rs. 98,885

Stables for Royal Artillery.

40. *Deesa.*—Nearly completed. The buildings will be ready for occupation before the end of May. The remainder of the estimate, Rupees 3,315, is to be provided in 1865-66.

Sanctioned allotment for 1864-65.. Rs. 10,296
Expended in 1864-65..... „ 10,296

Converting the old Golundauze Hospital into a Staff Hospital.

41. *Ahmedabad.*—The spaces between the posts in front of the shed have been built up with brick and mud masonry. Work commenced in March and completed in April 1865.

Amount of sanction ..... Rs. 961
Expended in 1864-65 ..... „ 913

Piggery.

42. *Mount Aboo.*—Far advanced towards completion, and will probably be made over to the Commissariat Officer about the 25th May.

Sanctioned allotment 1864-65.. Rs. 3,084
Expended in 1864-65..... „ 3,084

Barracks at Wanowree.

43. *Poona.*—The construction of the two upper-storied Barracks and a range of Patcherries with subsidiary buildings at Wanowree has been contracted for by the Bombay Building and Contract Company, and they should be nearly finished; the Company are however performing their work very slowly, and it will be taken from them on the expiration of the time allowed for its completion, viz. 23rd June 1865. The walls of inner buildings are raised to an average height of 15 feet, and the family quarters are finished and given over for occupation.

Allotment .. .. Rs. 80,699
Additional allotment ..... „ 14,411
Rs. 95,110
Amount expended to 30th April 1865 Rs. 39,698

A Range of Family Quarters for European Sappers and Miners at Poona.

44. The range has been given over for occupation, but it is not wholly finished: it contains 20 quarters, each affording accommodation of 2 rooms 16′×12′ and 16′×18′ and a verandah in front.

Allotment	Rs.	27,037
Additional allotment	,,	3,000
	Rs.	30,037
Amount expended to 30th April 1865	,,	17,394

9 lower-storied Barracks with fittings at Kirkee.

45. *Kirkee.*—These barracks have been wholly finished and given over for occupation, they have been undertaken by contract, and the work is not very satisfactory, owing to the estimate and contract having been made previous to the great rise in the price of labour and materials at Poona.

Allotment.....	Rs.	11,085
Additional grant	,,	13,076
	Rs.	24,161
Amount expended to 30th April 1865	Rs.	21,077

Iron Stabling at Kirkee.

46. 100 stalls were obtained from England and erected for the Artillery Horses at Kirkee as an experiment. The cost has amounted to Rs. 161 per stall. The efficiency of these stables has yet to be considered and determined by the Military authorities.

Allotment	Rs.	30,000
Expenditure up to 30th April 1865..	,,	16,183

Stables for Cavalry at Ahmednuggur.

47. *Ahmednuggur.*—Three out of seven blocks have been completed, and the foundations and filling in to the level of the plinth have been laid down for a fourth range; each building is 317 feet in length, 30 feet wide, resting on four rows of masonry pillars, the two inner 14½ feet high, and two outer 7½ feet; there is standing room in each shed for 70 horses, thus affording altogether accommodation for 490 horses. On the completion of two blocks, it was urged by the Regimental authorities that the width of the buildings was too limited, and a recommendation was made to make an addition of four feet, which has finally been sanctioned; the reference caused considerable delay in the progress of the work.

Allotment	Rs.	27,021
Expenditure up to 30th April 1864.	,,	20,408

Barracks for the Royal Horse Artillery.

48. The work has not been commenced, beyond collecting materials and making some alterations and additions to the existing hospital building, in consequence of Government having directed new designs to be prepared according to the recent instructions and improvements for barrack buildings

recommended by the Government of India. The modified plans and estimates have been prepared and submitted for sanction.

Allotment	Rs.	60,813
Expenditure 1864-65	,,	13,881

Two new Barracks with Outhouses at Poorundhur.

49. *Poona District.*—One of these Barracks (which are to accommodate 30 men in each) has been built to its full height, 18 feet, roof in progress; the other about half finished.

Allotment in the Budget 1864-65....	Rs.	19,855
Expended in 1864-65.....	,,	8,769

Quarters for 24 Families attached to Barracks at Sattara.

50. *Sattara.*—Quarters for 12 families were nearly completed last year; the quarters for the whole 24 were completed this year. Rs. 27,694 have been spent on this work this year. The original Budget allotment was Rs. 15,292, and Rs. 11,857 was supplementary, making a total of Rs. 27,149.

Stables with Subsidiary Buildings for Royal Artillery.

51. *Belgaum.*—Most of the subsidiary buildings that were in course of erection at the commencement of the year have been completed. They consist of Guard-rooms, Gun-sheds, Harness and Store-rooms, Canteen and Coffee-rooms, and quarters for the Farrier. The School and Orderly-rooms, with Serjeants' Mess and School Master's quarters, will be available before the setting in of the monsoon, or very soon after.

52. There are besides these other subsidiary buildings, comprising Workshop, Forge, Magazine, Guard-room for Horse Lines, and quarters for Serjeant Major and Quarter Master Serjeant, to be constructed before the arrangements for the Royal Artillery in Camp can be said to be complete. Provision has been made for these in the Budget for 1865-66.

Allotment for 1864-65	Rs.	7,439
Additional funds granted { Rs. 11,020 / ,, 14,041 }	,,	25,061
Expenditure during 1864-65	,,	24,801

Library for European Troops.

53 This building, which was in progress last year, has been completed. Expenditure in 1864-65 Rs. 2,802.

Gun Powder Factory at Kirkee.

54. *Poona.*—The new Powder Works at Kirkee were commenced in December last, and several of the buildings and the enclosure walls are nearly finished. It is possible to complete the factory within a year if the machinery arrives from England, but until water is brought to the site it cannot be used, as the consumption per hour for feeding the boilers and the condensers of the steam engines will not be less than 16,000 gallons.

ARMY.

Allotment..... Rs. 2,50,000
Amount expended to 30th April 1865 „ 1,74,518

Constructing a new Steam Bakery at Poona.

55. This has been wholly finished, and is now at work, and the Commissariat officer has reported that it is a highly remunerative work.

Amount of Estimate ..... Rs. 19,177
Amount expended to 30th April 1865.. „ 18,814
(or Rs. 9,588 in 1864-65, and the remainder in the preceding year.)

Stables for R. A. Horses at Hydrabad and Kurrachee.

55A. *Smd.*—The only important buildings constructed during the year were Stables for the Royal Artillery Horses at Hydradad and Kurrachee, at a cost of Rs. 26,727.

CIVIL BUILDINGS.

REVENUE.

REVENUE.

Sawergaum Cutcherry.

56. *Nassick.*—The sum of Rs. 4,285 has been expended in this year; the work was suspended, owing to discussions with reference to a better site; after some delay the matter was settled, and the work commenced in the month of June 1864. since which time it has been advancing as rapidly as possible.

Sanctioned amount..... Rs. 9,799
Expenditure in 1864-65 ..... „ 4,285

Mamlutdar's Cutcherry, Belgaum.

57. *Belgaum.*—This building, with its two towers of defence, is in an advanced state. It will probably be completed by the opening of the monsoon.

Estimated cost ..... Rs. 9,684
Sanctioned allotment from Reserve Fund.... „ 5,684
Expenditure during 1864-65 ..... „ 5,015

Erecting Mamlutdar's Cutcherries at Kolgutchee and Hureekurroor.

58. *Dharwar.*—These buildings have been completed.

Sanctioned ..... Rs. 2,049
Expenditure ..... „ 2,176

Collector's Cutcherry, Carwar.

59. *Canara.*—The amount (Rs. 25,000) allotted on this account has been expended. The superstructure of the Cutcherry itself was finished ready for the tresses, and the outbuildings were completed.

Mamlutdar's Cutcherry, Hullial.

60. Little more than 1,200 out of 14,420 Rs. sanction expended, owing to difficulty of procuring labourers.

REVENUE.

Mamlutdar's Cutcherry, Compta.

61. Sanction Rs. 12,420 nearly half expended. Superstructure completed and roofing in hand.

Custom House at Karanja.

62. *Northern Concan.*—The foundation and plinth have been completed and the wood-work prepared.

Budget allotment 1864-65..... Rs. 1,999
Expenditure during 1864-65.... „ 1,238
Unexpended balance..... „ 761

63. The work is suspended, owing to a difference between the Revenue and Customs Department regarding the land on which it is being built.

Custom House at Alibagh.

64. This building will, it is hoped, be completed before the rains set in.

Allotment for 1864-65... .... Rs. 2,769
Expenditure during 1864-65 ... „ 1,957

Adapting a portion of Surat Castle for a Custom House.

65. *Surat.*—A barrack has been converted into a Custom House and some other alterations effected. A timber bridge on the ditch of the castle has been constructed to provide easy access from the Custom House to the Chaput Bunder.

Allotment in the Budget 1864-65 .. Rs. 3,865
Expenditure in 1864-65..... „ 1,665
Excess.. Rs. 740

The work has been completed.

Quarters for the Customs Establishment at Rye Moordhey.

66. *Northern Concan.*—These buildings are nearly completed. Only wattle and daub partitions remain to be done.

Allotment for 1864-65..... Rs. 10,058
Expenditure during 1864-65 .... „ 8,024
Saving.... Rs. 2,034

Additions and alterations in the (Surat) Castle for Cutcherry purposes.

67. *Surat.*—Several buildings, which were formerly used as Soldiers' Barracks, &c. have been adapted for the use of the Collector's Establishment. This work was commenced in 1863-64 (and Rupees 921 were expended during that period) and completed in 1864-65, at a total cost of Rupees 1,401.

Post Office at Rotundee

68. *Northern Concan.*—Superstructure nearly finished, and woodwork prepared.

The building is expected to be completed before the monsoon.

Allotment for 1864-65 ..... Rs. 1,210
Expended in 1864-65 ..... „ 821

Post Office at Kurjut

69. The building is complete, and was given over to the Postal authorities in January last.

Expenditure during 1864-65 ..... Rs. 5,597

REVENUE.

Post Office at Poona Cantonment.

Post Office.

70. *Poona District.*—This building is nearly completed.

Allotment in the Budget 1864-65 ..... Rs. 1,001
Expended in 1864-65 ..... „ 1,518

Post Office, Canara.

71. *Canara.*—Building completed.

Allotment..... Rs. 6,000
Expenditure ..... „ 6,000

GENERAL.

Council Hall in New Neutral Lines at Poona.

72. *Poona.*—A house, No. 1, was purchased at Poona by the Public Works Department from Colonel Phayre for a Legislative Court House at a cost of Rs. 50,875.

New Residence for His Excellency the Governor at Ganesh Khind.

73. *Poona and Kirkee.*—Materials to the value of Rs. 4,320 have been collected for this building, but it has not been commenced, as the design was not ready in time.

Charitable Institutions.

Lower Ward, Jamsetjee Jeejeebhoy Hospital.

74. This building, the gift of the Honorable Mr. Rustomjee Jamsetjee Jeejeebhoy, is about two-thirds completed.

The Executive Engineer Presidency thus describes the work :-

"The main building consists of two large wards (27½′ × 19′) and two small wards (24′ × 19½′), with open corridors 11 feet in width in the front and rear, and 10 feet in width at the ends; in the two front angles of the corridors there are two bath-rooms (12′ × 12′), and in the rear angles two necessaries of similar size, including passages partitioned off. There is also a carriage porch covering 32′ × 20′, with three open archways, on clustered columns similar to the arches of the corridors, and a carriage archway of similar construction, affording a clear way of 10 feet in width between the plinths of the bases. The architecture of the building is early English of the 2nd period, and its construction is of irregular coursed Breccia rubble, with calcareous limestone dressings. The roofs over rooms are open timber frame work of a pitch of 45° and 60°, covered in with ⅞″ tongued and grooved planking and corrugated iron ornamented with cast iron galvanized crestings, with wrought iron hannerets and finials painted maroon with points oil-gilded; the flat roofs over corridors and porch consist of thin slabs of limestone with concrete and Portland cement over teak joists.

The foundations of a detached building are laid.

Expended in 1864-65 ..... Rs. 46,097
Supplementary Budget Allotment, 1864-65..... „ 81,070

GENERAL.

Conveyance Jail-anger Hospital, inserting Venetian Windows to.

75. *Surat.*—Teakwood venetian windows have nearly been completed and ready to be fixed at the expense of the founder of the hospital.

Expenditure in 1864-65 .... Rs. 2,000

Carriage Verandah Parekh's Dharmsala, in front of the Railway Station.

76. A corrugated iron roof has been fixed; doors and windows made during the year. The building has been completed and opened for the use of the public.

Estimated amount ..... Rs. 25,281
Amount expended ..... „ 25,828
Expenditure incurred in 1864-65 „ 7,829

Public Buildings at Matheran. Hospital.

77. *Northern Concan.*—The main building is very nearly completed, and will be handed over in a few days.

The out-house or Apothecary's quarters will also be finished very soon now.

Expenditure during 1864-65.. Rs. 4,007

David Sassoon Hospital

77A. *Poona.* This is a handsome cut-stone building, designed in the early English Gothic style, to contain 200 patients. Rs. 50,000 are contributed towards its erection, and one lakh for its endowment by the late Mr. David Sassoon.

78. The walls of the building have been built to within six feet of the roof, and it will be completed during the ensuing official year.

Budget allotment .. Rs. 50,000
Additional allotment „ 50,000 „ 13,979 } Rs. 1,13,979
Amount expended to 30th April 1865 „ 80,726

Presidency Mint.

79. *Bombay.*—The additions, divided by the Executive Engineer Presidency into 1st and 2nd set, are both completed.

The 1st set consists of Boiler Room (46½′ by 38′), Engine Workshop (34′ × 24′). Rooms for Engines of 20 and 40 Horse Power each, respectively (24′ by 10′) and (54′ × 14′), Rolling Mill Room (62′ × 54′), Stronghold (22′ by 12′), Annealing Room (48′ × 22′), Cutting-out Room (38′ × 18′), Adjusting Mill Room (38′ × 24′), Assorting Room (22′ × 22′).

Paving and part of verandah done during the year.

Expended in 1864-65 ..... Rs. 5,092
Supplementary Budget Allotment, 1864-65 „ 8,218

GENERAL

80. The 2nd set: "Coining Room" (75′ × 21′), a Vacuum Pump Room (51′ × 16′), Annealing Room (69′ × 25′), Milling Room (20½′ by 25½′), Shaking Room (18′ × 25½′), Stronghold (12½′ × 7½′), Office Room (15′ × 25½′), Weighing Room (62½′ × 24′).

Roofing, paving, and two Strongholds completed during the year.

Expended in 1864-65	.....	Rs. 27,837
Allotment 1864-65	.....	„ 27,848

ECCLESIASTICAL.

ECCLESIASTICAL.

Alteration to the Church at Matheran.

81. *Northern Concan.*—Expenditure during 1864-65 Rs. 2,717.

The sittings have all been made up in Tanna, and conveyed to Matheran, where they are now being fixed in the church. The Reading Desk is completed, and the Pulpit nearly so.

Other alterations and additions nearly completed, but the monsoon will intervene and stop work until October.

Church at Poonamallee.

82. *Poona District.*—This building, which is to accommodate 120 persons, has been nearly all finished. It was originally proposed to be built by private contributions, and was commenced by the Reverend Mr. Gell, without a regular plan and estimate. Government afterwards sanctioned Rs. 5,000 for completing it, but that amount did not prove sufficient.

Allotment sanctioned in Government Resolution No. 861 of 1865	.....	Rs. 3,500
Expended in 1864-65	.....	„ 6,288

Saint Paul's Church at Poona.

83. *Poona.*—A stone building, capable of accommodating 400 people, is in course of erection. The style of architecture is early English Gothic, and the walls of the edifice have been built up 12 feet from the ground.

Budget Allotment	.....	Rs. 30,000
Amount expended to 30th April 1865		„ 16,259

New Church at Kirkee.

Poona and Kirkee.—This building is a cut-stone Gothic edifice, and will contain 600 sittings. The walls have been built up to an average height of 8 feet.

Budget allotment	.....	Rs. 15,000
Amount expended to 30th April 1865		„ 13,153

Burying Ground at Ghorepoorce.

84. *Poona.*—A new Burial Ground for the Ghorepoorce Barracks at Poona has been enclosed by a masonry wall 6 feet in height, and the enclosure is 275 feet square.

Amount of estimate	.....	Rs. 7,544
Amount expended to 30th April 1865		„ 6,214

ECCLESIASTICAL.

Enclosure Wall to Burial Ground, Carwar.

85. *Canara.*—The work of "enclosure wall" to Protestant and Roman Catholic Burial Grounds, Carwar, was commenced in 1863-64 and completed in 1864-65, within Rs. 7,124. A simple wall of laterite and chunam, with two entrance gates.

Cantonment Church.

86. *Belgaum.*—This edifice, which was commenced eight years ago, and suspended before the foundations were completed, was recommenced in August 1864 upon a new design, in which the existing foundations were utilized as far as possible. It is now above ground and complete to the level, the bevilled plinth has been commenced, and a considerable quantity of stone is prepared ready for carrying on the work.

Budget allotment	.....	Rs. 20,000
Sanctioned for expenditure	..	„ 5,564
Expenditure during 1864-65	....	„ 5,395

JUDICIAL.

POLICE.

JUDICIAL.

Lock-up and Guard Room for Europeans at Dhoosawul.

87. *Khandeish.*—The work was commenced in January, and during the year Rs. 1,499 were spent. The whole will be complete in 1865-66. The work is about one-fourth completed.

One large and ten small Police stations in the Ahmedabad Collectorate.

88. *Ahmedabad.*

Khokra	Bhowsur	Stables at Charode.
Dhollera	Maudul	Sanund
Solla	Dholka	Stables at do.
Surkej	Stables at do.	Chuniar.
Buyud	Charode	

Of these only four, at Dholka, Surkej, Sanund, and Buyud, have been put in hand.

The stations at the remaining villages could not be commenced, owing to the breaking out of cholera in their neighbourhood, and want of proper supervision.

Allotment for 1864-65	.....	Rs. 18,450
Expended in 1864-65	.....	„ 3,003

Police stations at various stations on the Bombay, Baroda, and Central India Railway.

Maniekpoor.
Nowlee.
Verar.
Boyseer.

89. *Northern Concan.*—At stations as per margin work carried up to plinth level. At the stations of Mullianie and Sunjan work was not commenced.

CIVIL BUILDINGS.

JUDICIAL.

Delay occurred by encroachment by the Railway on the ground required, and by a want of tenders from contractors.

Allotment for 1864-65 ..... Rs. 15,422
Expenditure during 1864-65 .. ,, 2,459

Police Lines at Wappee.

90. *Surat.*—Completed with stone and lime masonry and roof of corrugated iron.

Estimated amount ..... Rs. 2,006
Expenditure in 1864-65..... ,, 2,052

Converting the old Mamlutdar's Cutcherry at Broach into quarters for the armed Police.

91. *Surat.*—The old Cutcherry has been arranged to accommodate 2 Native Officers and 45 Sepoys. Work commenced in 186[illegible], and completed in 1864-65, at a total cost of Rupees 5,530.

Amount of sanction ..... Rs. 5,616
Expenditure in 1864-65..... ,, 4,989

EDUCATIONAL.

EDUCATIONAL.

Building for the Deccan College at Poona.

92. *Poona and Kirkee.*—The College is a handsome cut-stone building, designed in the Venetian Gothic style of architecture. It will accommodate 46 resident pupils. Sir Jamsetjee Jeejeebhoy contributed Rs. 1,25,000 towards its erection. The walls are raised 8 feet from the ground.

Allotment 1864-65 ..... Rs. 1,25,000
Expended up to 30th April 1865 ,, 76,149

Engineering College, Poona.

93. The site of an Engineering College near the Sungum is cleared, and materials collected for its erection. Mr. Cowasjee Jeehangeer has contributed Rupees 50,000 towards the erection of this building.

Amount of estimate..... Rs. 98,962
Expended to 30th April 1865..... ,, 338

PUBLIC IMPROVEMENTS.

RECLAMATIONS.

RECLAMATIONS.

Reclaiming land between the Dock Yard and the Apollo or Wellington Pier for the site of a new Post and Electric Telegraph Offices.

94. *Bombay.*—The Executive Engineer at the Presidency describes this work as follows:—

"This reclamation is 4½ acres in extent, and is intended to be the site of the new Post and Telegraph Offices. The sea wall face is 365 feet in length, with a re-entering basin 100′ × 50′, with a flight of stone steps for the express use of officers of rank and all officers on duty in uniform. About one-eighth of the walling, and two sevenths of the filling in, have been done by the Bombay Contract and Building Company."

RECLAMATIONS.

Expended in 1864-65 .....Rs. 72,749
Allotment for 1864-65..... ,, 82,997

Apollo Bay and Moody Bay.

95. These reclamations are under the charge of the Executive Engineer Presidency Division, from whose report the following extracts are taken.

Apollo Bay Reclamation.

96. The nature and extent of this work were explained in last year's Report:—

"The whole reclamation contains 31 acres. Government sanctioned the arrears of payment to [illegible] contractors at enhanced rates from the 1st May 1863; but owing to their being directed to make the deposit up to Rs. 50,000, the contractors had but little to receive, and shortly after broke down, and filed a petition of insolvency.

"About two-thirds of the walling, and two-fifths of the filling, have been completed, and a small quantity of the former, and [illegible]th of the latter, were done during the year."

Expended in 1864-65.....Rs. 74,458
Budget allotment 1864-65 ..... ,, 2,00,000

Moody Bay Reclamation.

"The reclamation of ten acres for a working depôt of materials in hand last year still remains incomplete, owing to the contractors having ceased to work. As there are legal difficulties in the way of getting rid of these contractors, owing to their claims extending to 12 years back, the matter has been for some time in the hands of the Government Solicitor."

Expended in 1864-65..... Rs. 57,548
Budget allotment 1864-65 .. ,, 6,00,000

MUNICIPAL.

MUNICIPAL.

Forest Roads.

98. The Executive Engineer states—"The road from the Central Station to Worlee is 7,411 feet in length, and that from the Station to Mahaluxmee is 5,598 feet in length. The earthworks were first thrown up to an average of 3½ feet in height, sufficient to clear the floods, and an extra 3½ feet have been added at the expense of the Municipality (Government advancing the funds), in order to bring the surface up to two feet below extreme highwater mark; all the metalling and kerbing have been supplied ready to lay during the ensuing monsoon."

Expended in 1864-65..... Rs. 3,77,255
Allotment in Rampart Removal Committee's Budget 1864-65..... Rs. 1,83,938
Further grant ..... ,, 1,97,396
——— 3,81,034

MARINE.

MARINE.

Harbour Improvements.

Vingorla Bunder.

98A. *Belgaum.*—The Vingorla Bunder is in a very exposed position. The present work provides for a small breakwater to prevent the sea wall and landing steps at the head of the bunder being breached. The steps, which were carried away during the monsoon of 1863, have been reconstructed in a substantial manner, and a mass of heavy stone thrown in to form the protection required. There will probably be an excess of about 20 per cent. over the sanctioned amount for this work.

Sanctioned from Port Funds.... Rs. 8,880
Expenditure during 1864-65 .... „ 7,882

Carwar Light-house.

99. *Canara.*—The cornice, whose profile is a simple ovalo, (more properly Ajma Ruta, as it is a double curve,) is 3 feet high, and exterior diameter 19'4". It has been prepared in two courses of eighteen inches of massive granite, the bed joints and surface of exterior profile being truly chisel-dressed.

The stones average over a ton in weight, and have lewis holes cut ready for hoisting when the season opens.

Wharf Wall.

Total length of Wharf Wall, of heavy block in course masonry, with coping set in chunam, as now completed, is 845 feet, as compared with 580 of last year's report.

Details—145 portion of Wharf Wall in Beitkul Cove.
100 width of Pier or landing stage.
300 portion of wall continuing towards Aliguddy.

845

Wharf Road.

100. The level area in rear of this Wharf Wall is in round numbers 3 acres, and between the Wharf Wall proper and the Engineer's storeyard, the area reclaimed equals another 3 acres.

101. The Wharf Road may be divided into sections:—

(1.) 508' from end of Wharf Wall to site of old Manchester Cotton Company's Pier, 100 feet wide throughout.

(2.) 615' dry stone Sea Wall, built in a curve, filled in with mud materials dredged from the Cove, with a layer of moorum on top. Average width 30 feet.

(3.) 614' road over Aliguddy Flat, 100' wide.

(4.) 582' dry stone Sea Wall as above. Road 100' wide up to Port Officer's office.

(5.) 931' thence to Koney Bridge. Road 100' wide.

102. Five pucka masonry slab drains have been put through the road to carry off the surface-drainage from the hill side, which is considerable.

MARINE.

Allotments for 1864-65 .... Rs. 2,00,000
Additional grant ..... „ 50,000 } Rs. 2,50,000
Expenditure 1864-65 .... „ 2,48,338

Pier at Rewas. Local Funds.

103. The unexpended balance is very large, but this is not the fault of the contractor, but is owing to the necessity of altering the design for the sheathing of the piles, which postponed the commencement of the pile-driving, or in fact any of the wood-work of the Pier itself.

The money which has been expended has been sufficient to complete nearly 1¾ miles out of the 2½ miles of earthwork which crosses the swamp between the high ground and the Pier.

No masonry has been commenced yet. This work will scarcely be finished in another year.

Allotment for 1864-65 .....Rs. 80,000
Expenditure during 1864-65 .... „ 16,519

Bunder at Kurranja. Local Funds.

A length of about 240 feet of the bunder is more or less finished, the outer wall on the east being slightly in advance of the other or western wall.

The filling in with quarry rubble and the cut-stone paving have kept pace with the outer walls.

The whole work is about one-third part completed, and, should there be no unforeseen difficulties next year, the work should be nearly, if not quite, completed before the monsoon of 1866.

Allotment for 1864-65 ..... Rs. 89,465
Expenditure during 1864-65 .... „ 28,457

Lighthouse on the Island of Perim (near Gogo), in the Gulf of Cambay. Bombay Port Fund.

104. *Ahmedabad.*—This work was commenced in February 1864, and completed in March 1865. A lantern of a superior description was received from England, and set up according to the directions given; it was found necessary to submit a supplementary estimate, amounting to Rs. 2,859, in October last, the rates in the original estimate having been found not high enough.

Amount of sanction ..... Rs. 2,918
Supplementary ..... „ 2,859
Total Rs. 5,777
Expenditure in 1864-65 ..... „ 2,715

Kurrachee Harbour.

105. *Sind.*—The Napier Mole Bridge was finished, and opened for traffic on the 30th September last: the original mole to the west of the bridge has not yet been removed. The Acting Superintendent writes—"It appears probable that no further increase could be made to the force of the existing scour, without very seriously impeding the navigation of the entrance channel, and the question as to whether the portion of the

MARINE.

Mole to the west of the Napier Mole Bridge is to be removed at present has consequently been referred for orders.

106. *Native Jetty.*—A length of 300 feet of the south wall had been thrown open to the public, and a further length of 500 feet was almost ready for use. The foundations had been got in for a length of 1,061 feet, leaving only 336 feet to be done.

107. *New Channel.*—The excavation was carried on throughout the year by hand labour on the east of the Mole, and by dredging on the west side.

108. *Chinnee Creek Stoppage.*—This work was suspended in January 1864, at the suggestion of Mr. Parkes.

109. *East Pier.*—An extension of the Groin has been carried out by order of Government; the work had reached a length of 1,280 feet at the close of the year, but some stone had been laid down to the full length, 1,500 feet.

110. The Acting Superintendent reports a considerable lengthening of the Bar.

AGRICULTURAL.

III. AGRICULTURAL.

110A. *Sukkur and Shahdadpoor Canal.*—The earth-work in the deepest portion, the first 12 miles, has been proceeded with, and Rupees 1,16,178 expended during the year; a length of 32 miles has been staked out.

111. *Mitrow Canal.*—This canal has been opened out to the 74th mile, and water was admitted to the 70th mile. During the past season the work of excavation has been confined to widening and completing the opened portion. A new branch to Samara has also been commenced from the 57th mile, and two old branch lines, formerly supplied from an inundation canal, have been put into thorough repair. Two masonry regulating dams at the 30th and 45th miles, and 7 road bridges have been completed. Several masonry heads to distributing channels will be ready for use this season.

112. *Thurr Canal.*—This work has been excavated at half its size as far as the Oomercote branch, which has been completed; a considerable amount of work has been done on the other half. The head works and weir have been completed.

113. *Cuts in the bed of the Narra.*—There was some delay in carrying out this work, owing to a reduction of the grant, but a cut 30 feet wide will, it is expected, be made through all the obstructions in time to admit water for the kurreef crop.

Employment of Convicts.

Much valuable assistance has been given to the works under the Executive Engineer Mitrow Canal by employing convicts under the control of the Political Superintendent. Labour has

AGRICULTURAL.

been so scarce in these districts, that, had not such aid been afforded, the progress would have been much impeded.

114. *The Foolalee Improvements*, for which a small balance remains, Rs. 9,929, have been proceeded with by altering a bad portion near the Meance Monument. The *Aliwah*, which work was postponed last year, has been also improved, and will afford an escape to the Goonee into the Pooran.

115. Some extensive improvements have been carried out during the season in the canals of the Hydrabad Collectorate; and canals aggregating 324 miles in length have been levelled and surveyed in that district alone.

Mallao Tank at Oomereith.

116. *Kaira.*—Rs. 3,000 sanctioned in April for deepening the Mallao Tank at Oomereith from the grant made by Government for famine works in the Collectorate. Owing to work being commenced so late in the year, only Rs. 888 has been spent.

Improving the Tank at Koregaum, in the Barsee Talooka.

117. *Sholapoor.*—This work could not be commenced till after the rains of 1864, since which time it has been vigorously carried on, and will be completed by the 15th June 1865. The work which had to be executed consisted of removing the inner half of the bund to a depth of 30 feet, and refilling the same with good earth to prevent the leakage which rendered this fine tank useless.

Allotment 1864-65	Rs.	11,821
Expenditure 1864-65	„	8,022

Muddhuck Tank, Sluice, and Canal

118. *Dharwar.*—Has made some progress, but attention has been chiefly directed in this season to improving and securing what had already been done. Over 5 miles of the canal on the right (south-east) bank of the river have been completed, and the people are using the water for irrigation.

Allotment	Rs.	12,000
Expenditure	„	7,992

Khandeish Collectorate.

119A. *Girna Works.*—The progress made with these works has not been so rapid as was expected, in consequence of the dilatoriness of the contractors. When the works were commenced during the previous year, the contractors were allowed advances, a system which has since been prohibited. The consequence of this has been that the contractors' work almost ceased, and during the latter part of the year nearly the whole of the work has been done departmentally, and the progress has been satisfactory. There is now a large body of workmen employed.

During the year the masonry weir, 1,550 feet in length, across the Girna, has been completed to its full height, and has borne the monsoon floods without any injury whatever. The

AGRICULTURAL.

head works of the two canals have also been completed, with the exception of the gates and lifting apparatus for them. The Left Bank Canal has had its earthworks nearly completed for 10 miles, and the masonry aqueducts, 8 in number, have been so far completed, that they will be ready for the admission of the water in September next.

Estimated amount	Rs.	6,13,331
Allotment for the year 1864-65..	„	1,25,000
Expenditure.	„	67,889

120B. *Panjur Works.*—The progress made with this project was likewise not so rapid as was anticipated, the cause of delay being the same as on the Girna. The two canals, 8 and 4 miles in length respectively, are now rapidly approaching completion by departmental work, and will both be finished by the end of June next.

Estimated amount	Rs.	50,512
Allotment for the year 1864-65	„	10,512
Expenditure	„	26,704

REPAIRS AND RENEWALS.

121C. Various repairs and renewals have been effected to the masonry and earthworks of existing irrigation works. The amount expended has been Rs. 11,781

Some progress has been made with surveys for storage lakes on the Panjur and Girna Rivers, which are necessary to admit of any further extension of irrigation.

ORIGINAL WORKS.

Sattara Collectorate.

122D. *Kristna Works.*—At the conclusion of the previous year the weir, 2,000 feet long, and 20 feet high, across the Kristna, had been brought up to about 4 feet above the low-water level, and the wing walls had been commenced, as well as the excavation in the first two miles of the canal, which is to be 45 miles in length altogether. During the present year the Weir has been raised to 14 feet above low-water level, or within 6 feet of its full height. The wing walls have been brought up to an average of 24 feet, and have now only 10 feet to be added to them. The canal has been excavated for a distance of 8 miles, and of the aqueducts, 7 in number, one is complete, and the others have been advanced as far as they can be till the monsoon floods have passed off, when the arching and finishing will be undertaken. The progress made with the works has been satisfactory.

Estimated amount	Rs.	5,09,988
Allotment for the year 1864-65.....	„	1,25,000
Expenditure.....	„	1,23,837

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123. *Rewaree Project.*—This is a small work, the irrigating channel being only 4 miles in length. It was commenced last year, and has been completed this year. Though small in extent, this work is a very valuable one; its source of supply being a perennial stream which never fails. Some delay occurred in commencing irrigation from the sinking of two high embankments, but since these were repaired, the flow of water has been uninterrupted, and the Ryots have much confidence in the works and are eagerly using the water.

Estimated amount	Rs.	39,834
Allotment for the year 1864-65 .	„	18,379
Expenditure	„	17,901

Ahmednuggur Collectorate.

124. In the Ahmednuggur district operations have been confined to the repairs of existing small irrigation works at a cost of Rs. 58,83, and the maturing of new projects. The Lakh project on the Pruwara has been matured. It is estimated to cost Rs. 2,11,278, and is a very promising one. A small project on the Kadwah has been nearly completed, and trial levels have been taken on the Godavery itself, where there is a wide field for irrigation works on a large scale.

Sholapoor Collectorate.

125. The large Tank project at Ekrook near Sholapoor has been matured. The estimated cost is Rs. 7,76,275.

Poona Collectorate.

126. Some work was done towards restoring the Kassoordee Tank, but want of funds caused a stoppage, and the tank cannot now be completed till after the monsoon.

Estimated amount	Rs.	17,528
Allotment for the year 1864-65	„	7,000
Expenditure	„	6,505

127. Considerable progress has been made towards maturing a project for a storage lake on the River Moota, and a canal about 90 miles in length, which is to supply both the city and cantonment of Poona with water, as well as to irrigate the right side of the valley between Poona and Indapoor, where the rain fall is extremely precarious. This project, with the addition of a small canal on the left bank, may also supply Kirkee with water. The whole will be matured very shortly, and may be commenced in October next if sanction is accorded. The works to supply Poona and Kirkee with water may be executed in one and a half year.

128. *Belgaum, Kulladgkee, and Dharwar.*—It has been impossible to attempt any new irrigation works in these collectorates from want of establishment.

COMMUNICATIONS.

COMMUNICATIONS.

ROADS.

Alterations to the Road between Poona and Kirkee.

129. *Poona and Kirkee.*—This road is to be widened from 26 to 42 feet between the Collector's Office in Poona and the Kirkee Railway Station.

Allotment 1864-65 ..... Rs. 15,017
Amount expended to 30th April 1865. „ 3,529

Road from Ganeshpore to the Railway Station Gate, Poona, including purchasing land.

130. This road is 2,400 feet in length, and is finished, with the exception of consolidating the metal.

Allotment 1864-65..... Rs. 1,882
Additional allotment Rs. 6,000 / Do. do. „ 8,700 } „ 14,700
Amount expended to 30th April 1865. „ 11,260

Improving and Metalling Poona and Ahmednuggur Road.

131. *Ahmednuggur.*—One considerable deviation, extending 2 m. 55 yds., has been formed, by which a steep portion of the old line will be altogether superseded. The greatest inclination on the new roadway is 1 in 20 ft., whilst the gradient on the old line was as heavy as 1 in 11 ft. The improvements, &c. executed from Local Funds.

Allotment ..... Rs. 9,423
Expenditure 1864-65..... „ 9,285

Improving and Metalling Tanna-poor Ghaut and Pyton Road.

132. Metal has been prepared and collected for 15¼ miles of roadway, and is in readiness to be spread before the opening of the monsoon. The work has chiefly been done by contract. Improvements to this road have been done from Local Funds.

Allotment ..... Rs. 20,742
Expenditure 1864-65 ..... „ 20,575

Masonry Drains and increasing depth of Moorum on Ahmednuggur and Mahigaum Road.

133. 34 masonry drains of various dimensions have been built along the section of the line between Singwale and Babulsar, and the moorum layer on the same portion has been increased by a depth of 6 inches. This work has been executed from Local Funds.

Allotment ..... Rs. 3,799
Expenditure 1864-65..... „ 3,791

Road from Ahmednuggur to Dhond.

134. The work has been completed to the limit of the sanctioned amount; 85 masonry drains have been built, and a length of 47 miles of roadway has been completed with moorum. This work has been constructed from Local Funds.

Allotment ..... Rs. 1,847
Expenditure 1864-65 ..... „ 3,617

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Constructing Sirpur and Pargaum Road

135. This work was undertaken by an European contractor; a large protion of the embanked roadway has been formed, but the work is still incomplete, and has been under suspension during the greater part of the year, owing to some misunderstanding with the contractor. The whole line measures 16 miles, 7 furlongs, 166 yards.

This work is executed from Local Funds.

Allotment 1864-65 ..... Rs. 34,361
Amount expended 1864-65 .. „ 37,008

Road over Sindeh Pulse Ghaut between Sinnar and Nassick.

136. *Nassick.*—The road is completed with bridges, drains, and metal.

Allotment ..... Rs. 13,729
Expenditure 1864-65 ..... „ 13,594

Road Yeola to Mumar Railway Station

137. During the year 5½ miles of roadway were completed. There are 10 culverts and 6 drains, 1 skew bridge of 3 arches of 25 feet span, and a bridge of 3 arches of 35 feet span.

Allotment ..... Rs. 29,657
Expenditure 1864-65 ..... „ 15,767

Nandoor and Kolher Road.

138. This road, 30 miles in length, has been completed in earthworks and covering material, but the culverts and drains are not yet complete.

Debitable to Local Funds.

Allotment ..... Rs. 33,038
Expenditure 1864-65 ..... „ 10,832.

Tramway, Barsee to Barsee Road Station.

139. *Sholapoor.*—This work may be said to be nine-tenths completed, as much having been done as it is advisable to accomplish for the present, until some definite arrangement has been arrived at, whether it is to be used as an ordinary road or tramroad. Rs. 30,000 was transferred from the Budget allotment for this work in 1864-65 to another work, and on account of want of funds, a small portion of rock cutting remained to be completed at the close of the past year. The road is 21 miles in length, of which the earthwork and mooruming of 18 miles has been completed entirely, and the remainder partially so.

Allotment 1864-65 ..... Rs. 30,915
Expenditure 1864-65 .. .. „ 30,887

Road from Neera Bridge via Soupa and Kheergaum to Sirsur.

140. *Poona District.*—Length about 56 miles. This road, which is moorumed, has been finished. There are altogether 110 slab-drains of sizes, of which 18 have been built

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during the year, and about a mile of earthwork of the road completed.

Allotment in the Budget 1864-65 .. Rs. 3,270
Expenditure in 1864-65 ..... „ 3,270

Debitable to Local Funds.

Road from Poona *viâ* Katruz Ghaut to Sherwul on Poona to Madras Line of Road.

141. Length 26·4 miles. From Poona to the foot of the Katruz Ghaut, 6 miles, entirely finished. The Ghaut portion, 3¼ miles, including a tunnel 880 feet in length, has been completed, with the exception of the parapets and a small portion of cutting near the tunnel entrances, which are also to be built. The road from the [illegible] side of the Ghaut to the Neera Bridge, 17 miles, is finished, excepting the Kapoorwal Bridge, and parapet walls to some of the bridges, &c. The masonry works on this road consist of 10 bridges, aggregating 460 feet in waterway, 25 arched culverts, and 139 slab-drains of sizes; of this 25 arches of bridges and culverts, varying from 5 to 20 feet span, and 105 drains, have been built during the year. Earthworks of one mile of road on the Ghaut, and 6½ miles on the portion between Yelloo and Sherwul, have been completed during 1864-65; the road has been opened for light traffic.

Allotment in the Budget ..... Rs. 75,000
Sanctioned by Government Resolution No. 2,084 of 1864 ..... „ 50,000
Allotment sanctioned by Government Resolution No. 2477 .... „ 30,000

Total allotments .. Rs. 1,55,000
Expenditure 1864-65 ..... „ 1,55,000

Road from Sherwul to Sattara on Poona to Madras Line of Road, 40¾ miles.

142. *Sattara.*—The bridge over the Neera River at Sherwul, 11—40 feet arches, has been completed from the level of the roadway upwards; the amount expended on this bridge in the year having been Rs. 16,415, of which amount Rs. 9,173 alone was the original Budget allotment, Rs. 7,388 having been a supplementary allotment.

143. On the roadway and drains and bridges Rupees 1,36,727 have been expended, and the following works have been executed:—

144. Parapets to bridges across the Kristna and Yenna Rivers. On bridge of one arch 40 feet span completed from level of springing line of arch. A few small drains constructed. Some heavy embankments in progress at the close of 1863-64 completed. Two miles of road coated with moorum. Parapets and copings to most of the small bridges and drains on the road constructed. Milkbush on steep embankments planted. The road is now complete from Sherwul to Sattara.

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145. The expenditure on these works, exclusive of the bridge across the Neera at Sherwul, which was separately sanctioned, was Rs. 1,36,727. The Budget allotment was Rs. 95,000. There was a supplementary allotment of Rs. 42,784.

Road from Sattara to Warna River, Madras Line.

146. Length 64 miles. On this section the following works have been executed during the year:—

147. The bridges, as below, have been completed from the extrados of the arches upwards—

148. Bridge over the Oormoorce river, three 60 feet elliptical arches of 15 feet rise, with two [illegible]d arches of 15 feet span, 9 miles south of Sattara; and bridge over the Yarlee River, 20 miles south of Sattara, three 40 feet spans. Bridge over the Maun Nulla at Watar three 50 feet elliptical arches. 26 small bridges and drains, with an aggregate of 176½ Rg. feet of waterway, and 57 other drains with parapets, &c. completed. The Budget allotment for this work was 45,000; an additional supplementary grant of Rs. 24,721 was made on one item of the work, and 10,000 withdrawn on another, thus leaving the total final allotment for the year Rs. 59,721. Rs. 69,243 have however been spent on this road.

Bridge over the Quoina River at Kurrar, Madras Line.

149. This bridge is on the Sattara-Belgaum Road, 20 miles south of Sattara. Seven 80 feet half circular arches, with two 40 feet half circular land arches. The bridge, from the height and span of its arches alone, is an important work, and the operations of the past season have shown that unusual and very unexpected difficulties will have to be overcome in getting in 5 of the 10 foundations. The foundations of two abutments, one abutment pier, and two piers have been got in without any difficulty, being dry, and the superstructure on these five foundations is approaching the springing line. The other five foundations will however give great trouble; it has been ascertained that the underlying rock is very much lower (40 feet to 16 feet at least) than was supposed, and in two of the foundations it will be nearly 30 feet under summer water level.

Poona and Madras Road.

150. *Belgaum.*—Bridges over large nullahs in progress last year, and described in detail in the Concise Report for 1863-64, paragraph 14, have been completed. Expenditure in 1864-65 Rs. 8,591.

Bridge over Ghutpurba River, Madras Line.

151. This bridge, (seven 45 feet arches span,) over the Ghutpurba River at Soolgutee, has been completed and opened for traffic. As reported, a portion of the north approach was carried away last monsoon by the overflowings of the river and the Mungotee Nullah. A design for bridging the hollow

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and improving the gradient of this approach has been sanctioned for execution in 1864-65. Expenditure on Sootgutee Bridge in 1864-65 Rs. 4,188.

Bridge over the Hurrunkashee River, Madras Line.

152. This bridge, seven 45 feet arches, which was completed up to springing last year, has been arched over, and will be ready for traffic by the monsoon.

Expenditure in 1864-65 ..... Rs. 20,903

Bridge over Yedgunga River, Madras Line.

153. This bridge, seven 45 feet arches, which was nearly complete last year, has been finished and opened for traffic.

Expenditure in 1864-65 ..... Rs. 23,228

Bridge over Doodgunga River, Madras Line.

154. As anticipated, the foundations of the north abutment and wings of this bridge gave great trouble. The work had to be abandoned and resumed after the monsoon. All difficulty is now at an end, and the arches have been turned. The bridge will be available for traffic by the monsoon.

Expenditure in 1864-65 ..... Rs. 22,629

Approaches to the Doodgunga River, Madras Line.

155. The embankments are complete, and the surfacing is in progress.

Expenditure during 1864-65 .... Rs. 2,860

Approaches to the Yedgunga and Hurrunkashee Bridges, Madras Line.

Considerable progress has been made with these works, which will be completed during the monsoon.

The estimated cost is	Rs.	17,687
The amount allowed	„	10,687
The expenditure during 1864-65..	„	9,717

Belgaum and Dharwar, Madras Line.

156. The work of raising and mooruming certain low portions of this section, 10 miles, has been completed, and the expenditure during 1864-65 has been Rs. 8,040.

Yemmi (Dharwar) and Bankapoor Road, Madras Line.

157. *Dharwar.*—This section has been widened and improved, and in many places nearly remade. The mooruming is complete in all except a few places, which were left till the rain falls. Most of the small drains have been built, and it is expected that the road will be finished by the end of the coming rains. The work done is fairly represented by the expenditure.

Allotment	Rs.	15,000
Expenditure	„	14,994

Bankapore and Hurryhur Road, Madras Line.

158. All along this line the works have made most satisfactory progress with the aid of an European contractor. About 12 miles, from Ranebednore to Hurryhur, of the road

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is complete in all respects. The whole of the earthwork of all the line is complete, also the masonry of all the large bridges, except that over the Wurda, and the smaller drains over about 20 miles of road in progress; the rest are complete.

159. The Wurda Bridge, except the southern abutment, may be considered as up to springing. It is expected to open 24 miles of the road to traffic after the approaching monsoon. The sum sanctioned for the year's expenditure, through the energetic way in which the contractors worked, has been somewhat exceeded, but work to the value has been executed. The Wurda Bridge will be the latest work on the line, and that will be complete by the end of the next year.

Allotment for roads			Rs. 63,097
Additional grant for road..	Rs.	10,000	1,34,811
Do. for bridges	„	61,801	
Expenditure			Rs. 1,34,038

Hoobbe and Amigherry Road.

160. From want of funds for this work the road remains incomplete in some respects. The earthworks and masonry are quite finished, and of the mooruming 13 miles are all but complete, 7 miles more than three-fourths complete, and the remainder one-half so. These proportions refer to quantities of material, but the whole road has received at least one coating of moorum or gravel.

Allotment	Rs.	29,000
Expenditure	„	28,300

Amugherry and Guddag Road.

161. Since last season the Soal Nulla bridge, 7 arches of 20 feet span, has been completed to the road level. The piers and abutments of the three other large bridges have been brought up to springing level. The smaller drains over about 8 miles of the road have been built, and, had funds not run short, the Executive Engineer would have been able to open 10 miles of the road to traffic; as it is, about 8 miles can be used by carts. The work done is fairly represented by the expenditure.

Allotment for road ..	Rs.	6,688	Rs. 19,578
„ for bridges.	„	9,890	
Additional grant . ..	„	3,000	
Expenditure			„ 19,241

Koondaree Ghaut Road.

162. *Sattara.*—The work executed during the year has consisted of metalling the Ghaut 9 miles in length, and finishing parapet and retaining walls and other small items of work.

Allotment	Rs.	16,800
Expenditure.....	„	15,274

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Road from Koombharlee Ghaut to Chiploon.

163. This road is from the western foot of the Koombharlee Ghaut to Chiploon, 12 miles. In the estimate for this road is included a Wharf Wall at Gowulcote, the terminus nearest the sea. During the year 21 lacs of cubic feet of filling have been executed at the Gowulcote Wharf, and the Wharf Wall has been brought to its full height, except in a few spots where the foundations are insecure.

The following bridges have also been built on the road up to level of roadway.

1	Bridge	1 opening of	45 feet span.
1	ditto	3 ditto of	30 do.
1	ditto	3 ditto of	25 do.
1	ditto	1 ditto of	15 do.
2	ditto	2 ditto of	10 do.

One and a half mile of new road has been made. This work was suspended during last year. The state of the road at present is as follows:—All the large bridges are passable, *i. e.* they all have at least their arches turned, and 8 miles of roadway are complete. There remain only the culverts and small drains to build. Rs. 43,261 have been spent during the year, the Budget allotment having been Rs. 25,000 with a supplementary grant of ..... Rs. 16,000

Total allotment ..... „ 42,000

164. Road from near Mhar to the foot of the Warrunda Ghaut, 8 miles. On this road the following bridges and drains have been built:—

1	Bridge of	5	25	feet arches	up to extrados.
1	do.	4	20	do.	up to road level.
1	do.	3	15	do.	up to extrados.
1	do.	2	10	do.	up to do.

And 19 drains of different sizes, with an aggregate of 102½ Rg. feet waterway; 3,644 Rg. feet of embankment has also been made, and 4 miles of other embankment moorumed, and 453 Rg. feet of retaining wall of dry stone built. The largest work on this road is the bridge over the Savitru River, seven 40 feet arches, to which little has been done this year. It is nearly built up to springing line. This gap, and a small nullah near the foot of the Ghaut, and a few small drains only remain to hinder complete communication with the foot of the Warrunda Ghaut.

Budget allotment.....	Rs.	16,991	
Supplementary do	„	15,795	32,789
	Rs.		20,452
The expenditure was			
	Rs.		12,337

of the allotment therefore remained unexpended. This arose from difficulty in procuring contractors.

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165. Road from Belgaum, *viâ* the Parpoolee Ghaut, to Vingorla, 77½ miles. This work, which may now be viewed as the most important one in this collectorate, has been greatly retarded for want of funds.

Belgaum to the West Coast of Vingorla.

166. Arrangements were made for a good season's work, but these had to be broken up on the reduced allotment, which is given below, being published.

Sanctioned allotment	Rs.	75,000
Additional funds granted.....	„	4,000
Expenditure 1864-65	„	80,730

167. The progress on this line of road is, in proportion to the funds, rather limited. The money available was laid out to the best advantage, by completing bridges and drains already commenced, and with a view to opening the line as soon as possible.

168. The following items of work have been executed. The Ghaut drainage has been entirely completed.

Parpoolee Ghaut, 11 miles.

169. The two bridges of 30 feet span each, near Konoor, and the bridge of 24 feet span at Hindgaum (described last year), have been completed, also the 15 culverts or drains under 10 feet of waterway. The two bridges of 15 feet span each at Seergaum and Bachey have been raised to springing. Besides the above, 17 culverts or drains, varying in size and number of openings, with retaining walls, where found necessary, have been constructed.

Belgaum approach, 42 miles.

170. The road formation is complete, with the exception of the removal of a few embedded boulders in the surface and at the sides here and there.

171. A Local Fund work. The line has been cleared and opened 26½ miles.

Road Hurrechur to Gokak.

Allotment	Rs.	7,197
Expenditure 1864-65	„	7,197

172. This road, 4½ miles, found a place in the Local Fund Budget, but it was not known until the 14th December 1864, whether funds would be forthcoming or not during 1864-65. Hence the large saving on the allotment. Some time was moreover lost in obtaining contractors for the work after the sanction was granted. It is now making rapid progress.

Road Sankonal to Munera.

Allotment	Rs.	13,968
Expenditure 1864-65.....	„	759

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Approach to Carwar and Arbyle Ghaut.

173. *Canara.*—The chief expenditure has been on the new portion of this road, *i. e.*, 18 miles 1,053½ yards laid out by the Bombay Government from Carwar to a point (called Ankola Junction) near Ankola, on the Madras Arbyle Ankola line of communication.

174. The result may be described thus—The Herwara Ghaut, 1 mile and 1,033 yards long, taken out to full width. Aorsa Ghaut, 1 mile and 295 yards long, has been similarly improved.

All the unbridged streams up to the 13th mile from Carwar made passable generally by timber superstructure resting on laterite abutments. The Moodgay and Aorsa Nullas, at the foot of the Herwada and Aorsa Ghaut respectively, have been bridged.

Fourteen miles of road have been metalled with granite and consolidated.

In the bed of the Hundy Muddy Nullah foundations have been sunk and filled in, also piers commenced for a bridge of 7 bays of 20 feet span, crossed by timber superstructure, the abutments and piers being of laterite masonry.

In the neighbourhood of Soonksal and Yellapore, the road passing through the bamboo jungle has been widened to 24 feet, and where anything approaching to moorum was obtained, the surface has been improved.

Sanctioned amounts.... Rs. 50,000, 60,000, and 15,000
Expended..... Rs. 1,25,000

Approach to Canara Ghaut.

175. The work has made but little progress, owing to the failure of the contractor, and difficulty of procuring labour. It is now being carried out departmentally. The work executed during the year has consisted principally in earthworks on the ghaut itself, which is 17 miles in length.

Allotment 1864-65 ..... Rs. 2,00,000
Expenditure 1864-65..... „ 44,678

Bridge over Nullah on Poona and Sholapoor Road.

176. *Poona District.*—This bridge, which consists of 14 arches, 25 feet span each, has been finished up to the springing of arches, 17,000 cubic feet masonry work executed during the year. Work stopped for want of funds.

Allotment in Budget 1864-65 .... Rs. 6,000
Expenditure in 1864-65..... „ 6,000

Bridge over Nullah on Poona and Nuggur Road.

177. This bridge, which is one of a single arch of 50 feet span, has been completed. The whole of the work above springing has been executed during the year.

Allotment in the Budget 1864-65 Rs. 2,784
Expended in 1864-65 ..... „ 2,784
Debitable to Local Funds.

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Bridge over Goar River at Seroor, on Poona and Nuggur Road.

178. The work was in progress till the monsoon of 1864, when, owing to the unsatisfactory nature of the materials employed by the European contractor in building the bridge, Government decided that the work should be suspended; the piers of the bridge have been carried up to nearly one-half their total height.

Allotment ..... Rs. 24,650
Expenditure 1864-65 ..... „ 14,203
Saving on the above transferred to other works.

Waghoond Bridge on Poona and Ahmednuggur Road.

179. This bridge has been completed. It consists of 9 arches of 30 feet span, with an additional culvert 20 feet span in one of the approaches, to carry off the floodwater of a nullah. The masonry work was performed by contract for Rs. 9,360, but owing to the advanced price of labour, &c. after the agreement was made, Government sanctioned an additional sum of Rs. 2,035. This work has been constructed from Local Funds.

Allotment 1864-65 ..... Rs. 4,494
Additional grant { Rs. 1,324 / „ 2,035 } ..... „ 3,359
Expended 1864-65 ..... „ 7,784

Sewna Bridge on Barsee Tramroad.

180. *Sholapoor.*—The progress made on this work during the past year has, I regret to report, been very unfavourable, owing to the great difficulty experienced in excavating the foundations of abutments and piers which have extended to depths of 20 or 22 feet through sand and earth, containing water in such large quantities as to render its control very difficult. The work actually completed is represented by 2 abutments and 3 pier foundations excavated and filled in, both the former of which and one of the latter have also been raised to a height of 30 feet. To give an idea of the work which still remains, it should be stated that the design provides for a bridge of 11 arches of 40 feet span, standing upon piers about 35 feet above the bed. Rs. 30,000 were transferred to this work from the Barsee Tramroad; provision having originally only been made for it in the Budget of 1861-65 for Rs. 29,000

Allotment ..... Rs. 39,000
Additional allotment ..... „ 30,000
Expenditure 1864-65 ..... „ 68,990

Bridges over Nullahs on Barsee Tramroad.

181. The estimate provided for the construction of 10 ordinary sized bridges on the Barsee Tramroad; of these 8 had been completed up to the close of 1863-64, and since that time, during the past year, the remainder have likewise been finished.

Allotment ..... Rs. 2,231
Additional grant ..... „ 3,375
Rs. 5,606
Expenditure 1864-65..... „ 12,576

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Four Bridges on Dharwar and Goa Road.

182. Of these four bridges, that at Lingunmutt (40 feet span) is complete, except parapets; the work has been stopped pending a proposed increase of waterway.

At Arwudgee (50 feet span) the foundation of the land abutment has been got in with much difficulty, and the work has been brought up to springing line.

The Astolee bridge (3 of 50 feet) has had its three arches turned.

The Shanwarkope bridge (3 arches of 50 feet) has had the abutment foundations which were difficult, put in, and the piers have been brought up close to springing. The arching of this bridge will be done after the monsoon.

Allotment	Rs.	29,851
Expenditure	„	28,429

Debitable to Local Funds 1864-65.

Bridge on Poonah and Toka Road.

183. This bridge is not complete, owing to a delay on the part of the contractor.

Allotment	Rs.	8,275
Expenditure	„	5,377

Nagar Bridge.

184. This work is complete, and consists of 14 spans of timber girders. The piles of half the bridge were driven this season, and the girders and planking and approaches completed.

Allotment { Villagers	Rs.	12,162
Government	„	2,000
Expenditure	„	14,162

Accommodation for Travellers.

Poona District.—The Dhurrumsallas at Tullegaum, Kurkalla, and Lanowlee Railway Stations have only been commenced, as the order was received late in the season.

Allotment in the Budget 1864-65.	Rs.	6,000
Expenditure 1864-65	„	855

Debitable to Local Funds.

Ahmednuggur.—The Travellers' Bungalow at Dhond has been constructed by contract. It affords accommodation for three separate parties, and is situated at Dhond, where the road from Ahmednuggur meets the railway.

Allotment.....	Rs.	3,595
Expenditure 1864-65	„	3,287

New Roads on the Esplanade.

185. *Bombay.*—The roads on the Esplanade, and along the Western face of the town, have been completed as far as practicable at present, and the greater part handed over to the charge of the Municipality.

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The length of roads completed, metalled, and open to traffic, was 3 miles 5 furlongs and 88 yards.

The carriage way averages 66 feet in width, widening to 250 and 300 feet where the roads intersect.

The most important roads have foot paths, 27 feet wide, on each side.

Expended in 1864-65		Rs. 4,24,891
Allotment in Rampart Removal Committee's Budget 1864-65	Rs.	1,50,000
Further grant	„	2,97,400
		4,47,400

Metalling portions of the Bombay and Agra Road.

186. *Khandeish.*—The estimate for this work was framed in 1862. In 1863-64 Rupees 15,344 were spent in stacking metal. The sudden suspension of this work has left the road in an unsatisfactory state.

Road from Dhurumther to Kurjut.

187. *Northern Concan.*—The embankments and cuttings for a length of 8 miles have been completed, with the exception of two rock cuttings unfinished, and one heavy cutting in the town of Penn.

The bridges and drains, with the exception of the large Penn bridge and one smaller bridge of two 15 feet spans, have been erected. The Penn bridge has the piers and abutments finished, the centres set, and the arches partly turned. This bridge will be completed very shortly. The other bridge is brought up to the springing.

The road for one mile on each side of the Penn bridge is complete with kerbing and moorum surface.

Between Penn and Wawa, a distance of 2½ miles, the kerbing is set, and the moorum partly laid on. These 8 miles of road will be finished during the ensuing year, if funds are made available.

Allotments for 1864-65	Rs.	25,000
Expenditure during 1864-65 ..	„	25,000

Road from Dhoolia to Challisgaum.

188. *Khandeish.*—23 miles of roadway completed with banking; only 1 mile of road finished with ballast. Rupees 1,19,289 have been spent in 1864-65 in banking, ballasting, and constructing drains and bridges from 2 ft. to 45 span. A design for a bridge across the Girna at Mehoonbarrah is nearly ready.

Road from Nargaum to Beorhanpoor.

189. During 1864-65 nothing beyond the maintenance outlay caused by original faulty construction was incurred. From 1st November 1864 charge of the road was given to the Nimar Public Works Department.

Expended in 1864-65 ..... Rs. 17,648

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Road over the Kundaibaree Ghaut.

190. Very nearly completed. A toll has been established on the Ghaut, of which the main descent is opened to traffic. During 1864-65 the outlay has been Rupees 21,571, which, added to previous expenditure, brings the total to Rs. 69,868. Balance of the estimate to be spent in 1865-66 Rupees 4,754.

The following work has been done during the season :—

10	Barrel drains 3 ft. diameter 1 opening	completed.
1	„ „ 5 ft. „ „	
1	„ „ „ „ „	Very nearly completed.

3 bridges [illegible] 5, and 20 feet span of 1 arch each very nearly completed.

Improving the Khandeish Section of the Agra Road.

191. An estimate, amounting to Rupees 1,67,750, was sanctioned in 1863-64, out of which Rupees 29,325 were spent in 1863-64, and Rupees 32,999 in 1864-65. The suspension of this work will render the estimate valueless on operations being resumed. The road is rapidly deteriorating.

Portion of the Ahmedabad and Gogo Road between Gogo and Dhundooka

192. *Ahmedabad.*—During the past season metal was spread on the embankment from Vertej to Chumardee, a distance of 12 miles. Metal sufficient to cover another 2½ miles of road towards Wulla was also prepared, and will be put down this year; a coating of 3 inches of sand was also spread on the road from Chumardee to Panvee (16 miles), and from Burwalla to Rojeed (3 miles).

Embanking operations have been carried on between Mooldrai and Dhundooka, about 200,000 cubic yards of earth have been thrown up on the road between Bhimnath and Dhundooka; and the whole of the embankment will be completed about the end of July.

Ten masonry bridges have been completed between Wulla and Burwulla, and one between Burwulla and Dhundooka; in all 27 elliptical arches of 10 ft. span, 8 segmental arches of 20 ft. span, and 11 segmental and 7 elliptical arches of 30 ft. span, have been turned. Most of these bridges have been built of stone.

Three iron girder bridge piers of screw piles, bays of 30 ft. span, abutments and wing walls of masonry, have been in course of construction; one of these bridges of 9 30ft. bays has been entirely completed; two others of 9 and 17 bays respectively will be completed by the middle of June.

Their completion will open up the road to Bhimnath, a distance of 58 miles from Gogo, 10 and miles from Dhundooka. A large stone masonry bridge of 11 30 ft. segmental spans is in course of construction at Bhimnath. Should the monsoon

keep off until the end of June, the arches of this bridge will also be all turned, as 6 of them already have been.

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Much more work would have been done but for the unfortunate outbreak of cholera on the line, consequent on the Paulitana Pilgrimage in February last. For nearly one month the road was deserted by workpeople, and advantage of the extra sanction of 1½ lacs of Rupees in January last could not be fairly taken until the middle of March. A large body of labourers, over 4,000, was then collected between Polarpore and Dhundooka (11 miles). Cholera, however, broke out again amongst them at the end of April, and there will be much difficulty in getting them to return again. The iron bridges have been erected by Messrs. Forde and Preston; the work has been satisfactorily and quickly done.

Amount of sanction.....	Rs. 3,09,325
Spent in 1864-65.....	„ 3,03,899

Survey for Road between Ahmedabad and Puttun.

19. A portion of the Ahmedabad and Deesa Road has been taken in hand; this survey has been nearly completed. Plans and estimates will be submitted in due course.

Amount of sanction	Rs. 2,171
Expenditure in 1864-65	„ 652

Road from Mummar to Malligaum.

194. *Khandeish.*—This road has been completed, the work during the year having been as follows:—

6 bridges of spans varying from 15 to 30 ft. and arches 2 to 7 ft., have been completed, and the outlay has been Rupees 21,286. Owing to the great traffic which availed itself of the road bfeore it had consolidated, much damage has been done to the moorum coating: the traffic demands the earliest possible metalling of the line.

The revenue derived from the toll on this road is Rupees 12,000 a year, or 6·9 per cent. on the total primary outlay. This might be granted for maintenance.

Metalling Road from Mummar to Malligaum.

195. During 1864-65 but little has been done. The work was well in hand, and a gang of 1,000 stone-breakers employed, when orders were received for suspending work. A sum of Rupees 16,816 has been spent in 1864-65 in preparing material. The work has been allowed to be proceeded with in 1865-66.

Metalling Road from Kalhair to Wassind.

196. *Northern Concan.*—The entire road from Wassind to Kalhair, 22 miles, is now metalled, and the greater part of it rolled, &c. complete.

Local Funds.

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The remainder will be finished in a few months.

Allotment for 1864-65 ..... Rs. 49,426
Expenditure during 1864-65..... „ 45,453

Saving Rs. 3,973

There is a small unexpended balance, which will be spent during the monsoon in rolling, &c.

Road from Bassein to Manickpoor. Local Funds.

197. The work done during this year consists almost entirely of kerbing, pitching, or revetting and metalling. The drains (there are 1 ridges) are all built, the kerbing is set for a length of 5 miles, and the metalling laid on the road, though not rolled and consolidated, for the same 5 miles, viz. from Bassein to the Railway Station at Manickpoor. The stones for pitching are ready, and about ½ mile of pitching is finished, and the whole of the revetting with lime masonry, which protects the road, through the towns of Bassein and Papree, a distance of one mile, is done.

Allotment for 1864-65 ..... Rs. 41,133
Expenditure in 1864-65 ..... „ 18,913

Allotment for 1864-65 ..... Rs. 6,365
Expenditure 1864-65 ..... „ 5,216

Road through the town of Callian. Local Funds.

198. The above allotment was made to complete these roads, which were finished in 1863-64, with the exception of the metalling and rolling, and the bunder approach, about which there was a difficulty in taking up the necessary land, as it was a Mussulman burial ground.

The metalling, &c. has long since been finished, and the bunder approach is nearly so, and will be completed very shortly.

Road from Persick to Panwell. Local Funds.

199. During the past year the embankment has been carried on from Dysur to a point two miles beyond Tullorja, a distance of nearly six miles. A few small slab stone and brick lined drains near Dysur have been built, but the masonry work has been very much neglected, owing to the difficulty in procuring masons. The kerbing and moorum surface formation has been partly finished over the whole length from Cowsae to Dysur Para, about 4 mile.

This road is now available for traffic for 7 miles from Persick, and will be completed into Panwell in two years more, if funds are available.

Allotment for 1864-65 .....Rs. 50,000
Expenditure during 1864-65.. „ 27,589

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Road from Alibaugh to Poinar. Local Funds.

200. The greater part of the money has been expended on the ghaut road over the Karlee Khind, all the cuttings and embanking of which are nearly finished, with the exception of two heavy rock cuttings, which are in progress and fairly advanced. The embankments on the plain are nearly complete, except two miles on the Poinar side of the foot of ghaut, where the work is now in hand. There has not been much masonry work done, but the drains have been finished for a distance of about 2 miles from Alibaugh, and the kerbing and moorum formation laid for the same distance.

The road will, it is hoped, be finished in little more than one year.

Allotment for 1864-65 .....Rs. 50,000
Expenditure during 1864-65.... „ 42,310

Road from Chowk to Karjut Railway Station. Local Funds.

201. The money spent during the year has been chiefly used on the ghaut over the Bhisa Khind, and on masonry works on the road generally.

The Khind has been completed. One bridge of 20 feet span, and one of 15 feet span, have been constructed on different parts of the road, and two or three drains have been put in to complete the masonry work.

Two bridges and a quarter of a mile of kerbing and moorum surface remain to finish the road, which will be completed, it is believed, in about a month's time.

Allotment for 1864-65 ..... Rs. 24,668
Expenditure ..... „ 13,094

The unexpended balance is large, but the greater part of it is actual saving, the road being very nearly complete.

Allotment for 1864-65 ..... Rs. 48,582
Expenditure during 1864-65 .... „ 45,359

Road from Oorun to Panwell. Local Fund.

202. The money has been chiefly spent on the bridge near Dapoolee, and on laying the moorum and kunker on that part of the road between Belpada and Oorun; between which places (6 miles) all the earthwork and drains are finished; much heavy rock cutting remains still to be done between Belpada and Dapoolee, but the Executive Engineer hopes to see the whole distance passable before this monsoon.

Allotment for 1864-65..... Rs. 14,883
Expenditure during 1864-65..... „ 9,070

Road from Callian to Bhewndy. Local Funds.

203. This allotment is formed by two different grants—one the balance carried on from 1863-64, and the other a supplementary estimate for extra drains and pitching, which were found necessary for the safety and efficiency of the road.

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The first grant has been nearly all expended in moorum formation and kerbing, a balance still being in hand to complete some patching, rolling, &c. There remain some drains and pitching out of the second grant, the sanction for which came late in the working season. The work is now well in hand, and will be finished in a few months.

Road from Nagothan to Dhurumtur. Local Funds.

Allotment for 1864-65 ..... Rs. 80,000
Expenditure during 1864-65..... ,, 47,394

204. The unexpended balance of allotment in this case is large, but sanction for the commencement of the work was conveyed so late in the season, that though the contractor worked very well, and engaged as many men as possible, he could not expend the entire allotment.

The Executive Officer has devoted the whole allotment to the earthwork, so as to allow of settlement taking place during the coming monsoon.

The embankment is complete, with the exception of a few small gaps in places for a distance of 11 miles, commencing from the Dhurumtur end of the road. No masonry has been commenced this year; the material has been collected in some places ready for next year's work.

Road from Verar Railway Station to Bolinj. Local Funds.

205. Sanction accorded late in the year.

The embankments between Verar Railway Station and the outskirts of the village of Bolinj, a distance of more than a mile, have been thrown up, and the foundations of bridge No. 1 have been prepared and laid. This masonry work being tidal, and attended with great difficulty, owing to the yielding nature of the mud, has occupied much time and labour. The work is now progressing favourably, and next season's work will, it is hoped, open out the traffic from Agasee throughout.

Allotment for 1864-65 ..... Rs. 10,000
Expenditure during 1864-65.. ,, 2,704

Road from Malsir to Nowly Railway Station. Local Funds.

206. Provision for 5,000 Rupees was made in the Budget, but a sum of Rupees 5-8-6 alone has been spent on survey expenses, as the Superintending Engineer wishes some alterations made in the line, and owing to the lateness of the season when the sanction was conveyed, the Executive Engineer has not had time to revise the surveys and plans.

Road from Mogra Bunder to Caranja. Local Funds.

Allotment for 1864-65 ..... Rs. 1,000
Expenditure during 1864-65 .. ,, 1,273

207. This money has all been expended on improvements to the road. Five drains have been put in, and the gradients of the road improved in several places. The kerbing through

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the village of Karanja, and where it was particularly required, has been renewed; a moorum surface formed over the road generally. The work was completed before last monsoon.

Allotment for 1864-56 ..... Rs. 6,000

Road from Alibaugh to Reodunda. Local Funds.

208. Of this sum nothing has, it is to be regretted, been spent. The Executive Engineer understood that the Sub-Collector would undertake the work, but the latter afterwards required some sketch designs, which the Executive Engineer's Overseer at Alibaugh was too busy to prepare, so the work must stand over till next year.

Allotment for 1864-65 ..... Rs. 30,000
Expenditure during 1864-65.. ,, 25,703

Road from Alibaugh to Mandwa and Rewas. Local Funds.

209. The sanction came very late, and sufficient men to expend such a very large allotment could not be procured so late in the season.

All the money which has been spent has been applied to earthwork. Five miles of embankments from the Mandwa and Rewas ends has been completed, and the work is progressing very favourably.

Road from Oojar to Ramdir, 5½ miles. Local Funds.

210. *Surat and Broach.*—The whole of the earthwork has been completed; culverts and drains are in progress, and will be completed shortly. A great portion of metal has been heaped on the side of the road to be spread on the surface during the rains. Work in progress.

Allotment in 1864-65 ..... Rs. 57,941
Expenditure during 1864-65 .. ,, 27,817

Road from Oojar to Sayan, 6½ miles. Local Funds.

211. Earthwork has been completed, culverts and drains are in course of progress. The greater part of the metal has been dug out and heaped on the side of the road to be spread on the surface during the rains. Work in progress.

Allotment for 1864-65 ..... Rs. 40,499
Expenditure during 1864-65..... ,, 24,718

Road from Kosamba to Tarkeswar, 8½ miles. Local Funds.

212. Earthworks on a portion of this road have been thrown up. Work in progress.

Allotment for 1864-65 ..... Rs. 52,371
Expenditure during 1864-65.... ,, 4,772

Road from Unkleswar to Hansote, 13 miles. Local Funds.

Allotment for 1864-65..... Rs. 65,301
Expenditure during 1864-65..... ,, 22,153

213. The earthwork on the portion of the road from Unklesur Railway station to Sujode has been completed, and from Sujode to Hansote nearly so. Bridges, culverts, and drains are in course of progress; a large quantity of kunker and sand

COMMUNICATIONS.

has been conveyed and heaped on the side of the road, to be spread on the surface during the rains. Work in progress.

Road from Jumboosur to Amode, 6 miles. Local Funds.

214. The whole of the earthwork on this line of road has been nearly completed; most of the bridges, culverts, and drains also finished and sand spread on the road surface.

Allotment for 1864-65 ..... Rs. 28,103
Expenditure during 1864-65.... „ 34,047

Road from Amode to Palej, 14 miles. Local Funds.

215. Earthwork has been nearly completed, culverts and drains in progress.

Allotment for 1864-65..... Rs. 30,454
Expendi[illegible] during 1864-65.... „ 6,390

Road from Chota Damaun to the Wappee Railway Station, 6 miles and 4½ furlongs. Local Funds.

216. The earthwork on the portion of road lying in British Territory has been completed; moorum has been partly collected for spreading on the surface; bridges, culverts, and drains are in progress. The portion of the line in Portuguese Territory has not yet been commenced. Work in progress.

Allotment for 1864-65 ..... Rs. 40,000
Expenditure during 1864-65.. „ 11,710

Road from Surkej to Veerungaum, length 30½ miles. Local Funds.

217. *Ahmedabad.*—Some 22 miles of embankment had been constructed, and a few drains between Surkej and Sanund during the past year. The remainder of the embankments have been raised, and the whole of the masonry works up to Charodee, a distance of 15 miles, constructed. These masonry works consist of two bridges of 6 and 3-10 feet spans respectively, and 1.6×4. 1—4×4—3—4×3. and 26—2½ diameter barrel drains for irrigational purposes. From Charodee to Khetasur, a distance of 4 miles, no masonry works have been executed, owing to the difficulty experienced in getting good bricks and good contractors; between Khetasur and Veerungaum, the whole of the drains and culverts, with a few exceptions, have been constructed. These consist of a culvert of 15-5 spans, one of 6-4 ft. spans, 6-6×3, and 1. 2×3 drains; these masonry works are of brick and chunam. 5,000 trees have also been planted along the roadside. Of these, some 3,200 are at present alive and flourishing, the remainder have chiefly been destroyed by white ants.

Amount of sanction..... Rs. 1,00,000
Spent in 1864-65 ..... „ 97,494

Clearing the extension of the Veerungaum Road to Parree and Mandal up to Dhoklee. Local Funds.

218. A distance of 8 miles has been put in hand this year, some 4 miles in length have been cleared to a width of 110 ft., and side defining trenches dug.

Amount of sanction ..... Rs. 3,800
Spent in 1864-65 ..... „ 323

COMMUNICATIONS.

Road from Nerad to Kupperwunj. Local Funds.

219. *Kaira.*—The length of this road is 25 miles and 4,000 feet. During the year the earthwork of this was nearly completed, and masonry culverts and bridges finished or in course of construction; also 3 miles of road surface metalled with kunkur. Rupees 10,000 have been paid for compensation of land.

Allotment for 1864-65 ..... Rs. 50,000
Expenditure in 1864-65 ..... „ 41,649

Balance..Rs. 8,351

Road from Kaira to Memoodabad. Local Funds.

220. This road was finished on the 30th June 1864 at a cost of Rupees 42,281. The work done during the year was only metalling.

Allotment 1864-65 (balance of estimate) ..... Rs. 4,474
Expenditure 1864-65..... „ 4,216

Saving.... Rs. 258

Road from Kaira to Dhoka. Local Funds.

221. This road is 17 miles in length, out of which 12 miles were completely cleared during this year, and the remainder is in progress.

Allotment for 1864-65 (including additional sanction of Rs.900).. Rs. 5,643
Expenditure in 1864-65..... „ 3,685

Road from Anund to Oomerith. Local Funds.

222. Several drains have been built, and the last year's earth work repaired; Rupees 3,500 spent on the section of road from Oomerith to Sunluj in earthwork and clearing the line; Rupees 15,900 paid to the Collector of Kaira for land.

The large bridge over Ungharee Nullah is in progress; foundation excavated and materials are being prepared.

Allotment for 1864-65 ..... Rs. 57,035
Expenditure in 1864-65..... „ 32,475

Turning off the course of water from the direction of Wassad. Local Funds.

223. An embanked road of 20 feet in breadth has been made from the village to the Railway Station, with a small branch to connect the village with the fields. A masonry bund, 65 ft. long and 14 ft. high, has been thrown across the nullah, and road carried behind it. A waste weir of 4 openings has also been constructed. Work finished.

Allotment for 1864-65 .....Rs. 1,289
Expenditure in 1864-65 ..... „ 1,289

Road from the town of Nerad to the Nerad Railway Station. Local Funds.

224. The whole of the earthwork completed, and 1 barrel drain of 2 openings has been constructed. Work in progress.

Allotment for 1864-65 .....Rs. 2,500
Expenditure in 1864-65 ..... „ 2,065

COMMUNICATIONS.

Road from the town of Mehmoodabad to the Mehmoodabad Railway Station. Local Funds.

225. The whole of this road, which is 2,290 feet in length, has been completely embanked and drained. Metalling is in progress.

Allotment in 1864-65 (including additional sanction of Rs. 1,400).. Rs. 5,638
Expenditure in 1864-65 ..... „ 3,499

Road from Wassud to Wassud Railway Station. Local Funds.

226. The road of 20 feet breadth has been constructed to connect the Railway Station with the village. One barrel drain has been constructed, and a small piece of embankment. Work finished.

Allotment for 1864-65 .... Rs. 4,072
Deduct amount since transferred to other works ..... „ 2,300
„ 1,772
Expenditure in 1864-65..... „ 1,771

Road from Borsad to the Wassud Railway Station. Local Funds.

227. This line of road is 12 miles long, out of which 4 miles have been completely cleared. Work in progress.

Allotment for 1864-65 ..... Rs. 4,800
Expenditure in 1864-65 ..... „ 966

Road from Timrwa to Palee. Local Funds.

228. The whole of the line, 9 miles in length, has been cleared. Work in progress.

Allotment for 1864-65..... Rs. 4,800
Expenditure in 1864-65 ..... „ 2,752

Clearing the Road between Gosha and Gotra. Local Funds.

229. The whole of this road has been cleared. Length 15 miles 3,300 feet.

Allotment for 1864-65 ..... Rs. 8,000
Expenditure in 1864-65 ..... „ 7,902

Road from Dohad to Godra. Local Funds.

230. Earthworks are nearly finished from Kakria to Godra. Several culverts have been constructed. Two large masonry bridges, viz. at Khurd and Bapooee, are in progress, and will be finished before the rains.

Allotment for 1864-65 ..... Rs. 1,85,587
Expenditure in 1864-65 ..... „ 45,663

Improving the Crossing or Ford of the Mhyjee at Palee. Local Funds.

231. The improvements made over this ford are banks of the river sloped on both sides. Roadway of fascines constructed across wet bed of river, and the dry bed track cleared and levelled. Catch-water drains dug. Work finished on the 11th February 1865.

Allotment for 1864-65 ..... Rs. 1,000
Expenditure in 1864-65 ..... „ 879
Saving.... Rs. 121

COMMUNICATIONS.

Tree Plantations, Road side. Local Funds.

232. Nursery for planting road-side trees. A well sunk, and about 10,000 trees raised. Work in progress.

Allotment 1864-65 ..... Rs. 2,000
Expenditure in 1864-65 ..... „ 2,000

Bridge on the Road from Ozur to Panwell. Local Funds.

233. *Northern Concan.*—An iron bridge over the Belpara Creek on this line was under construction, but the Superintending Engineer has ordered the work to be stopped. Having had an opportunity of inspecting the crossing, the Superintending Engineer has come to the conclusion that it will be better to remove the iron piles already imperfectly screwed down, and to replace the proposed iron bridge by [illegible]banked causeway protected by stone-pitching.

Allotment for 1864-65 ..... Rs. 4,245
Expenditure during 1864-65 .. „ 2,116

Culverts and Drains on the Road from the Par River to Cheewal. Local Funds.

234. *Surat and Broach.*—Culverts and drains on the road from Balda Pardee Railway Station to Cheewal, 15 miles, have been nearly completed.

Allotment for 1864-65..... Rs. 9,483
Expenditure in 1864-65 ..... „ 6,332

Bridges at Ojpar and Mussua. Local Funds.

235. The whole of the timber work of the bridges has been finished during the year. Work completed.

Allotment for 1864-65 ..... Rs. 7,704
Expenditure in 1864-65 ..... „ 18,357

Timber Bridge at Achole. Local Funds.

236. This work was let on contract, and the amount shown as expenditure during the year is on account of payment made to the contractor for woodwork prepared by him for the bridge work in progress.

Allotment for 1864-65 ..... Rs. 12,000
Expenditure in 1864-65 ..... „ 9,184

Iron Bridge (Screw Piles) over the River Seree on the road from Nejisd to Mulsoonda. Local Funds.

237. *Kaira.*—This work was given to contractors, Messrs. Forde and Preston, who have not commenced it during the year.

Allotment for 1864-65..... Rs. 30,000
Balance .... Rs. 30,000

Iron Girder Bridge over the Chota Bhessaa near Pheydra. Dharmsala Fund.

238. This bridge has been erected by the Contractors Messrs. Forde and Preston. Part of the material was brought up last season, and two piers put in; the remaining portion was completed in February last; the brick pitching to the approaches in lieu of abutments, (there being no practicable foundations,) is however not yet completed; it will be, it is believed,

COMMUNICATIONS.

by the end of May. The bridge consists of 9 30 ft. spans with planked roadway. The funds are made available from the Dhurrumtalo Fund.

Amount of sanction ..... Rs, 42,538
Paid up to 30th April 1865 ..... „ 36,414

Bridges.

239. *Sind.*—The sum of Rs. 37,653 has been expended in bridging the roads from Hydrabad to Roree, and Hydrabad to Oomercote; but it was not found possible to complete all the bridges on the first named line. Sixteen bridges of different spans have been completed during the year, and 28 are in various stages of progress; twenty remain to be commenced. Eight small bridges were also built on the trunk road which passes through H. H. Alli Moorad's territory. The whole cost of bridging these roads is borne by the Local Funds. On the road from Shikarpoor to Jacobabad 2 bridges of 10 and 16 arches, 10 feet span, have been built for the passage of flood water; and the embankment, 4 miles long, in which the bridges are placed, has been raised throughout from Imperial Funds.

River Improvements.

240. *Rock Cutting at Sukkur.*—Expenditure during the year Rs. 22,342. No advantage can be yet derived from this work, as it is necessary to keep up an embankment that the work may proceed during the inundation. Progress has been slow, owing to the failure of the contractor.

Monuments and Memorials.

Wellington Memorial Fountain.

241. *Bombay.*—This work consists of taking down the Fountain under construction by private subscription, and raising it 4 feet above the level of the road, by surrounding it with basalt polished steps of 12 in. tread and 6 in. rise, with a midway landing of 3 feet, and providing 4 drinking basins at four of the sides of the octagon. The parapets and steps and basins are completed, but have to be polished and finished; the lamps are also provided, but have to be erected, fitted, and connected with gas.

Expended in 1864-65 ..... Rs. 6,160
Allotment in Rampart Removal Committee's Budget 1864-65.... „ 6,126

MISCELLANEOUS.

MISCELLANEOUS PUBLIC IMPROVEMENTS.

Tanks and Reservoirs at Matheran. Local Funds.

Excavating Tanks.

Allotment for 1864-65 ..... Rs. 12,000
Expenditure during 1864-65 .. „ 7,800

MISCELLANEOUS.

242. *Northern Concan.*—For this sum of money, all of which has not yet been expended, four (4) tanks have been taken in hand.

The Ponsonby Spring, estimated cost Rupees 6,947, has been completed, showing a saving of Rupees 1,937 on the estimate. This is a very substantially built tank, and will amply supply all that side of Matheran with water throughout the year.

The dam near Mr. Juggonnath Sunkersett's house, estimated cost Rupees 2,919, has been excavated, and the foundations prepared. There is also a quantity of stone prepared for next year's work, though no actual superstructure has been done this season.

The tank near the Sick Officers' Quarters (estimated cost 1,571; expenditure 896) is in the same stage of progress as the above; both of these will be quickly run up next season, now that everything is prepared. Water for building purposes has been so scarce this year, that no actual building could go on at Chowk Point, or near the Sick Officers' Quarters.

The tank near Mr. Robertson's house, estimated to cost Rupees 3,019, consists of an excavation cut in the rock, and being in a very central position, will supply a great many houses with water. Only Rupees 722 have yet been spent, but the work is in full progress now, and will be, it is hoped, completed before the rain falls.

Other tanks and drains have to be designed and estimated for before the entire water supply of Matheran will be complete.

Municipal Works.

New Machine House, and laying down Pipes for Sir Jamsetjee's Water Works at Poona.

243. *Poona.*—Steam pumps, capable of discharging 15,000 gallons of water per hour, were presented to Government for the use of Poona by the Honourable Mr. Rustomjee Jamsetjee Jeejeebhoy, and they were erected and were worked during the past hot season. The cost of erection was Rupees 25,959. The cost was defrayed by the Honourable Rustomjee Jamsetjee Jeejeebhoy.

Earthen Bund on top of Sir Jamsetjee's Bund, Poona.

244. This work was very successful, and dammed up an additional 3 feet of water in the Poona and Kirkee rivers; it however is of a temporary nature, and a similar expense must be yearly incurred to obtain the same advantage.

Amount of estimate ..... Rs. 2,046
Expended to 30th April 1865... „ 2,064

ELECTRIC TELEGRAPH.

MISCELLANEOUS.

Anglo-Indian Telegraph Building.

245. *Sind.*—The offices at Oomoora and Pusnee for the Anglo-Indian Telegraph have been completed. Very extensive buildings at Kurrachee were commenced under directions from Colonel Stewart; the expenditure during the year amounted to Rs. 1,00,006. A large amount of work has been done by the Superintendent Harbour Works at Manora for the Telegraph Department, in the construction of 4 iron cable tanks, with a shed 200 feet long by 40 feet wide. The expenditure was adjusted by payment by the Telegraph Department, and is not brought into [illegible] ment.

51

No. 2714 / 2191 of 1865,

Public Works Department.

To,

The Secretary to the Government of Madras.

Sir,

I am directed to transmit four Copies of the Annual Progress Report of Public Works in the Bombay Presidency for the year 1864-65.

I have the honor to be,

Sir,

Your most obedient Servt.

Bombay Castle, 14th October 1865.

J. Gordon Lieutenant, R.E.

Secretary to Government.

No. 4. Superintending Engineer's Office &c &c

Sir Lo me 13th Dec 1865

To

Lieut Col. Sir A. Clarke R.E.

Superintending Engineer &c &c

Sir,

Colonel Sir A. Clarke R.E.

Secretary to Government &c &c

Sir,

With reference to the Appointments in the Gazette of the 10th inst, of Lieutenant Engineer (R.E.) to join the South West Coast I have the honor to request I may be informed how he is to be employed in that District. The Range is vacant, & (Mr Crawford) who for some months past has had charge of the portion of the I Range has just been transferred to Tenasserim and I was about to report that his Services were no longer required. Nearly all the damages caused by the floods of last October have been repaired, and the Cost of Superintendence was getting very high in proportion to work done in the part of the Range of which Mr Crawford had charge.

I have the honor to be

Sir

Your most Obedient Servt

E A Arnold Lieut Col R.E.

Superintending Engineer

Pol. 1865 Dist.
Con. for Calcutta
No. 4096

From,

The Superintending Engr.
5th Division

To,

The Secretary to
Government of N.W.P.

Dated 13th
Received 16th } October 1865

No. 44.

Subject - Mr. Rob Thompson
- his services
transferred
from S. Circle
to Lucknow
31 Oct 65

Request to be informed
whether Government Engineer
Mr. R. Thompson
is to be
[illegible]
[illegible]
[illegible]
[illegible]

Lodge
No. 77